From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Thu, 23 Feb 2012 15:23:33 -0500
To: Otwell, Camisha (CDC/OID/NCEZID);Pitts, Richard L. (CDC/OID/NCEZID);Tang, Xiaoling (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Ansari, Uzma (CDC/OID/NCEZID);Lyons, Amanda K. (CDC/OID/NCEZID);McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Bedi, Kanwar (CDC/OID/NCEZID);Goldstein, Jason (CDC/OID/NCEZID);Hughes, Heather (CDC/OID/NCEZID);Liu, Merry (CDC/OID/NCEZID)
Subject: 2-27 Production/Training Schedule update - - RE: Cross Training in Cell Culture Production
Attachments: Cell Culture Production Schedule-2-27-2012.xlsx

Good afternoon,

Below is the schedule for next week (also attached). We will try to keep this schedule for the next three weeks for your planning purposes. Please welcome Mandy and Uzma who will be joining the rotation observing and helping Kiosy and Xiaoling. I will continue to follow up with individuals and plan to schedule a meeting next Tuesday.

If you have any questions or adjustments to the schedule please let me know.

Thank you for all your effort and cooperation!

Dennis

CELL CULTURE - Week of 2/27 SCHEDULE

MONDAY

CELL LINE	BIOLOGIST - Observer	STOCKS	NOTES
E-6	Kiosy - Uzma		
Hela-O	Kiosy		
MDCK	X. Tang		
VERO-P	L. Pitts		
VERO	L. Pitts		
L20B	L. Pitts		
RD	L. Pitts		
MDCK-S	C.J. Otwell		
MDCK-L	C.J. Otwell		
HELA	C.J. Otwell		

TUESDAY

CELL LINE	BIOLOGIST	STOCKS	NOTES
HEK-293	X. Tang		

HEP2C	C.J. Otwell
CHO	Stacey
VERO	Kiosy - Mandy

WEDNESDAY			
CELL LINE	**BIOLOGIST**	**STOCKS**	**NOTES**
HLF	X. Tang - Uzma		
THP-1	X. Tang		
E-6	C.J. Otwell		
MDCK-L	C.J. Otwell		
SF9	Kiosy - Mandy		

Thursday			
CELL LINE	**BIOLOGIST**	**STOCKS**	**NOTES**
MA104	L. Pitts		
E-6	X. Tang		
Hela	C.J. Otwell		
MDCK-S	C.J. Otwell		

FRIDAY			
CELL LINE	**BIOLOGIST**	**STOCKS**	**NOTES**
RD	L. Pitts		
L20B	L. Pitts		
MDCK	Kiosy - Uzma		
BSC40	X. Tang		
A549	Kiosy		

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Wednesday, February 08, 2012 2:58 PM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Liu, Merry (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: 2-08 Production/Training Schedule update - - RE: Cross Training in Cell Culture Production

Good afternoon,

Below are the schedule for the rest of the week and the schedule for next week (also attached). I will continue to follow up with individuals and plan to schedule a meeting with everyone next week.

If you have any questions please let me know.

Thank you for all your effort and cooperation!

Dennis

Thursday February 9th
MA104 - Marvin and Lee
E-6 - Angel and Xiaoling
Hela - Merry and CJ

Friday February 10th
RD - Kiosy and Lee
L20B - Kiosy and Lee
MDCK - Marvin
BSC40 - Angel and Xiaoling
MDCK-S - Merry

<< OLE Object: Picture (Device Independent Bitmap) >>

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Tuesday, February 07, 2012 11:41 AM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Liu, Merry (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: 2-07 update - - RE: Cross Training in Cell Culture Production

I apologize for the late notice. I have not had the opportunity as I had hoped to meet prior to today so I will be meeting individually with trainees and members of the Team, draft an agenda and re-schedule the meeting I had planned for today. If you have any questions please let me know.

Dennis

<< File: Cross Trainin CCD production schedule-2-13-2012.xlsx >>

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Thursday, January 26, 2012 2:05 PM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Liu, Merry (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: Cross Training in Cell Culture Production

Good morning,

I wanted to follow up on our conversation about cross training. This is a very exciting time for the branch and your participation in the next phase of cross training as part of implementing our quality systems is extremely important. We are cross training three people at once (C.J, Lee and Xiaoling) and will begin the four month period next week. As the cross training program in the branch is evolving we are going to approach this a little differently. We will start next week with an orientation, question and answer meeting to starting lab work. It will probably be scheduled next Tuesday or Wednesday and last about an hour. I'll prepare the agenda and send out a meeting invitation, but in the meantime please review the two documents I have attached. One is a draft of the training matrix and the other is an average weekly work distribution for standing orders detailing the cells lines, the time the work is usually performed, the time it takes to do the work, stocks, the containers and types of products provided.

Please contact me if you have any questions or would like to discuss.

Thank you for your participation!

Dennis

<< File: production schedule-1-25-2012.xlsx >> << File: Tier 1 Cell Culture Training Matrix Information.docx >>

CELL CULTURE - Week of 2/27 SCHEDULE						
MONDAY						
CELL LINE	BIOLOGIST - Observer	STOCKS			NOTES	
E-6	Kiosy - Uzma					
Hela-O	Kiosy					
MDCK	X. Tang					
VERO-P	L. Pitts					
VERO	L. Pitts					
L20B	L. Pitts					
RD	L. Pitts					
MDCK-S	C.J. Otwell					
MDCK-L	C.J. Otwell					
HELA	C.J. Otwell					
TUESDAY						
CELL LINE	BIOLOGIST	STOCKS			NOTES	
HEK-293	X. Tang					
HEP2C	C.J. Otwell					
CHO	Stacey					
VERO	Kiosy - Mandy					
WEDNESDAY						
CELL LINE	BIOLOGIST	STOCKS			NOTES	
HLF	X. Tang - Uzma					
THP-1	X. Tang					
E-6	C.J. Otwell					
MDCK-L	C.J. Otwell					
SF9	Kiosy - Mandy					
		Thursday				
CELL LINE	BIOLOGIST	STOCKS			NOTES	
MA104	L. Pitts					
E-6	X. Tang					
Hela	C.J. Otwell					
MDCK-S	C.J. Otwell					
FRIDAY						
CELL LINE	BIOLOGIST	STOCKS			NOTES	
RD	L. Pitts					
L20B	L. Pitts					
MDCK	Kiosy - Uzma					
BSC40	X. Tang					
A549	Kiosy					

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Tue, 21 Feb 2012 23:07:05 -0500
To: Otwell, Camisha (CDC/OID/NCEZID);Pitts, Richard L. (CDC/OID/NCEZID);Tang, Xiaoling (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Bedi, Kanwar (CDC/OID/NCEZID);Goldstein, Jason (CDC/OID/NCEZID);Liu, Merry (CDC/OID/NCEZID)
Subject: 2/22, 2/23 and 2/24 Production Schedule update

Following up our conversations this afternoon the schedule for the rest of the week should be:

Wednesday
- HLF Xiaoling and Kiosy
- THP1 Xiaoling
- E-6 C.J.
- MDCK-L C.J.

Thursday
- MA104 Lee
- E-6 Xiaoling
- Hela C.J.
- MDCK-S C.J.

Friday
- RD Lee
- L20B Lee
- MDCK Kiosy
- BSC40 Xiaoling
- A549 Kiosy

If there is anything that I missed or need to address (or you have questions) please let me know. I will schedule a meeting later this week to discuss lessons learned so far, your suggestions moving forward and establish a regular production schedule.

Thanks,

Dennis

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Friday, February 17, 2012 9:10 AM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID); Liu,

Merry (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID)
Subject: 2/21 Production Schedule update - - RE: Cross Training in Cell Culture Production

Good morning,

Below is the schedule for Tuesday due to the holiday. If there is anything that I need to address (or you have questions) please let me know. Have a great weekend and thanks for all your hard work!

Dennis

E-6	Kiosy
MDCK	X. Tang with Kiosy observing and helping
Hela	C.J. (Merry observing and helping)
MDCK-S	C.J. (Merry observing and helping)
MDCK-L	C.J. (Merry observing and helping
Vero- P	Lee
Vero	Lee
L20B	Lee
RD	Lee
HEK-293	Marvin
HEP2C	Marvin
CHO	Marvin will process these if necessary

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Wednesday, February 08, 2012 2:58 PM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Liu, Merry (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: 2-08 Production/Training Schedule update - - RE: Cross Training in Cell Culture Production

Good afternoon,

Below are the schedule for the rest of the week and the schedule for next week (also attached). I will continue to follow up with individuals and plan to schedule a meeting with everyone next week.

If you have any questions please let me know.

Thank you for all your effort and cooperation!

Dennis

Thursday February 9th
MA104 - Marvin and Lee
E-6 - Angel and Xiaoling

Hela - Merry and CJ

Friday February 10th
RD - Kiosy and Lee
L20B - Kiosy and Lee
MDCK - Marvin
BSC40 - Angel and Xiaoling
MDCK-S - Merry

<< OLE Object: Picture (Device Independent Bitmap) >>

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Tuesday, February 07, 2012 11:41 AM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Liu, Merry (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: 2-07 update - - RE: Cross Training in Cell Culture Production

I apologize for the late notice. I have not had the opportunity as I had hoped to meet prior to today so I will be meeting individually with trainees and members of the Team, draft an agenda and re-schedule the meeting I had planned for today. If you have any questions please let me know.

Dennis

<< File: Cross Trainin CCD production schedule-2-13-2012.xlsx >>

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Thursday, January 26, 2012 2:05 PM
To: Otwell, Camisha (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Liu, Merry (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Hughes, Angel (CDC/OID/NCEZID); Smith, Marvin L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Bedi, Kanwar (CDC/OID/NCEZID); Goldstein, Jason (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: Cross Training in Cell Culture Production

Good morning,

I wanted to follow up on our conversation about cross training. This is a very exciting time for the branch and your participation in the next phase of cross training as part of implementing our quality systems is

extremely important. We are cross training three people at once (C.J, Lee and Xiaoling) and will begin the four month period next week. As the cross training program in the branch is evolving we are going to approach this a little differently. We will start next week with an orientation, question and answer meeting to starting lab work. It will probably be scheduled next Tuesday or Wednesday and last about an hour. I'll prepare the agenda and send out a meeting invitation, but in the meantime please review the two documents I have attached. One is a draft of the training matrix and the other is an average weekly work distribution for standing orders detailing the cells lines, the time the work is usually performed, the time it takes to do the work, stocks, the containers and types of products provided.

Please contact me if you have any questions or would like to discuss.

Thank you for your participation!

Dennis

<< File: production schedule-1-25-2012.xlsx >> << File: Tier 1 Cell Culture Training Matrix Information.docx >>

From: Bailey, Tandra (CDC/OID/NCEZID)
Sent: Tue, 9 Apr 2013 18:15:04 -0400
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID);Cobb, Gary L. (CDC/OID/NCEZID)
Subject: Certificates of Analysis

Hello Jason,

The following Certificates of Analysis for Cell Line Production are available in the QC folder.

4/9/2013	VeroP	122172
	MDCK	122056

The following Certificates of Analysis for Cell Line Production are pending upload of micrograph or confirmation of flask with DHR.

4/9/2013	HELA	122052	Flask Confirmation/Micrograph
	BSC-40	122094	Flask Confirmation/Micrograph
	L20-B	122085	Flask Confirmation/Micrograph
	RD	122091	Flask Confirmation/Micrograph
	RD	122160	Flask Confirmation/Micrograph
	SF9	122182	Flask Confirmation/Micrograph
	L20-B	122157	Flask Confirmation/Micrograph
	HELA	122174	Micrograph
	MDCK	122177	Micrograph
	E6	122132	Micrograph
	MDCK-L	122193	Micrograph
	HEK-293	122199	Flask Confirmation/Micrograph
	HEP 2C	122202	Micrograph

Thanks,
Tandra Bailey

From: Sweat, Stacey (CDC/OID/NCEZID)
Sent: Mon, 5 Dec 2011 13:42:17 -0500
To: Liu, Merry (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Smith, Marvin L. (CDC/OID/NCEZID)
Subject: December Mycoplasma Testing

Hi Guys,
It's time to collect mycoplasma samples for December. Here's the list:

Hela
Vero-P
RD (Monday)
L20B (Monday)
HEK
Hep2C
BSC-40
E-6 (Monday)
E-6 (Thursday)
MDCK-L (Monday)

Thanks,
Stacey

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Fri, 10 Aug 2012 00:35:25 -0400
To: Ansari, Uzma (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Lyons, Amanda K. (CDC/OID/NCEZID);Pitts, Richard L. (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Tang, Xiaoling (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Hughes, Heather (CDC/OID/NCEZID);Taylor, Curtis (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: FW: Cell Production Schedule 8-13 - 8-17
Attachments: Cell Culture Production Schedule-8-13 to 8-17-2012.xlsx

There were errors in the production schedule that was sent earlier today. Please follow the rotation assignments (below) that have been distributed since July.
Thanks,
Jason

CELL LINE	PRIMARY BIOLOGIST - (SECONDARY/ALTERNATE)
MONDAY(Orders)	
E-6	Xiaoling (Kiosy/Mandy)
MDCK	Stacey/Uzma (Kiosy)
MDCK-L	Kiosy (Uzma/Stacey)
VERO-P	Lee (Mandy/Uzma)
HELA	Kiosy (Xiaoling/Mandy)
L20B	Mandy (Lee/Uzma)
RD	Mandy (Lee/Uzma)
Sf9	Kiosy (Xiaoling/Uzma)
LLCMK2	Stacey (Uzma/Kiosy)
VERO	Lee (Mandy/Uzma)
MTA Cell lines	Stacey (Uzma)
TUESDAY(Orders)	
HEK-293	Lee (Mandy/Uzma)
HEP2C	Kiosy (Xiaoling/Mandy)
HT10	Mandy(Xiaoling/Kiosy)
PLCP	Stacey(Uzma/Mandy)
WEDNESDAY (Orders)	
HLF	Xiaoling (Kiosy/Uzma)
SF9	Kiosy (Xiaoling/Uzma)

MDCK-L	Kiosy (Uzma/Stacey)
A549	Stacey (Xiaoling/Kiosy)
THURSDAY(Orders)	
MA104	Stacey (Uzma/Kiosy)
E-6	Xiaoling (Kiosy/Uzma)
HELA	Kiosy (Xiaoling/Uzma)
LLCMK2	Stacey (Uzma/Kiosy)
CRFK	Kiosy (Xiaoling/Mandy)
FRHK	Uzma(Lee/Mandy)
THP-1	Uzma (Lee/Mandy)
FRIDAY (Orders)	
RD	Mandy (Lee/Xiaoling)
MDCK	Stacey/Kiosy (Uzma)
L20B	Mandy (Lee/Uzma)
BSC40 (following Mon release; est)	Mandy (Lee/Xiaoling)

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thursday, August 09, 2012 6:12 PM
To: Ansari, Uzma (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Lyons, Amanda K. (CDC/CCID/NCPDCID) (CTR) (gvd4@cdc.gov); Pitts, Richard L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID); Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Hughes, Heather (CDC/OID/NCEZID)
Subject: Cell Production Schedule 8-13 - 8-17

Attached is schedule for next week. Please send me any updated passage information for your new lines, as well as any other corrections for established lines. Thank you Kiosy for your assistance with updating this schedule (passage number and unit volumes) during my absence.
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Acting Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)

Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 Room 6-166
MS-D34
Atlanta, GA 30333
(404) 639-2258
(404) 384-9317 Mobile
(404) 639-3129 Fax
jgoldstein1@cdc.gov

From: Thompson, Penny (CDC/OID/NCEZID)
Sent: Thu, 5 May 2016 15:54:53 -0400
To: Lin, Seh-ching (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Petway, David (CDC/OID/NCEZID)
Subject: FW: Friendly reminder cell line HEK needs to be collected.

Hi Kiosy,
Please see the message below.
Thanks,
Penny

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Thursday, May 05, 2016 3:54 PM
To: Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Subject: RE: Friendly reminder cell line HEK needs to be collected.

☺ I have the amount I need. Not sure if I'll need more in the future but I will place another order if I need them. Thanks!

From: Thompson, Penny (CDC/OID/NCEZID)
Sent: Thursday, May 05, 2016 3:31 PM
To: Galloway, Renee (CDC/OID/NCEZID) <zul0@cdc.gov>
Subject: RE: Friendly reminder cell line HEK needs to be collected.

Hi Renee,
Did you collect the cells needed. If not please take all of them, and dispose of the ones you don't need. If you have come and got the cell lines needed, then I will ask the cell team to dispose of the others. I don't want to ask them to toss any until I am sure you have the amount needed. That would not be good for me. HAHAHA
Thanks,
Penny

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Thursday, May 05, 2016 3:02 PM
To: Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Subject: RE: Friendly reminder cell line HEK needs to be collected.

Hi Penny,

I only needed 1 lot. Should I dispose the others that I don't need? I'm new to cell cx ☺

From: Thompson, Penny (CDC/OID/NCEZID)
Sent: Friday, April 29, 2016 10:11 AM
To: Galloway, Renee (CDC/OID/NCEZID) <zul0@cdc.gov>
Subject: Friendly reminder cell line HEK needs to be collected.

Hi Renee,
Just a friendly reminder your two lots of cell line HEK is ready for pick up.
Happy Friday, April 29, 2016

Penny
No worries! ☺

From: Thompson, Penny (CDC/OID/NCEZID)
Sent: Wed, 30 Mar 2016 11:42:53 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Petway, David (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID)
Subject: FW: Mycoplasma samples for March 2016

Hi all,
FYI This order did go out today, I just sent the FedEx tracking number to (b)(6)
YAYYYY!!!
Penny

From: Thompson, Penny (CDC/OID/NCEZID)
Sent: Tuesday, March 29, 2016 2:21 PM
(b)(6) (b)(6) Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>; Hughes, Heather (CDC/OID/NCEZID) <bsf8@cdc.gov>
Subject: RE: Mycoplasma samples for March 2016

Hi all,
I want to apologize and inform everyone, unfortunately we missed the cut off time for shipping the cell lines today. Your cell lines will be shipped tomorrow, arriving on Thursday around noon.
Again my apologies for this delay.

Penny Thompson
CDC/NCEZID/DSR/OD
Quality Assurance Specialist
Roybal Campus
Building 23 5th floor-room 5-118
Phone: 404-639-2449 MS A-03
Fax: 404-929-2750

http://intranet.cdc.gov/ncezid/dsr
http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

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From: Cynthia Martino (b)(6)
Sent: Tuesday, March 29, 2016 10:50 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Heather Trumble (b)(6) Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>

Cc: Amy Moquin (b)(6) Cynthia Martino (b)(6) Heather Trumble (b)(6) Karin Goodrich (b)(6) Laura Brooks (b)(6)
Subject: RE: Mycoplasma samples for March 2016

Thank you Jonathan.

We see from the sample submission details that Kiosy forwarded, two lines will be subjected to both tests/qualified including the E6 as well as the HEK line.

Cynthia

From: Moon, Jonathan L. (CDC/OID/NCEZID) [mailto:iki5@cdc.gov]
Sent: Tuesday, March 29, 2016 10:42 AM
To: Cynthia Martino (b)(6) Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Heather Trumble (b)(6) Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: PCR (b)(6)
Subject: RE: Mycoplasma samples for March 2016

Good Morning Cynthia,

Please note that we are sending a line called E6 (Panama) that should be treated as a new sample and have both tests run.

Thanks,

Jonathan

From: Cynthia Martino (b)(6)
Sent: Tuesday, March 29, 2016 10:12 AM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Heather Trumble (b)(6) Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; PCR (b)(6)
Subject: RE: Mycoplasma samples for March 2016

Hi Kiosy and thank you for forwarding your submission details.

Our team is growing and, as such, there are now more individuals involved in processing your samples. To be sure the right people are contacted/notified, please address all email communication to (b)(6) . This will ensure that all of the right people are copied.

Thanks in advance!

Cynthia

From: Lin, Seh-ching (CDC/OID/NCEZID) [mailto:syl2@cdc.gov]
Sent: Tuesday, March 29, 2016 10:05 AM
To: Heather Trumble (b)(6) Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: Cynthia Martino (b)(6) Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: Mycoplasma samples for March 2016

Heather,

The samples will be shipped today.
Thanks,

Kiosy

From: Petway, David (CDC/OID/NCEZID)
Sent: Thu, 22 May 2014 16:21:47 -0400
To: Cobb, Gary L. (CDC/OID/NCEZID);Warren, Donnell (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: FW: Please see below for three different consolidated options. The attachments include the below in word format and the comprehensive document.
Attachments: Prepardness response to dr. Black full write up.docx, Prepardness response to dr. Black.docx

FYI, see below.
Jonathan I apologize this put together on short notice and there was a lot going on today so I was getting it done intermittently as I could.
However I would be happy to go over the full write up with you for informational purposes.

David J. Petway, MBA
Acting Deputy Director Scientific Products and Support Branch
CDC/NCEZID/DSR
Phone: 404-639-2202
Cell: 404-610-5967

From: Black, Carolyn (CDC/OID/NCEZID)
Sent: Thursday, May 22, 2014 3:15 PM
To: Petway, David (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: RE: Please see below for three different consolidated options. The attachments include the below in word format and the comprehensive document.

Thanks very much – I used option 1 to construct a reply. I'll let you know what I hear back from them. I really appreciate the short turnaround and the thought that you put into the analysis. It's good for us to have this kind of thing ready for future inquiries. It does seem a little strange (b)(5)

(b)(5)

cmb

From: Petway, David (CDC/OID/NCEZID)
Sent: Thursday, May 22, 2014 2:45 PM
To: Black, Carolyn (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: FW: Please see below for three different consolidated options. The attachments include the below in word format and the comprehensive document.

Dr. Black please see the below. There are three options presented but I believe the first two are the most viable. The 1st four points are the overall assumptions made in the model.

The information below is attached in a word document along with a much more detailed piece that shows how/why I arrived at the number (the full write up).

David J. Petway, MBA
Acting Deputy Director Scientific Products and Support Branch
CDC/NCEZID/DSR
Phone: 404-639-2202
Cell: 404-610-5967

From: Petway, David (CDC/OID/NCEZID)
Sent: Thursday, May 22, 2014 2:10 PM
To: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: Please see below for three different consolidated options. The attachments include the below in word format and the comprehensive document.

With the following assumptions: (this is just the assumptions and would not be going forward)

(b)(5)

(b)(5)

David J. Petway, MBA
Acting Deputy Director Scientific Products and Support Branch
CDC/NCEZID/DSR
Phone: 404-639-2202
Cell: 404-610-5967

With the following assumptions:

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Thu, 16 Jul 2015 23:24:09 -0400
To: Miller, Joseph D. (CDC/OID/NCEZID)
Cc: Goldstein, Jason (CDC/OID/NCEZID)
Subject: FW: Request for Info: Research using Fetal Tissue

Joe,

The list below contains all the cell lines Jason's team has cultured since we became responsible for the cell culture activity and the 1000s of vials in storage. (b)(5)

(b)(5)

Dennis

CELL LINE	DESCRIPTION
HLF	HLF, Human, Embryonic Lung Fibroblast
HEK293	HEK, Human, Kidney epithelial
HELA	HELA, Human, Cervical Carcinoma; epithelial
HEP2C	HEP 2C, Human, Larnyx; epithelial
RD	RD, Human, Rhabdomyosarcoma (Pelvis)
H292	H-292-ATCC, Human, Lung Carcinoma; epithelial
A549	A549, Human, Lung Carcinoma
THP-1	THP-1, Human Monocyte
HMEC-1	Human Foreskin Endothelial Cells (transformed)
BMEC-1	Human Brain Endothelium
HBEC-5i	Human Brain Endothelium
HT-1080	Human, Fibrosarcoma
PLC-PRF5	Human, Liver
HEPG2	Hepatocellular carcinoma, human
HEK293T/17	highly transfectable derivative of the 293 cell s (human embryonic kidney)

INT-407	human, intestine, embryonic
HCT-8,	human intestinal adenocarcinoma
WT/A	WT/A, Human, Keratinocytes
K-562,	Human, Chronic Myelogenous Leukemia
HS68	Human foreskin fibroblast
KG-1	human acute myeloid leukemia
MRC-5 PDL	Human Lung Fibroblasts

From: Townsend, Michael B. (CDC/OID/NCEZID) (CTR)
Sent: Wed, 11 Jan 2017 13:56:52 -0500
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: HEK cell question

Hi Jonathan,
I will need some HEK cells to express antibodies in about a month. I see 2 versions in BIOS, but can't seem to download the associated pdf files (I keep getting a time out error). Can you forward me the files, of if you are familiar with them, let me know the differences?

Regards,
Michael

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Wed, 16 Nov 2011 13:55:35 +0000
To: Liu, Merry (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID)
Subject: HEK Cells...

Ray Campagnoli cancelled his order for HEK cell on 11/22/2011. I need someone to split the cell line for the week of 11.29.2011 for production.

Marvin L. Smith B.S., MPH, DHeD
404-639-2418
Email: aqy6@cdc.gov
Biologics Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 6th Floor Cubicle 137
MS-D34
Atlanta, GA 30329

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Wed, 28 Dec 2011 13:54:24 +0000
To: Campagnoli, Ray (CDC/OID/NCIRD)
Subject: HEK Cells

Ray, I got my days mixed up. The HEK cell will be ready on today. Sorry for the delay.

Marvin L. Smith B.S., MPH, DHeD
404-639-2418
Email: aqy6@cdc.gov
Biologics Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 6th Floor Cubicle 137
MS-D34
Atlanta, GA 30329

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Tue, 5 Jul 2016 07:28:00 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: HEK cells

Hi Jonathan,

FYI, I no longer need the HEK cells, so there is no need to keep the line going (if I'm the only one using them) -- thanks for letting me use some space as well!!!

Renee Galloway, MLS (ASCP)^{CM}, MPH
CDR, USPHS
Microbiologist, Zoonoses and Select Agent Laboratory
Centers for Disease Control and Prevention
404-639-5461

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Fri, 21 Jun 2013 10:33:36 -0400
To: CDC NCEZID DSR Quality Assurance;Ansari, Uzma (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Lyons, Amanda K. (CDC/OID/NCEZID);Pitts, Richard L. (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Tang, Xiaoling (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Taylor, Curtis (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Guess-Skinner, Deborah (CDC/OID/NCEZID)
Subject: ICD Cell Production Schedule
Attachments: Cell Culture Production Schedule-6-24 to 6-28-2013.xlsx

Attached is schedule for week of 6/24-6/27/2013.

Please send necessary corrections to QA and me if your lines have incorrect passage limits,

The outstanding SOPs include VeroP and HEK-293. QA please correct if necessary?

The HLF line is listed as reaching passage limit.

MDCK-L production is 2x a week until end of July.

Please provide current passage info for MDCK-L and Vero-P.

Leave: Uzma (Mon)

Our next meeting will be Tues 6/25.

Thanks for all your hard work,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 Room 5-164
MS-A03
Atlanta, GA 30333
(404) 639-2258
(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thu, 14 Feb 2013 15:46:33 -0500
To: Ansari, Uzma (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Lyons, Amanda K. (CDC/OID/NCEZID);Pitts, Richard L. (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Tang, Xiaoling (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Taylor, Curtis (CDC/OID/NCEZID);Hughes, Heather (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Groom, Tiffany (CDC/OID/NCEZID);Thompson, Penny (CDC/OID/NCEZID)
Subject: ICD Team Cell Production Schedule
Attachments: Cell Culture Production Schedule-2-18 to 2-22-2013.xlsx
Importance: High

Attached is schedule for compressed week of 2/19-2/22/2013. **Most of the lines are highlighted for expired/approaching passage limit (see below).** If you are currently producing cells that have an expired passage # we will need to notify QA immediately in anticipation of possible quality issues with cells.
Please review and send corrections or updates ASAP before end of week.

Our next production meeting is 3/5 given the holiday week. We can meet together if urgent issues arise.
Thanks again for your hard work.
Jason

LINE	PASSAGE/LIMIT
E-6	P26/P26
MDCK	P68/P78
MDCK-L	P19/P34
HELA	P36/P39
L20B	P29/P33
RD	P240/P245
Sf9	P40/P36
BSC40	P52/P54
TUESDAY(Orders)	
HEK-293	P66/P68
HEP2C	P1801P180
WEDNESDAY (Orders)	
HLF	P25/P29
MDCK-L	P19/P34
A549	P75/P85
CHO-K1	P7/P23
CHO-MMR	?

K562	P8/P23
K562/DC-SIGN	?
N3T3	P40/P56
THURSDAY(Orders)	
MA104	P29/P44
E-6	P26P26
HELA	P35/P39
LLCMK2	P37/P38
CRFK	P39/P38
VERO-P	P40/P41
FRIDAY (Orders)	
RD	P240/P245
MDCK	P68/P78
L20B	P29/P33

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
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1600 Clifton Road NE
Building 23 Room 5-164
MS-A03
Atlanta, GA 30333
(404) 639-2258
(404) 639-3129 Fax
jgoldstein1@cdc.gov

From: Glenn, Janet (CDC/OCOO/OCFO)
Sent: Tue, 2 Sep 2014 14:55:29 -0400
To: Warren, Donnell (CDC/OID/NCEZID);Rashid, Faye M. (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Guess-Skinner, Deborah (CDC/OID/NCEZID);Stanford, Cynthia Ann (CDC/OID/NCEZID);Williams, Ernest A. (CDC/OID/NCEZID);Thomas, Alisha (CDC/OID/NCEZID);Scarborough, Robin T. (CDC/OID/NCEZID);Hudson, Arthur (CDC/OID/NCEZID);Jolly, Julian (CDC/OID/NCEZID);Reed, Yvonne (CDC/OID/NCEZID);Stuchlik, Olga (CDC/OID/NCEZID);Banks, Michaela (CDC/OID/NCEZID)
Subject: MACCS Unmatched log

10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56101141001	921Z8YF	GUESS-SKINNER, DEBORAH	BARNES, JACKIE	xxx2866	2651	FISHER(GD0537B)	GD0537B;BEAKER,20ML#1000-20	6/18/2014	2014	302.85
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectiou	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56101141001	921Z8YF	GUESS-SKINNER, DEBORAH	BARNES, JACKIE	xxx2866	2651	FISHER(GD0574B)	GD0574B;BOTTLE ,CARBOY -5 GAL# 14	6/30/2014	20	1,122.80

	s Diseases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921Z8YF	GUESS-SKINNER, DEBORAH	MCCOLLINS, CEDRIC	xxx7350	252Z	BD0814T;Priority One Svc. Inc.	BD0814T,Highcontainment consult	8/27/2014	2014	3,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921Z8YF	GUESS-SKINNER, DEBORAH	MCCOLLINS, CEDRIC	xxx7350	2576	GD0214M;Pipette repairs,Eppendorf Inc.	GD0214M;Pipette repairs,onsite	12/11/2013	2014	203.00

	(CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921Z8YF	GUESS-SKINNER, DEBORAH	MCCOLLINS, CEDRIC	xxx7350	257N	GD0186M;Integra BiosciencesInc.	GD0186M;Prev.maint./media jet	5/23/2014	2014	1,150.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921Z8YF	GUESS-SKINNER, DEBORAH	MCCOLLINS, CEDRIC	xxx7350	2651	GD0395M;Labsource Inc.	GD0395M;Gloves,small/10/cs.	4/10/2014	2014	2,112.50
10/01/	Natl	Divisio	HC	NC	561011	921Z	GUES	MCCOLLI	xxx7	26	GD0438M;Fisher	GD0438M;Steam sterilizatio	5/6/20	20	3,088.

2013-09/30/2014	Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	n of Scientific Resources (CVLH)	VLH	EZID	4101	8YF	S-SKINNER, DEBORAH	NS, CEDRIC	350	51	Inc.	n sh	14	14	00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	MCCOLLINS, CEDRIC	xxx7350	2651	GD0557M;All-Medical Inc.	GD0557M;OR gowns,20/cs.	6/20/2014	2014	4,836.40
10/01/2013-09/30/201	Natl Ctr for Emergin	Division of Scientific	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DE	MCCOLLINS, CEDRIC	xxx7350	2651	GD0597M;Fisher Inc.	GD0597M;PBS,Sod.pot.,1L	7/9/2014	2014	3,554.00

4	g & Zo on oti c Inf ect iou s Dis ea se s (C VL)	Re so urc es (C VL H)					BO RA H								
10/ 01/ 201 3- 09/ 30/ 201 4	Na tl Ctr for Em er gin g & Zo on oti c Inf ect iou s Dis ea se s (C VL)	Div isio n of Sci ent ific Re so urc es (C VL H)	H C V L H	N C E ZI D	561 011 410 1	92 1Z 8Y F	GU ES S- SKI NN ER, DE BO RA H	MCC OLLI NS, CED RIC	xx x7 35 0	2 6 5 1	GD0643 M;Therm ofisher Inc.	GD0643M;Cas ein hydr acid,1lb.	7/2 8/2 014	2 0 1 4	17 1.7 0
10/ 01/ 201 3- 09/ 30/ 201 4	Na tl Ctr for Em er gin g & Zo on oti	Div isio n of Sci ent ific Re so urc es (C	H C V L H	N C E ZI D	561 011 410 1	92 1Z 8Y F	GU ES S- SKI NN ER, DE BO RA H	MCC OLLI NS, CED RIC	xx x7 35 0	2 6 5 1	GD0670 M;Fisher Inc.	GD0670M;Fla sk,6L,4pk./cs.	8/S /20 14	2 0 1 4	12, 27 3.6 0

	c Infectious Diseases (CVL)	VLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2241	Hemostat 9/3 delivery (GD0689S)	GD0689S; S & H	8/15/2014	2014	145.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2241	Life Tech (GD0705S)	GD0705S; S & H	8/26/2014	2014	90.00

	Diseases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	257N	Fisher (GD0686S)	GD0686S; emergency repair	8/15/2014	2014	288.23
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (C	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	257N	Konica Minolta SPSB (GD0286S)	GD0286S; SPSBC754E Maint A 1yr	3/7/2014	2014	1,645.92

	VL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56101141011	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Eppendorf (GD0695S)	GD0695; sevice agreement PM's	8/15/2014	2014	1,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56101141011	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher (GD0697S)	GD0697; lab Supplies gloves	8/15/2014	2014	2,688.00
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921Z8Y	GUESS-	STANFORD,	xxx684	265	Fisher (GD0697S)	GD0697; lab Supplies lab coat	8/15/2014	201	3,921.40

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	F	SKINNER, DEBORAH	CYNTHIA	9	1				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher (GD0706S)	GD0706S; labcoat,disp small	8/29/2014	2014	1,960.70
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBO	STANFORD, CYNTHIA	xxx6849	2651	Fisher (GD0706S)	GD0706S; 1cc syringe 501-400	8/29/2014	2014	409.80

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)					RAH								
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher (GD0706S)	GD0706S; petri dish 351058	8/29/2014	2014	375.48
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher Sci (GD0678S)	GD0678S; Tyvek xxx large	8/12/2014	2014	114.36

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher Sci (GD0697S1)	GD0697S1; 50ML Filter unit	8/25/2014	2014	1,497.92
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher Sci (GD0697S1)	GD0697S1; 3 cc syringe 309657	8/25/2014	2014	768.20

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher/ Reagents (GD0690S)	GD0690S; reagents	8/15/2014	2014	13,221.77
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Forte Bio (GD0694S)	GD0694S : software upgrade	8/15/2014	2014	995.00

	)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Hemostat (GD0689S)	GD0689S; Blood Orders	8/15/2014	2014	5,274.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Hemostat 9/3 delivery (GD0689S)	GD0689S; DHB Horse 100ml	8/15/2014	2014	152.00
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921Z8Y	GUESS-	STANFORD,	xxx684	265	Hemostat 9/3 delivery	GD0689S; DRB Rabbit 100 ml	8/15/2014	201	440.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	F	SKINNER, DEBORAH	CYNTHIA	9	1	(GD0689S)			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Hemostat 9/3 delivery (GD0689S)	GD0689S; DSB Sheep 100 ml	8/15/2014	2014	126.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBO	STANFORD, CYNTHIA	xxx6849	2651	Lab supplies (GD0697S)	GD0697; lab Supplies	8/15/2014	2014	76.19

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)					RAH								
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Labsource / Lab Supplies(GD0698S)	GD0698S; lab supplies	8/15/2014	2014	31.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Life Tech (GD0705S)	GD0705S; DMEM	8/26/2014	2014	1,735.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Next air	cylinders monthly	8/15/2014	2014	204.36
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Pall Forte Bio (GD0634S)	GD0634S; 18-5088 biosensors	8/4/2014	2014	862.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Pall Forte Bio (GD0634S)	GD0634S; 18-5089 biosensors	8/4/2014	2014	2,138.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Pall Forte Bio (GD0639S)	GD0639S; 18-5114 biosensors	8/4/2014	2014	2,973.32

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Stericycle Aug (GD0628S)	GD0628S; aug waste picup	7/22/2014	2014	10,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Stericycle Sept (GD0629S)	GD0629S; sept waste picup	7/22/2014	2014	10,000.00
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921Z8Y	GUESS-	STANFORD,	xxx684	265	Thermo-Fisher (GD0660S	GD0660S; Certified Accumet	7/31/2014	201	1,056.96

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	F	SKINNER, DEBORAH	CYNTHIA	9	1	)			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	WILLIAMS, ERNEST	xxx4371	2241	Staples (GD0656W)	GD0656W; Freight	8/4/2014	2014	12.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBO	WILLIAMS, ERNEST	xxx4371	2651	Staples (GD0656W)	GD0656W; Laser Toner (HP-53X)	8/4/2014	2014	126.84

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)					RAH								
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	WILLIAMS, ERNEST	xxx43711	2652	Getinge (GD0502W)	GD0502W; Acid Detergent	5/30/2014	2014	705.52
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921Z8YF	GUESS-SKINNER, DEBORAH	WILLIAMS, ERNEST	xxx43711	2652	Getinge (GD0502W)	GD0502W; Alkaline Detergent	5/30/2014	2014	603.04

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Priority One Services (BD0814T)	BD0814T; High Containment Cons	8/28/2014	2014	3,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0151T ;ARMSTRONG CRICKET	BD0151T;SHIPPING	9/1/2014	2014	23.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0429T;DANINJECT	BD0429T;SHIPPING	4/4/2014	2014	9.57
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0433T;TECNIPLAST	BD0433T;SHIPPING	4/4/2014	2014	94.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0542T;SYSCO	BD0542T;SHIPPING	5/1/2014	2014	10.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0567T;NORHTER TOOL	BD0567T;SHIPPING	5/30/2014	2014	25.00
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921ZGS	WARREN,	THOMAS,	xxx752	223	BD0572T;CHARLES RIVER	BD0572T;SHIPPING	5/16/2014	201	161.25

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	DONNELL	ALISHA	6	1				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0650T;GSA	BD0650T;SHIPPING	6/18/2014	2014	11.95
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0546T;UGA	BD0546T;DIAG INV. 301261	5/7/2014	2014	704.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0546T;UGA	BD0546T;PATH TESTING 299753	5/7/2014	2014	203.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0630T;CHARLES RIVER	BD0630T;GERBIL PROFILE	5/24/2014	2014	42.97

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0630T;CHARLES RIVER	BD0630T;HAMSTER PROFILE	5/24/2014	2014	43.42
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0630T;CHARLES RIVER	BD0630T;MOUSE ASSESSMENT	5/24/2014	2014	2,249.10

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0809T;ANTECH	BD0809T;BLOOD SAMPLES	8/15/2014	2014	644.26
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0809T;ANTECH	BD0809T;PATHOLOGY BLOOD SAMPLE	8/15/2014	2014	9,000.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0809T;ANTECH	BD0809T;PATHOLOGY BLOOD SAMPLE	8/15/2014	2014	3,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0811;ANTECH	BD0811;PATHOLOGY SAMPLES	8/15/2014	2014	15,000.00
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921ZGS	WARREN,	THOMAS,	xxx752	256	BD0811;ANTECH	BD0811T;PATHOLOGY SAMPLES	8/15/2014	201	1,000.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	DONNELL	ALISHA	6	Q				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	CHARLES RIVER	PATHOLOGY TESTING	6/16/2014	2014	2,919.82
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	259Z	BD0801; MISC	BD0801;MISC	8/7/2014	2014	6,000.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	259Z	BD0808T;MISC	BD0808T;BILLING	8/15/2014	2014	3,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0429T;DANINJECT	BD0429T;FOOT AIR PUMP	4/4/2014	2014	150.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0433T;TECNIPLAST	BD0433T;HEPA FILTER	4/4/2014	2014	1,879.56
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0447T;METRO	BD0447T;METROSEAL 3 WALLSHELVI 14	4/3/2014	20	1,637.50

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0543T;METRO	BD0543T;DEEP LEDGE CARTS	5/1/2014	2014	620.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0567T;NORHTER TOOL	BD0567TRETRACT TIES	5/30/2014	2014	134.70

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0650T;GSA	BD0650T;SAFETY GLASSES	6/18/2014	2014	18.72
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0747T;CHARLES RIVER	BD0748T;STEEL WOOL	7/31/2014	2014	262.50
10/01/201	Natl Ctr	Division	HCV	NCE	5610114	921ZGS	WARREN,	THOMAS,	xxx752	265	BD0747T;CHARLES RIVER	BD0748T;TOTAL MRO	7/31/2014	201	2,280.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	DONNELL	ALISHA	6	1				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0759T;FISHER	BD0759T;ENEMA BAG	7/30/2014	2014	548.28
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0801; MISC	BD0801;MISC. COST	8/7/2014	2014	3,000.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0808T;MISC	BD0808T;BILLING	8/15/2014	2014	9,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2652	BD0753T;PHARMACAL	BD0753T;ALKA DET	7/31/2014	2014	703.80

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2652	BD0753T;PHARMACAL	BD0753T;PHCONTROL	7/31/2014	2014	526.20
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2652	BD0753T;PHARMACAL	BD0753T;PRL-18	7/31/2014	2014	1,473.30

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2652	PHARMACAL	CAGE WASH CHEMICALS	7/2/2014	2014	2,603.77
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0151T;ARMSTRONG CRICKET	BD015T1;MEALWORMS	9/1/2014	2014	375.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0542T;SYSCO	BD0542T;6"TORTILLA	5/1/2014	2014	43.90
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	561011410 1	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0542T;SYSCO	BD0542T;APPLESAUCE	5/1/2014	2014	34.99
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921ZGS	WARREN,	THOMAS,	xxx752	265	BD0542T;SYSCO	BD0542T;APRICOT NECTAR	5/1/2014	201	48.70

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	DONNELL	ALISHA	6	3				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0542T;SYSCO	BD0542T;PNBUTTER	5/1/2014	2014	27.20
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0542T;SYSCO	BD0542T;POPCORN KIT	5/1/2014	2014	28.50

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0542T;SYSCO	BD0542T;RAISIN BREAD	5/1/2014	2014	105.98
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0542T;SYSCO	BD0542T;VANILLA YOGART	5/1/2014	2014	35.98

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0728T;COLLINS BROTHERS	BD0728T;BANANAS	7/23/2014	2014	28.80
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0728T;COLLINS BROTHERS	BD0728T;HONEYDEW MELONS	7/23/2014	2014	23.50

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0728T;COLLINS BROTHERS	BD0728T;LEMONS	7/23/2014	2014	23.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0728T;COLLINS BROTHERS	BD0728T;ORANGES	7/23/2014	2014	210.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0728T;COLLINS BROTHERS	BD0728T;SWEET POTATOES	7/23/2014	2014	24.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0730T;COLLINS BROTHERS	BD0730T;BANANAS	7/23/2014	2014	112.00
10/01/201	Natl Ctr	Division	HCV	NCE	561011410	921ZGS	WARREN,	THOMAS,	xxx752	265	BD0730T;COLLINS BROTH	BD0730T;GRAPES	7/23/2014	201	126.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	DONNELL	ALISHA	6	3	ERS			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	263	BD0730T;COLLINS BROTHERS	BD0730T;PEARS	7/23/2014	2014	139.50
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	263	BD0730T;COLLINS BROTHERS	BD0730T;RED APPLES	7/23/2014	2014	148.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0730T;COLLINS BROTHERS	BD0730T;WATERMELONS	7/23/2014	2014	19.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2655	BD0572T;CHARLES RIVER	BD0572T;CD1	5/16/2014	2014	207.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2655	BD0572T;CHARLES RIVER	BD0572T;GERBIL	5/16/2014	2014	125.10
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610114101	921ZGSV	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2655	BD0572T;CHARLES RIVER	BD0572T;HAMSTER	5/16/2014	2014	88.40

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2231	BD0773T;PHARMACAL	BD0773T;SHIPPING	8/4/2014	2014	215.61
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0042T;UGA	BD0042T;BLOOD SAMPLING	11/8/2013	2014	2,770.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0778T;UGA	BD0778T;PATHOLOGY TESTING	8/4/2014	2014	1,200.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	259Z	BD0801; MISC	BD0801;MISC	8/7/2014	2014	3,000.00
10/01/201	Natl Ctr	Division	HCV	NCE	561041110	939ZDK	WARREN,	THOMAS,	xxx752	265	BD0191T;RITE WEIGHT	BD0191T;MAINTENANCE	12/11/201	201	1,250.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	M	DONNELL	ALISHA	6	1			3	4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0345T;QUIP LAB	BD0345T;ULTRA SWABS	2/5/2014	2014	1,526.40
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0772T;THERMO FISHER	BD0772T;PROGRAM SUPPLIES	8/4/2014	2014	3,000.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0774T;IDEXX	BD0774T;PATHOLOGY	8/4/2014	2014	1,500.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2652	BD0773T;PHARMACAL	BD0773T;PROGRAM CHEMICALS	8/4/2014	2014	2,388.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0799T;COLLINS BROTHERS	BD0799T;COLLINS FEED	8/6/2014	2014	3,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5610411101	939ZDKM	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2655	BD0775T;JACKSON LAB	BD0775T;ANIMAL ORDER	8/4/2014	2014	1,500.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5612112101	939ZFB	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2241	Molecular Devices (GD0703S)	GD0703S; S & H	8/25/2014	2014	158.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5612112101	939ZFB	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher Sci (GD0702S)	GD0702S; shaker flask 125	8/25/2014	2014	96.50

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56121121012	939ZZFB	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher Sci (GD0702S)	GD0702S; shaker flask 250	8/25/2014	2014	54.81
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56121121012	939ZZFB	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Fisher Sci (GD0702S)	GD0702S; shaker flask 500	8/25/2014	2014	88.35
10/01/201	Natl Ctr	Division	HCV	NCE	561211210	939ZZF	GUESS-	STANFORD,	xxx684	265	Harvard Appartus BTX (	GD0704S; Electrofusion chamber	8/26/2014	201	1,133.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	B	SKINNER, DEBORAH	CYNTHIA	9	1	GD0704S)			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5612112101	939ZFB	GUESS-SKINNER, DEBORAH	STANFORD, CYNTHIA	xxx6849	2651	Molecular Devices (GD0703S)	GD0703S; CloneMedia HEK	8/25/2014	2014	448.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A11101	939ZSEP	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	T-MOBILE	BD0023 - LAMRP	11/18/2013	2014	165.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSEW	SVOBODA, PAVEL	BURROUGHS, MARK	xxx1496	2231	DD0132M; KAPA Biosystems	DD0132M; shipping	2/25/2014	2014	50.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZSEW	SVOBODA, PAVEL	BURROUGHS, MARK	xxx1496	2241	DD0207M; Oxford Nanopore	DD0207; shipping	3/25/2014	2014	500.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSEW	SVOBODA, PAVEL	BURROUGHS, MARK	xxx14961	2241	DD0494M; Agencourt Beckman Coulter	DD0494M; shipping	7/29/2014	2014	40.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSEW	SVOBODA, PAVEL	BURROUGHS, MARK	xxx14961	2651	DD0207M; Oxford Nanopore	DD0207; MinIon sequencing sys.	3/25/2014	2014	2,000.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSEW	SVOBODA, PAVEL	BURROUGHS, MARK	xxx1496	2651	DD0494M; Agencourt Beckman Coulter	DD0494M; AmPure XP 60 ml	7/29/2014	2014	2,252.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSEW	SVOBODA, PAVEL	BURROUGHS, MARK	xxx1496	2652	DD0132M; KAPA Biosystems	DD0132M; Hi Fi HS Ready mix 100	2/25/2014	2014	126.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZSLQ	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	AT&T	ED0009-SMB	11/20/2013	2014	100.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZSMK	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	T-MOBILE	GD0067-SPSB	11/18/2013	2014	195.00
10/01/201	Natl Ctr	Division	HCV	NCE	5614A110	939ZSM	RASHID,	HUDSON,	xxx879	23S	AT&T	OD0018-DSA	11/20/201	201	100.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	M	FAYE	ARTHUR	4	3			3	4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMM	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	T-MOBILE	OD0018-DSA	11/18/2013	2014	165.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A11101	939ZSMM	WARREN, DONNELL	JOLLY, JULIAN	xxx1645	266L	Konica Minolta	od0070j; trip fee	3/25/2014	2014	25.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMM	WARREN, DONNELL	JOLLY, JULIAN	xxx1645	266L	Konica Minolta	od0070j; labor	3/25/2014	2014	135.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZSMN	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	AT&T	BD0025-ARB	11/20/2013	2014	100.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	T-MOBILE	BD0024 - ARB	11/18/2013	2014	450.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	JOLLY, JULIAN	xxx1645	2611	MWI	bd0707j; lact ringers 500	7/14/2014	2014	49.60

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZSMN	WARREN, DONNELL	REED, YVONNE	xxx7805	2651	BD0011 - NexAir	BD0011 - Gas Cylinders	10/30/2013	2014	1,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZSMN	WARREN, DONNELL	REED, YVONNE	xxx7805	2651	BD0012 - Lipsey	BD0012- Drinking water	10/30/2013	2014	2,000.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	REED, YVONNE	xxx7805	2659	BD0814T-Priority One Services	BD0814T-HCL Services	8/26/2014	2014	3,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0777T;VRL	BD0777T;PATHOLOGY TESTING	8/4/2014	2014	930.00
10/01/201	Natl Ctr	Division	HCV	NCE	5614A1110	939ZSM	WARREN,	THOMAS,	xxx752	259	BD0801; FOOD AND BEDDI	BD0801;MISC	8/7/2014	201	362.18

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	N	DONNELL	ALISHA	6	Z	NG			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BC0072T;FISHER	BC0072T;DISPOSABLE DRAPE	11/5/2013	2014	103.11
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A1101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BC0072T;FISHER	BC0072T;MNI DRIP	11/5/2013	2014	96.60

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BC0072T;FISHER	BC0072T;SKIN STAPLES	11/5/2013	2014	133.30
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BC0072T;FISHER	BC0072T;SYRING	11/5/2013	2014	65.76

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BC0072T;FISHER	BC0072T;VICRYL SUTURE	11/5/2013	2014	212.12
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0719T;FISHER	BD0719T;IV CATHETER	7/14/2014	2014	182.68

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0781T;FISHER	BD0781T;4 STAT PWR SUPPLY	8/4/2014	2014	217.47
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0781T;FISHER	BD0781T;LARGE TVEK HOOD	8/4/2014	2014	546.25

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0781T;FISHER	BD0781T;TR 330 BATTERY	8/4/2014	2014	164.84
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0802;GRAINGER	BD0802;9V BATTERY	7/30/2014	2014	28.19
10/01/201	Natl Ctr	Division	HCV	NCE	5614A1110	939ZSM	WARREN,	THOMAS,	xxx752	265	BD0802;GRAINGER	BD0802;AA BATTERIES	7/30/2014	201	83.44

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	N	DONNELL	ALISHA	6	1				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0802; GRAINGER	BD0802;AAA BATTERIES	7/30/2014	2014	20.94
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0802; GRAINGER	BD0802;CHANNELLOCK PLIER SET 14	7/30/2014	20	66.42

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0802; GRAINGER	BD0802;SCREWDRIVER SET	7/30/2014	2014	9.76
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2651	BD0802; GRAINGER	BD0802;SLIP PLIER	7/30/2014	2014	36.28

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0206T;SYSCO	BD0206T;APPLE JUICE	1/9/2014	2014	61.98
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0206T;SYSCO	BD0206T;BREAKFAST BAR	1/9/2014	2014	49.98

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0206T;SYSCO	BD0206T;FLOUR TORTILLA	1/9/2014	2014	19.98
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0206T;SYSCO	BD0206T;MARSHMALLOW CREME	1/9/2014	2014	81.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0206T;SYSCO	BD0206T;NABISCO COOKIE	1/9/2014	2014	58.60
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0206T;SYSCO	BD0206T;RAISIN BREAD	1/9/2014	2014	52.99
10/01/201	Natl Ctr	Division	HCV	NCE	5614A110	939ZSM	WARREN,	THOMAS,	xxx752	265	BD0206T;SYSCO	BD0206T;SOUFLEE PAPER CUP	1/9/2014	201	141.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	N	DONNELL	ALISHA	6	3				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	263	BD0206T;SYSCO	BD0206T;VANILLA YOGURT	1/9/2014	2014	53.97
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A1101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	263	BD0206T;SYSCO	BD0206T;WATER DEER PARK	1/9/2014	2014	349.50

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2653	BD0800T;STEWARTS FEED	BD0800T;STEWARTS FEED	8/6/2014	2014	955.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZSMN	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	2655	BD0776T;CHARLES RIVER	BD0776T;ANIMAL ORDERS	8/4/2014	2014	531.61

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKR	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	AT&T	OD0017-OD	11/20/2013	2014	100.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKR	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	T-MOBILE	OD0015 - OD	11/18/2013	2014	300.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZTKV	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	AT&T	DD0025-BCFB	11/20/2013	2014	40.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZTKV	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	23S3	T-MOBILE	DD0025-BCFB	11/18/2013	2014	90.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	2241	DD0432O; BIA Separations	DD0432O; Shipping	7/23/2014	2014	40.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	225Z	DD0432O; BIA Separations	DD0432O; Handling Packing	7/23/2014	2014	130.00
10/01/201	Natl Ctr	Division	HCV	NCE	5614A110	939ZTK	RASHID,	STUCHLIK,	xxx453	257	OD0062O; BioRad	OD0062O; Feb 2015 Maint	3/20/2014	201	262.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	FAYE	OLGA	4	N				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; August 2014 Maint	3/20/2014	2014	262.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; Dec 2014 Maint	3/20/2014	2014	262.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; Jan 2015 Maint	3/20/2014	2014	262.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; July 2014 Maint	3/20/2014	2014	262.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; June 2014 Maint	3/20/2014	2014	262.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; Nov 2014 Maint	3/20/2014	2014	262.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1 1101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; Oct 2014 Maint	3/20/2014	2014	262.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1 1101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	257N	OD0062O; BioRad	OD0062O; Sept 2014 Maint	3/20/2014	2014	262.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	2651	DD0432O; BIA Separations	DD0432O; 20.5113	7/23/2014	2014	265.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	2651	DD0432O; BIA Separations	DD0432O; 20.5114	7/23/2014	2014	265.00
10/01/201	Natl Ctr	Division	HCV	NCE	5614A110	939ZTK	RASHID,	STUCHLIK,	xxx453	265	DD0432O; BIA Separation	DD0432O; 21.6157	7/23/2014	201	265.00

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	FAYE	OLGA	4	1	s			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A1101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx45344	2651	DD0432O; BIA Separations	DD0432O; 222.0850	7/23/2014	2014	655.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A1101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx45344	2651	DD0432O; BIA Separations	DD0432O; 346.0001	7/23/2014	2014	985.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	2651	DD0437O; Fisher	DD0437O; Alpha Matrix	7/23/2014	2014	191.25
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx4534	2651	DD0450O; Invitrogen	DD0450O; Zoom Disks	7/23/2014	2014	250.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx45344	2651	DD0499O; Fisher	DD0499O; Axygen Tubes	7/31/2014	2014	176.48
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	RASHID, FAYE	STUCHLIK, OLGA	xxx45344	2651	DD0499O; Fisher	DD0499O; lab coat	7/31/2014	2014	22.52

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	SVOBODA, PAVEL	BURROUGHS, MARK	xxx1496	2651	DD0320M; Fisher Scientific	DD0320M; microcent tubes 9460	5/20/2014	2014	46.81
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	SVOBODA, PAVEL	REED, MATTHEW	xxx2359	2241	DD0490A; EMD	DD0490A; s&h	7/29/2014	2014	22.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	SVOBODA, PAVEL	REED, MATTHEW	xxx23559	2651	DD0490A; EMD	DD0490A;8.56006.0005 Cys	7/29/2014	2014	341.76
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	SVOBODA, PAVEL	REED, MATTHEW	xxx23559	2651	DD0490A; EMD	DD0490A;8.56107.0005 LL Cys	7/29/2014	2014	341.76
10/01/201	Natl Ctr	Division	HCV	NCE	5614A1110	939ZTK	SVOBOD	SCOTT, ANG	xxx253	259	ISYS EQUIPMENT	DD0440S/ISYS	7/16/2014	201	347.49

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	V	A, PAVEL	ELA	9	O				4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614A11101	939ZTKV	SVOBODA, PAVEL	SULAIMAN, NIKHAT	xxx0188	2651	DD0471N;Nexair	DD0471N;Rental fro August	7/29/2014	2014	400.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5614A11101	939ZTKV	SVOBODA, PAVEL	SULAIMAN, NIKHAT	xxx0188	2651	DD0472N;Nexair	DD0472N;Rental for September	7/29/2014	2014	450.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614C1101	921Z1UA	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	233C	Red Fox Medical	OD0112;Projection 8/15-831/14	8/30/2014	2014	400.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5614C1101	921Z1UA	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	233C	Red Fox Medical	OD0113;Projection 9/1-9/15/14	9/15/2014	2014	400.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614C11101	921Z1UA	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	233C	Red Fox Medical	OD0111;Projection 8/1-8/15/14	8/15/2014	2014	400.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614C11101	921Z1UA	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	233C	Red Fox Medical	OD0114;Projection 9/16-9/30/14	9/30/2014	2014	400.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5614C11101	921Z1UA	RASHID, FAYE	HUDSON, ARTHUR	xxx8794	257N	Konica Minolta	OD0109;Maint. Agreement	8/4/2014	2014	950.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5623221201	921Z2SD	WARREN, DONNELL	THOMAS, ALISHA	xxx75266	256Q	BD0812; ANTECH	BD0812T;PATHOLOGY	8/15/2014	2014	3,000.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	562322 1201	921Z2SD	WARREN, DONNELL	THOMAS, ALISHA	xxx7526	256Q	BD0812; ANTECH	BD0812T;PATHOLOGY SAMPLES	8/15/2014	2014	16,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	562322 1201	921Z6VH	ALSTON, SHIRLEY	MCMILLON, ANTHONY	xxx4878	2241	** World Courier	WC# 2606936 (South Korea)	8/12/2014	2014	1,550.00
10/01/201	Natl Ctr	Division	HCV	NCE	562322 120	939ZSS	GUESS-	WILLIAMS,	xxx437	265	Fisher Scientific (GD0659	GD0659W; Certified Accumet	8/4/2014	201	2,113.92

3-09/30/2014	for Emerging & Zoonotic Infectious Diseases (CVLH)	of Scientific Resources (CVLH)	LH	ZID	1	T	SKINNER, DEBORAH	ERNEST	1	1	W)			4	
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVLH)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5623221201	939ZSSV	ALSTON, SHIRLEY	MCMILLON, ANTHONY	xxx4878	2241	* MARKEN	MARKEN# 605X02xxxxxx (AU)	8/20/2014	2014	2,200.00
10/01/2013-09/30/2014	Natl Ctr for Emerging	Division of Scientific Re	HCVLH	NCEZID	5623221201	939ZSSV	ALSTON, SHIRLEY	MCMILLON, ANTHONY	xxx4878	2241	** QUICK Int'l	Quick#	7/10/2014	2014	1,100.00

	& Zoonotic Infectious Diseases (CVL)	sources (CVLH)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	5623221201	939ZSSV	ALSTON, SHIRLEY	MCMILLON, ANTHONY	xxx4878	2241	** MARKEN	MARKEN# 605X02xxxxxx (Pk-AU)	6/1/2014	2014	1,275.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic	Division of Scientific Resources (CVL	HCVLH	NCEZID	5623221201	939ZSSV	ALSTON, SHIRLEY	MCMILLON, ANTHONY	xxx4878	2241	Quick Int'l	Quick#	7/10/2014	2014	1,175.00

	Infectious Diseases (CVL)	H)													
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	566471101	93900SV	GUESS-SKINNER, DEBORAH	BANKS, MICHAELA	xxx7913	2618	Emory University	Blood Supply- August Est.Cost	7/10/2014	2014	15,000.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Dis	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	566471101	93900SV	GUESS-SKINNER, DEBORAH	BANKS, MICHAELA	xxx7913	2618	Emory University	Blood Supply- Sept Est.Cost	7/10/2014	2014	15,000.00

	eases (CVL)														
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56647111011	93900SV	GUESS-SKINNER, DEBORAH	BANKS, MICHAELA	xxx7913	2618	Emory University	Estimate cost	7/10/2014	2014	10,920.63
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	56647111011	93900SV	GUESS-SKINNER, DEBORAH	BANKS, MICHAELA	xxx7913	2618	Emory University (CF-15000)	Blood Supply-Sept Est.Cost	7/10/2014	2014	300.00

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10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	566471101	93900SV	GUESS-SKINNER, DEBORAH	BANKS, MICHAELA	xxx7913	2618	Emory University (CF-25920.63)	Blood Supply- August Est.Cost	7/10/2014	2014	300.00
10/01/2013-09/30/2014	Natl Ctr for Emerging & Zoonotic Infectious Diseases (CVL)	Division of Scientific Resources (CVLH)	HCVLH	NCEZID	566471101	93900SV	GUESS-SKINNER, DEBORAH	BANKS, MICHAELA	xxx7913	2618	Emory University (CF-25920.63)	Estimate cost	7/10/2014	2014	218.41

From: Liu, Merry (CDC/OID/NCEZID)
Sent: Tue, 6 Dec 2011 08:50:00 -0500
To: Lin, Seh-ching (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Smith, Marvin L. (CDC/OID/NCEZID);McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Taylor, Curtis (CDC/OID/NCEZID);Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Liu, Merry (CDC/OID/NCEZID)
Subject: Marvin is on leave today

Good morning all,

(b)(6)

Kiosy, please help to process HEK-293 cell line.
Angel is coming in late this morning.

Thanks,

Merry

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Fri, 1 Jul 2011 17:36:34 +0000
To: Liu, Merry (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID)
Subject: My Work for Tuesday July 5

HEK-293 10460B 2 T-162 Flask are in the incubator. Set stocks at 1x10^5

RD 10470 2 Roller bottles in the incubator Passage # 236 New Stocks have been set so after you fill the order discard the remaining balance.

L20B 10470 6 Roller bottles in the incubator Passage # 23T New Stocks have been set so after you fill the order discard the remaining balance.

6-L20B and 6-RD (T-25 flasks) are in the incubator by Angel's hood to be shipped on Tuesday for Naomi

Marvin L. Smith B.S., MPH, DHeD
404-639-2418
Email: aqy6@cdc.gov
Biologics Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 6th Floor Cubicle 137
MS-D34
Atlanta, GA 30329

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Tue, 15 Nov 2011 20:06:07 +0000
To: Liu, Merry (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID)
Subject: My work while I am out on Leave...

I will be out of the office on leave from Nov 17, 2011 until Nov 28, 2011. My cell culture production schedule will be as follow:

November 17, 2011
CRFK I will split this cell line on Wednesday before I leave.

November 18, 2011
No production on this day.

November 21, 2011
RD
Media 10470 200 ml @ 5x10^5 Dybdahl-Sissoko
L20B
Media 10470 500 ml @ 5x10^5 Dybdahl-Sissoko

November 22, 2011
HEK
Media 10460B 200 ml @ 5x10^5 Campagnoli. I am not sure if he is going to place more orders if not please split the stock for the following weeks production.

November 23, 2011
E-6
Media 11780B
200ml @ 3x10^5 Rollin
15 T-25 @ 2x10^5 Sriram
Please Split the CRFK Cell line for production the week of December 2, 2011. Set 2 850 Roller bottles for production.

November 24, 2011
~HAPPY THANKSGIVING~!

November 25, 2011
No Production! Yea!

Marvin L. Smith B.S., MPH, DHeD
404-639-2418

Email: aqy6@cdc.gov
Biologics Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 6th Floor Cubicle 137
MS-D34
Atlanta, GA 30329

From: bios@cdc.gov
Sent: Wed, 20 Apr 2016 16:07:58 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: Order # 138896, for Product # HEK Modified

Modified Order 138896 placed by Moon , Jonathan L for Moon , Jonathan L has been received by BIOS. The following modifications were made to the order:

Cell Concentration: 0.0
Special Instructions: Release on Tuesday for Galloway, 4/26; use appropriate fill volume.

You can check the status of the order at any time at http://srpapps.cdc.gov/SRPLogin

Thank You,
Scientific Products and Support Branch

Division of Scientific Resources, NCEZID

From: bios@cdc.gov
Sent: Wed, 20 Apr 2016 14:13:41 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: Order 138896 for Product HEK received
Attachments: Order.html

Order 138896 placed by Moon , Jonathan L for Moon , Jonathan L has been received by BIOS. You can check the status of the order at any time at http://srpapps.cdc.gov/SRPLogin

Thank you,

Biologics Branch
Scientific Resources Program

Your BIOS order has been received.

Please note that products may be released prior to minimum turnaround time.

Order:		**Status:**	Submitted
Can:	(b)(6)	**Date Needed:**	05/05/2016
Date Submitted:	04/20/2016	**Date Completed:**	
Ordered by IKI5		**for Customer** IKI5	
Moon , Jonathan L 404-639-1759 NCEZID /DSR /SPSB /Scientific Products and Support Branch		Moon , Jonathan L 404-639-1759 NCEZID /DSR /SPSB /Scientific Products and Support Branch	
Destination:		Clifton Road/23/5-135/5TH FLOOR	
Order Instructions:		null	

Product:	HEK, Human, Kidney---PRODUCED TUES---	**Product ID:**	HEK
Container:	Flask, TC, T25, Non-vented Cap		
Closure:	Default Closure	**Insert:**	None
Fill volume:	10.0ml		
Number of containers:	4	**Category:**	Cell Lines

Product instructions :	Release on Tuesday, 4/26; use appropriate fill volume.

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Thu, 29 Sep 2011 18:58:13 +0000
To: Sweat, Stacey (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Partin, James (CDC/OID/NCEZID)
Subject: RD, L20B and HEK

Stacy please do not forget to do the RD and L20B on Monday October 3, 2011 and the HEK cell on October 4, 2011. If you need me for any reason call me at (b)(6) I will call you on Tuesday about the E-6. If I need to I can come in early and culture them. Dr. Dasch cancelled his order. Thursday I have the CRFK If I need to I can come in culture them, also I have Angel BSC-40 on Friday and I can come in and culture them also. Kiosy, James I am not sure if you know but I have a training class next week Oct 3-7 2011. If anyone need me for anything call me on my cell

Thanks,

Marvin L. Smith B.S., MPH, DHeD
404-639-2418
Email: aqy6@cdc.gov
Biologics Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 6th Floor Cubicle 137
MS-D34
Atlanta, GA 30329

From: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID)
Sent: Thu, 7 Jul 2016 15:03:15 -0400
To: Lin, Seh-ching (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID);Realegeno, Susan (CDC/OID/NCEZID) (CTR)
Cc: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: BSC40 cell line

Thanks, appreciate your help.

Sathesh

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Thursday, July 07, 2016 3:01 PM
To: Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>
Cc: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID) <xdv3@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: BSC40 cell line

Stacey,
Please seed one more T150 flask tomorrow.

Thanks,

Kiosy

From: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID)
Sent: Thursday, July 07, 2016 2:45 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: RE: HEK cell line

Hi Kiosy,

May I get one T150 BSC40 flask tomorrow if you can spare ?

Thanks,
Sathesh

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Monday, March 28, 2016 4:22 PM
To: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID) <xdv3@cdc.gov>
Cc: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK cell line

Your cells are ready for pick-up.
Sorry for the delay.

Kiosy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 17 Feb 2016 11:45:11 -0500
To: CDC OID NCEZID DSR SPSB BIOS Production
Cc: Goldstein, Jason (CDC/OID/NCEZID);Petway, David (CDC/OID/NCEZID);Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);CDC NCEZID DSR Quality Assurance
Subject: RE: CC schedule for the week of 02-16-2016 to 02-19-2016

All,

Since Kiosy is not here, as we discussed, I would like Stacey to take the HLF cells and Xiaoling to take the HEK and 293T lines.

Thank you,

Jonathan

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Friday, February 12, 2016 11:57 AM
To: CDC OID NCEZID DSR SPSB BIOS Production <OIDNCEZIDDSRSPSBBIOSProduction@cdc.gov>
Cc: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>; Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; CDC NCEZID DSR Quality Assurance <NCPDCIDDSRQualityAssurance@cdc.gov>
Subject: FW: CC schedule for the week of 02-16-2016 to 02-19-2016

All,

Attached please see the cell culture schedule for next week. Tuesday will be very busy due to the Monday holiday; please let me know if you have any questions or concerns.

Thank you,

Jonathan

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 28 Oct 2015 19:25:29 +0000
To: Roth, Emily (CDC/OID/NCEZID) (CTR)
Subject: RE: Cell Lines from the last two years

Nor have I. I will re-request.

From: Roth, Emily (CDC/OID/NCEZID) (CTR)
Sent: Wednesday, October 28, 2015 3:07 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Cell Lines from the last two years

Have you received any feedback or information regarding the additional cell lines? I haven't seen anything in my email.

Thanks,
Emily

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Thursday, October 22, 2015 12:20 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Pitts, Richard L. (CDC/OID/NCEZID) <iid5@cdc.gov>; Roth, Emily (CDC/OID/NCEZID) (CTR) <xcl4@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>
Subject: RE: Cell Lines from the last two years

All,

(b)(5)

Also, how are we coming with filling in the chart with the additional cell lines?

Thanks,

Jonathan

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Friday, October 16, 2015 4:13 PM
To: Pitts, Richard L. (CDC/OID/NCEZID) <iid5@cdc.gov>; Roth, Emily (CDC/OID/NCEZID) (CTR) <xcl4@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>
Subject: RE: Cell Lines from the last two years

(b)(5)

Kiosy

From: Pitts, Richard L. (CDC/OID/NCEZID)
Sent: Friday, October 16, 2015 10:51 AM
To: Roth, Emily (CDC/OID/NCEZID) (CTR) <xcl4@cdc.gov>; Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>
Subject: RE: Cell Lines from the last two years

Hey all,

It is my opinion (b)(5)

(b)(5)

Thanks

Lee

Lee Pitts, M.S.
SPSB Quality Assurance Manager
Office of the Director / Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention (CDC) Roybal Campus
1600 Clifton Road
Building 23/ Office 5-134
(MS A03)
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Lab: (404) 639-2820
Email: Rpitts@cdc.gov

http://intranet.cdc.gov/ncezid/dsr
http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

---

From: Roth, Emily (CDC/OID/NCEZID) (CTR)
Sent: Friday, October 16, 2015 10:32 AM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>
Cc: Pitts, Richard L. (CDC/OID/NCEZID) <iid5@cdc.gov>
Subject: RE: Cell Lines from the last two years

Good Morning,

Here is a list of the remaining cell lines. Since the highlighted cell lines are produced on a regular basis I think the information should be entered into Table 1. Please let me know which cell lines should be entered into the "Suspension Cell Lines" table (Table 2). All other cell lines listed below will be placed in a separate table. We can enter any information that you think would be beneficial (even if it is just media type).

Cell Line	Container	Media Type	*Incubator Conditions (37°C unless otherwise specified)	Passage Limit	Dispense Conc. (cells/mL)	Suspension?
HEK293						
MCCOY						
BGM						
MRC-5						
HS-3						
HS68						
OMK						
HEK293R/17						
RK13						
HEP2						
FS9						
DET562						
HEPG						
CACO						
FRHK						
HUV						

(b)(5)

(b)(5) Please let me know your thoughts.

(b)(5)

Thank you for your help.

Thanks,
Emily

Emily Roth
Quality Assurance Specialist
IHRC Inc.
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Office of Infectious Diseases
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 Room 5-115
MS-A03
Atlanta, GA 30333
(404) 639-2121
ERoth@cdc.gov
http://intranet.cdc.gov/ncezid/dsr
http://www.cdc.gov/ncezid/dsr

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---

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Friday, October 09, 2015 9:09 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>
Cc: Roth, Emily (CDC/OID/NCEZID) (CTR) <xcl4@cdc.gov>
Subject: RE: Cell Lines from the last two years

The highlighted cell lines are rarely ordered and can be excluded.

Kiosy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Friday, October 09, 2015 8:22 AM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>
Cc: Roth, Emily (CDC/OID/NCEZID) (CTR) <xcl4@cdc.gov>
Subject: Cell Lines from the last two years

All,

Below are the cell lines we have produced in the last two years. Which of these need to go into the SOP?

Thanks,

Jonathan

SRP INVENTORY ITEM CATNO
MDCK
MAME
L20B
RD
E-6
VERO-P
HLF
HEK
BSC4
A549
HELA
HEPC
MDCKL
SF9
LLCM
MCOY
BGM
HHEL
MRC-5
CRFK

HS-3
VERO
OMK
293T
HT10
RK13
MDCK-S
NCTC
SP20
HEP2
FS9
CDCHME
BK21
13 S
RAW
Det562
SL29
HELS
HEPG
CCDR
CACO
FRHK
K562
HUV
MH-S
HCT8
SKN

Jonathan L. Moon, PhD
Team Lead, Specialized Media and Reagents
Mail Stop A-03
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Atlanta, GA 30333

Office: (404)-639-1759

http://intranet.cdc.gov/ncezid/dsr

http://www.cdc.gov/ncezid/dsr

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From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tue, 29 Mar 2016 20:13:57 +0000
To: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: RE: could you give me a call regarding HEK?

Yes – anotyher customer wants to start ordering them.

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tuesday, March 29, 2016 2:19 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: could you give me a call regarding HEK?

Jonathan,

The HEK cells were released! Other than giving the cell line to customer Panayampalli, is there any other use for HEK?
Thanks,

Kiosy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Thursday, March 24, 2016 1:04 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: could you give me a call regarding HEK?

Jonathan L. Moon, PhD
Team Lead, Specialized Media and Reagents
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http://www.cdc.gov/ncezid/dsr

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From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tue, 2 Feb 2016 21:42:26 +0000
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: Currently Active BIOS Cell Line Schedule

Yes, we should be able to get this done.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 2, 2016 4:09 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Yes, the HELA cells would be ready Thursday.
I will check on the A549 & get back to you.

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 4:05 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

I will cancel my order for HLF-a now.

Before I request the new order one question, will the Hela cells be ready Thursday for pick up? And if I only need 3 vials of the A549 at 8 x 10^5 cells can that be ready on Thursday as well?

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 3:50 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

We should be able to get the A549 tubes (12) for Friday. Please cancel your order of HL F and place an order for A549. Please fill out another copy of the Early Production Request and return it when you have a moment.
Thank you,
Jonathan

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 3:19 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

If I request less vials (about 6 vials with 8 x 10^5 cells per) of the A549 will it ready by Friday or Monday? My experiments are time dependent from the date of the patient sample collection so I'm just trying to figure out the best way to adjust without prolonging the experiment start time.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 3:05 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Can you wait until next Tuesday for the A549 cells? I am checking to see whether we can meet your quantity needs.

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 2:41 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Johnathan,

I can use the A549 in place of the HLF-a. Let me know if I need to modify the form and resubmit.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 2:26 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: Currently Active BIOS Cell Line Schedule

Day	**CELL LINE**
Monday	E-6
Monday	MDCK
Monday	HELA
Monday	MDCK-S
Monday	L20B
Monday	RD
Tuesday	A549
Tuesday	A549

Tuesday	Sf9
Tuesday	McCOY
Tuesday	HEP2
Tuesday	HEP2C
Wednesday	HLF
Wednesday	HEK
Wednesday	293T
Wednesday	MDCK-S
Wednesday	MDCK-S
Thursday	HELA
Thursday	MAME
Thursday	VERO-P
Thursday	E-6
Friday	L20B
Friday	RD
Friday	MDCK
Friday	HLF
Friday	BSC40

Jonathan L. Moon, PhD
Team Lead, Reagent, Cell Line, and Media Team (proposed)
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Office: (404)-639-17S9

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http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tue, 2 Feb 2016 21:41:00 +0000
To: Tang, Xiaoling (CDC/OID/NCEZID)
Subject: RE: Currently Active BIOS Cell Line Schedule

Fantastic!

From: Tang, Xiaoling (CDC/OID/NCEZID)
Sent: Tuesday, February 2, 2016 4:15 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Since I will have the DNA sequencing training on Thursday, I might be able to work on A549 during the lunch break. So the customer may expect to receive 3 vials of A549 in the early afternoon that day.

Thanks,
Xiaoling

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 4:07 PM
To: Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Subject: FW: Currently Active BIOS Cell Line Schedule

Xiaoling,
Do you think this would be possible?

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 4:05 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

I will cancel my order for HLF-a now.

Before I request the new order one question, will the Hela cells be ready Thursday for pick up? And if I only need 3 vials of the A549 at 8 x 10^5 cells can that be ready on Thursday as well?

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 3:50 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

We should be able to get the A549 tubes (12) for Friday. Please cancel your order of HL F and place an order for A549. Please fill out another copy of the Early Production Request and return it when you have a moment.
Thank you,
Jonathan

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 3:19 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

If I request less vials (about 6 vials with 8 x 10^5 cells per) of the A549 will it ready by Friday or Monday? My experiments are time dependent from the date of the patient sample collection so I'm just trying to figure out the best way to adjust without prolonging the experiment start time.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 3:05 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Can you wait until next Tuesday for the A549 cells? I am checking to see whether we can meet your quantity needs.

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 2:41 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Johnathan,

I can use the A549 in place of the HLF-a. Let me know if I need to modify the form and resubmit.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 2:26 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: Currently Active BIOS Cell Line Schedule

Day	**CELL LINE**
Monday	E-6
Monday	MDCK

Monday	HELA
Monday	MDCK-S
Monday	L20B
Monday	RD
Tuesday	A549
Tuesday	A549
Tuesday	Sf9
Tuesday	McCOY
Tuesday	HEP2
Tuesday	HEP2C
Wednesday	HLF
Wednesday	HEK
Wednesday	293T
Wednesday	MDCK-S
Wednesday	MDCK-S
Thursday	HELA
Thursday	MAME
Thursday	VERO-P
Thursday	E-6
Friday	L20B
Friday	RD
Friday	MDCK
Friday	HLF
Friday	BSC40

Jonathan L. Moon, PhD
Team Lead, Reagent, Cell Line, and Media Team (proposed)
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National Center for Emerging and Zoonotic Infectious Diseases

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Atlanta, GA 30333

Office: (404)-639-1759

http://intranet.cdc.gov/ncezid/dsr
http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Wed, 3 Feb 2016 14:21:01 -0500
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: Currently Active BIOS Cell Line Schedule
Attachments: Early Production Request Form -A549.docx, Early Production Request Form - HeLa.docx

Yes, 2/9/2016. I've updated and attached the form to reflect that. Thanks for the notice.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 2:19 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Thank you – for clarification, these both say 2/8 (Monday); I assume you mean 2/9?

Thanks,

Jonathan

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Wednesday, February 3, 2016 2:18 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Ok, I submitted the orders online for Tuesday yesterday. You can find the early request forms attached for that order.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 1:56 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Good Afternoon,

I'm glad this will work for you. Please submit orders and early production requests for next Tuesday as well.

Thank you,

Jonathan

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 4:52 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Johnathan,

This is great. I will leave the HeLa order as is and will submit for the A549 now. I will have to order a second batch with the same amount of both for next week Tuesday (that I will submit separately today as well).

My study will require these cells on a weekly or biweekly basis. So I will determine my experiment schedule and submit all future orders this week so that adequate time is given after submission.

Thanks for the help!

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 4:44 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Yes, we should be able to get both done.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 2, 2016 4:09 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Yes, the HELA cells would be ready Thursday.
I will check on the A549 & get back to you.

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 4:05 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
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I will cancel my order for HLF-a now.

Before I request the new order one question, will the Hela cells be ready Thursday for pick up? And if I only need 3 vials of the A549 at 8 x 10^5 cells can that be ready on Thursday as well?

S. Theodore

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We should be able to get the A549 tubes (12) for Friday. Please cancel your order of HL F and place an order for A549. Please fill out another copy of the Early Production Request and return it when you have a moment.
Thank you,
Jonathan

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 3:19 PM
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If I request less vials (about 6 vials with 8 x 10^5 cells per) of the A549 will it ready by Friday or Monday? My experiments are time dependent from the date of the patient sample collection so I'm just trying to figure out the best way to adjust without prolonging the experiment start time.

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Johnathan,

I can use the A549 in place of the HLF-a. Let me know if I need to modify the form and resubmit.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 2:26 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: Currently Active BIOS Cell Line Schedule

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Wednesday	HEK
Wednesday	293T
Wednesday	MDCK-S
Wednesday	MDCK-S
Thursday	HELA
Thursday	MAME
Thursday	VERO-P
Thursday	E-6
Friday	L20B
Friday	RD
Friday	MDCK
Friday	HLF
Friday	BSC40

Jonathan L. Moon, PhD

Team Lead, Reagent, Cell Line, and Media Team (proposed)
Mail Stop A-03
Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases
1600 Clifton Road
Centers for Disease Control and Prevention
Atlanta, GA 30333

Office: (404)-639-1759

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For Laboratorian Use Only	
Order No.	
Lot No.	
Completed Date	
Initials	

Early Production Request

(for requested deliveries of less than 14 business days)

Submitted By	Shaniece Theodore	**Organization**	CVDB
Phone	718-4549	**CAN**	(b)(6)
Product Name	A549		
Order Number	(b)(6)		
Date Submitted	2/2/2016		
Delivery Date Requested*	2/9/2016		

*Please specify your preferred production time (24 hours up to 13 days). If submitting multiple production requests, please prioritize these in order of urgency for appropriate delivery. For production times less than 24 hours, please contact Dr. Jonathan Moon (404-639-1759) for immediate assistance.

Reason(s) for early production request:

(b)(5)

Special production instructions:

NA

For Laboratorian Use Only	
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Early Production Request

(for requested deliveries of less than 14 business days)

Submitted By	Shaniece Theodore	**Organization**	CVDB
Phone	718-4549	**CAN**	(b)(6)
Product Name	HELA		
Order Number	(b)(6)		
Date Submitted	2/2/2016		
Delivery Date Requested*	2/9/2016		

*Please specify your preferred production time (24 hours up to 13 days). If submitting multiple production requests, please prioritize these in order of urgency for appropriate delivery. For production times less than 24 hours, please contact Dr. Jonathan Moon (404-639-1759) for immediate assistance.

Reason(s) for early production request:

(b)(5)

Special production instructions:

NA

From: Tang, Xiaoling (CDC/OID/NCEZID)
Sent: Tue, 2 Feb 2016 16:09:17 -0500
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: Currently Active BIOS Cell Line Schedule

Yes, I think we can make it for this customer.

Xiaoling

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 4:07 PM
To: Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Subject: FW: Currently Active BIOS Cell Line Schedule

Xiaoling,
Do you think this would be possible?

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 4:05 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
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From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Wed, 3 Feb 2016 14:18:01 -0500
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: Currently Active BIOS Cell Line Schedule
Attachments: Early Production Request Form -A549.docx, Early Production Request Form - HeLa.docx

Ok, I submitted the orders online for Tuesday yesterday. You can find the early request forms attached for that order.

S. Theodore

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 1:56 PM
To: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR) <ymi6@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Good Afternoon,

I'm glad this will work for you. Please submit orders and early production requests for next Tuesday as well.

Thank you,

Jonathan

From: Theodore, Shaniece C. (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, February 2, 2016 4:52 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Currently Active BIOS Cell Line Schedule

Johnathan,

This is great. I will leave the HeLa order as is and will submit for the A549 now. I will have to order a second batch with the same amount of both for next week Tuesday (that I will submit separately today as well).

My study will require these cells on a weekly or biweekly basis. So I will determine my experiment schedule and submit all future orders this week so that adequate time is given after submission.

Thanks for the help!

S. Theodore

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Lot No.	
Completed Date	
Initials	

Early Production Request

(for requested deliveries of less than 14 business days)

Submitted By	Shaniece Theodore	**Organization**	CVDB
Phone	718-4549	**CAN**	(b)(6)
Product Name	A549		
Order Number	(b)(6)		
Date Submitted	2/2/2016		
Delivery Date Requested*	2/8/2016		

*Please specify your preferred production time (24 hours up to 13 days). If submitting multiple production requests, please prioritize these in order of urgency for appropriate delivery. For production times less than 24 hours, please contact Dr. Jonathan Moon (404-639-1759) for immediate assistance.

Reason(s) for early production request:

(b)(5)

Special production instructions:

NA

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Initials	

Early Production Request

(for requested deliveries of less than 14 business days)

Submitted By	Shaniece Theodore	**Organization**	CVDB
Phone	718-4549	**CAN**	(b)(5)
Product Name	HELA		
Order Number	(b)(5)		
Date Submitted	2/2/2016		
Delivery Date Requested*	2/8/2016		

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Reason(s) for early production request:

(b)(5)

Special production instructions:

NA

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Thu, 21 Jan 2016 12:35:52 -0500
To: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID)
Cc: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: HEK and 293T/17

Please pick up your cells located at B23, 6-435LER.

Kiosy

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tuesday, January 19, 2016 11:50 AM
To: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID) <xdv3@cdc.gov>
Cc: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK and 293T/17

You will only have 293T/17 cell line ready for pickup today. The HEK cell line will need to take a few more days to grow up.

Kiosy

From: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID)
Sent: Tue, 19 Jan 2016 11:50:24 -0500
To: Lin, Seh-ching (CDC/OID/NCEZID)
Cc: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: HEK and 293T/17

Sure, no problem.

Thanks

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tuesday, January 19, 2016 11:50 AM
To: Panayampalli, Subbian Satheshkumar (CDC/OID/NCEZID) <xdv3@cdc.gov>
Cc: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK and 293T/17

You will only have 293T/17 cell line ready for pickup today. The HEK cell line will need to take a few more days to grow up.

Kiosy

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Tue, 6 Sep 2011 18:12:01 +0000
To: Campagnoli, Ray (CDC/OID/NCIRD)
Subject: RE: HEK Cells

Thanks Ray.

From: Campagnoli, Ray (CDC/OID/NCIRD)
Sent: Tuesday, September 06, 2011 2:12 PM
To: Smith, Marvin L. (CDC/OID/NCEZID)
Subject: RE: HEK Cells

Tomorrow is fine.

Ray

From: Smith, Marvin L. (CDC/OID/NCEZID)
Sent: Tuesday, September 06, 2011 2:01 PM
To: Campagnoli, Ray (CDC/OID/NCIRD); Liu, Merry (CDC/OID/NCEZID)
Subject: HEK Cells

Ray, I forgot to culture the HEK cell today. I was thinking today was Monday and today is Tuesday. I can culture the cell for you on tomorrow morning if that is ok. I am so sorry for the mix up.

Marvin L. Smith B.S., MPH, DHeD
404-639-2418
Email: aqy6@cdc.gov
Biologics Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 6th Floor Cubicle 137
MS-D34
Atlanta, GA 30329

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Thu, 28 Apr 2016 14:58:25 +0000
To: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: RE: HEK cells

Odd. I let her know they were ready and she replied to the email.

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Thursday, April 28, 2016 10:58 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK cells

Jonathan,

Galloway's cells haven't been picked up.
Thanks,

Kiosy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 20 Apr 2016 17:22:40 +0000
To: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: RE: HEK293

Which customer? Rene?

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 1:21 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: HEK293

First one.
But I gave the customer the second one yesterday.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 1:19 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: RE: HEK293

Which one is the standard HEK-293?

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 1:18 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: HEK293

Both.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 1:17 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: RE: HEK293

Which ones do we have in culture? The HEK?

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 10:19 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: HEK293

The request in BIOS is asking for the 2nd one. Just want to make sure if she needs 293T instead of HEK?

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 10:09 AM

To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: HEK293

These are the only 2 lines we have in stock.

Product ID	Description	Select
HEK	HEK, Human, Kidney---PRODUCED TUES---	
293T	HEK293T/17---PRODUCED TUES---	

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 7:56 AM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: FW: HEK293

Kiosy,

What's the product number for the HEK's we have in production?

Thanks,

Jonathan

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 7:52 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK293

Hi Jonathan,

I will be using the HEK cells for a bit longer, maybe a month or 2. I would like to request 4 T-25 flasks whenever they are ready (no rush). I'll place the order thru BIOS.

Thanks!!!

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 20 Apr 2016 18:14:19 +0000
To: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: RE: HEK293

Ok – it's order 138896

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 2:12 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: HEK293

$5x10^5$/ml

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 2:07 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: RE: HEK293

Ok – order will be in my name
What did she order this week? 4 x t25 at what concentration and fill?

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 2:06 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: HEK293

OK.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 2:02 PM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: RE: HEK293

Just talked to the customer. She wants regular HEK293. Can we have them ready for enxt Tuesday?

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Wednesday, April 20, 2016 1:21 PM
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Subject: RE: HEK293

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From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 7:52 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK293

Hi Jonathan,

I will be using the HEK cells for a bit longer, maybe a month or 2. I would like to request 4 T-25 flasks whenever they are ready (no rush). I'll place the order thru BIOS.

Thanks!!!

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tue, 19 Apr 2016 09:47:55 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: HEK293

I can seed the cells today if she wants.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 7:56 AM
To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: FW: HEK293

Kiosy,

What's the product number for the HEK's we have in production?

Thanks,

Jonathan

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 7:52 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK293

Hi Jonathan,

I will be using the HEK cells for a bit longer, maybe a month or 2. I would like to request 4 T-25 flasks whenever they are ready (no rush). I'll place the order thru BIOS.

Thanks!!!

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 20 Apr 2016 17:31:23 +0000
To: Galloway, Renee (CDC/OID/NCEZID)
Subject: RE: HEK293

Could you give me a call when you have a moment? I think there is some confusion as to which cells we provided.

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Tuesday, April 19, 2016 7:52 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: HEK293

Hi Jonathan,

I will be using the HEK cells for a bit longer, maybe a month or 2. I would like to request 4 T-25 flasks whenever they are ready (no rush). I'll place the order thru BIOS.

Thanks!!!

From: Tang, Xiaoling (CDC/OID/NCEZID)
Sent: Fri, 21 Jun 2013 10:46:39 -0400
To: Goldstein, Jason (CDC/OID/NCEZID);CDC NCEZID DSR Quality Assurance;Ansari, Uzma (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID);Lyons, Amanda K. (CDC/OID/NCEZID);Pitts, Richard L. (CDC/OID/NCEZID);Sweat, Stacey (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Taylor, Curtis (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Guess-Skinner, Deborah (CDC/OID/NCEZID)
Subject: RE: ICD Cell Production Schedule

The HLF will be passage 13 for the production next Wednesday.

Thanks,

Xiaoling

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Friday, June 21, 2013 10:34 AM
To: CDC NCEZID DSR Quality Assurance ; Ansari, Uzma (CDC/OID/NCEZID); Lin, Seh-ching (CDC/OID/NCEZID); Lyons, Amanda K. (CDC/OID/NCEZID); Pitts, Richard L. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID); Taylor, Curtis (CDC/OID/NCEZID); Moon, Jonathan L. (CDC/OID/NCEZID); Guess-Skinner, Deborah (CDC/OID/NCEZID)
Subject: ICD Cell Production Schedule

Attached is schedule for week of 6/24-6/27/2013.

Please send necessary corrections to QA and me if your lines have incorrect passage limits,

The outstanding SOPs include VeroP and HEK-293. QA please correct if necessary?

The HLF line is listed as reaching passage limit.

MDCK-L production is 2x a week until end of July.

Please provide current passage info for MDCK-L and Vero-P.

Leave: Uzma (Mon)

Our next meeting will be Tues 6/25.

Thanks for all your hard work,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
1600 Clifton Road NE
Building 23 Room 5-164
MS-A03
Atlanta, GA 30333
(404) 639-2258
(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thu, 23 Mar 2017 12:08:21 -0400
To: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Subject: RE: IDD Website descriptions

Leslie,
These will work:

1) Antibody Characterization, Engineering and Modification

(b)(5)

2) Hybridoma & Monoclonal Antibody Production

(b)(5)

3) Protein Expression and Analysis

(b)(5)

4) Immunological and Serological Assay Development

(b)(5)

Thanks,
Jason

1) Antibody Characterization, Engineering and Modification

(b)(5)

2) Hybridoma & Monoclonal Antibody Production

Jason, can we simply say (b)(5)

(b)(5)

3) Protein Expression and Analysis

Jason, please shorten. Can we delete or change what is in red and add what is in green? Make edits as you see fit. I am just guessing here – I may very well have this worded incorrectly.

(b)(5)

4) Immunological and Serological Assay Development

Jason, please describe what service we are offering. Could we say: (b)(5)

(b)(5)

(b)(5)

Jason M. Goldstein, Ph.D.
Team Leader
Immuno-Diagnostic Development (IDD) Team
Reagent and Diagnostic Services Branch (RDSB)
Division of Scientific Resources (DSR)
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
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MS-A03
Atlanta, GA 30333
(404) 639-2258
(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Sent: Monday, March 20, 2017 10:51 AM
To: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>
Subject: IDD Website descriptions

Jason,

For our products and services pages I need very simple descriptions of your services for our customers. We will leave the original descriptions on your team page, but we need to get right to the point and tell customers what we are offering them.

Would you please condense the descriptions from your team page (included below). We also need these written in very simple terms, i.e. saying things in everyday language. Below are two examples of shortened descriptions. I put your four descriptions below these. Please shorten and get back to me. Thank you.

SHORT EXAMPLES:
1) Bacterial and Viral Production (BSL-2/BSL-3)

(b)(5)

2) Cell Lines

(b)(5)

JASON PRODUCTS AND SERVICES

Jason, it is fine to keep the bulleted list of your services, but can we simplify the top paragraph? Can we simply say: (b)(5)

(b)(5)

1) Antibody Characterization, Engineering and Modification

(b)(5)

2) Hybridoma & Monoclonal Antibody Production

Jason, can we simply say (b)(5)

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(b)(5)

(b)(5)

4) Immunological and Serological Assay Development

Jason, please describe what service we are offering. Could we say: (b)(5)

(b)(5)

Thank you for your help with this. I don't want to make edits and change the meaning of your services. I also don't want to short change your team on what you offer, so please add back material if need be, but in simpler terms. (b)(5) We just need to let them know what we offer.

Thanks again,

Leslie

From: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Sent: Thu, 23 Mar 2017 17:05:06 +0000
To: Goldstein, Jason (CDC/OID/NCEZID)
Subject: RE: IDD Website descriptions

Thanks Jason. (b)(6)

Thanks again,

Leslie

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thursday, March 23, 2017 1:03 PM
To: Wade, Leslie (CDC/OID/NCEZID) (CTR) <kne4@cdc.gov>
Subject: RE: IDD Website descriptions

Looks great. Thanks Leslie and good luck getting website up!
Jason

From: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Sent: Thursday, March 23, 2017 1:01 PM
To: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>
Subject: RE: IDD Website descriptions

Jason,

I have just a few changes. If you don't mind, (b)(5)

(b)(5)

(b)(5) Please let me know if this works for you. I appreciate your doing this.

Thank you,

Leslie

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thursday, March 23, 2017 12:08 PM
To: Wade, Leslie (CDC/OID/NCEZID) (CTR) <kne4@cdc.gov>
Subject: RE: IDD Website descriptions

Leslie,
These will work:

1) Antibody Characterization, Engineering and Modification

(b)(5)

2) Hybridoma & Monoclonal Antibody Production

(b)(5)

3) Protein Expression and Analysis

(b)(5)

4) Immunological and Serological Assay Development

(b)(5)

Thanks,
Jason

1) Antibody Characterization, Engineering and Modification

(b)(5)

(b)(5)

2) Hybridoma & Monoclonal Antibody Production

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Jason, please shorten. Can we delete or change what is in red and add what is in green? Make edits as you see fit. I am just guessing here – I may very well have this worded incorrectly.

(b)(5)

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Jason, please describe what service we are offering. Could we say: (b)(5)

(b)(5)

Jason M. Goldstein, Ph.D.
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jgoldstein1@cdc.gov

From: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Sent: Monday, March 20, 2017 10:51 AM
To: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>
Subject: IDD Website descriptions

Jason,

For our products and services pages I need very simple descriptions of your services for our customers. We will leave the original descriptions on your team page, but we need to get right to the point and tell customers what we are offering them.

Would you please condense the descriptions from your team page (included below). We also need these written in very simple terms, i.e. saying things in everyday language. Below are two examples of shortened descriptions. I put your four descriptions below these. Please shorten and get back to me. Thank you.

SHORT EXAMPLES:

1) Bacterial and Viral Production (BSL-2/BSL-3)

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JASON PRODUCTS AND SERVICES

Jason, it is fine to keep the bulleted list of your services, but can we simplify the top paragraph? Can we simply say: (b)(5)

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Jason, please shorten. Can we delete or change what is in red and add what is in green? Make edits as you see fit. I am just guessing here – I may very well have this worded incorrectly.

(b)(5)

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Jason, please describe what service we are offering. Could we say; (b)(5)

(b)(5)

(b)(5)

Thank you for your help with this. I don't want to make edits and change the meaning of your services. I also don't want to short change your team on what you offer, so please add back material if need be, but in simpler terms. (b)(5) We just need to let them know what we offer.

Thanks again,

Leslie

From: Petway, David (CDC/OID/NCEZID)
Sent: Mon, 27 Jul 2015 09:50:43 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: RE: Important message to all Atlanta-based staff

Jonathan I apologize, the members of your team do not have to come in today. They can go home.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Monday, July 27, 2015 9:37 AM
To: Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>
Subject: RE: Important message to all Atlanta-based staff

Joy was in earlier, but I don't know if she is now. We can make arrangements to move things around with regard to production, but I'm not sure what the status of orders in since I was out last week.

From: Petway, David (CDC/OID/NCEZID)
Sent: Monday, July 27, 2015 9:21 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>
Subject: FW: Important message to all Atlanta-based staff
Importance: High

Jonathan will Joo be available from SMRT. And possibly CJ on Tuesday to help with Cell Line orders? Hopefully this doesn't continue long as we bring on the Title 42 to backfill for Uzma?

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Sunday, July 26, 2015 5:50 PM
To: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Kiosy Lin (kiosy2012@gmail.com) <kiosy2012@gmail.com>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>; Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: FW: Important message to all Atlanta-based staff
Importance: High

What is guidance regarding tomorrow:

1. Kiosy what is likelihood of MDCK-S overgrowth? Will there be inability to fill Mon order if harvested on Tues?
2. With Mon being heavy production day already, the addition of two lines on Tues (HEK and Hep typically filled by Kiosy) will require Joy full-time and possibly CJ. (scheduled staff: Kiosy, Lee, Xiaoling)
3. I will need to handle bulk of hybridoma work that was required on Mon, and still be available for large MDCK order.

Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
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Building 23 Room 5-164
MS-A03
Atlanta, GA 30333
(404) 639-2258
(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: CDC Emergency Notification
Sent: Sunday, July 26, 2015 4:31 PM
To: CDC All - CDC & ATSDR-Atlanta-Employees <allatl@cdc.gov>; CDC All - CDC & ATSDR-Atlanta-Non-Employees <All-CDC&ATSDR-AtlantaNon-Employees@cdc.gov>
Subject: Important message to all Atlanta-based staff

Important Message to All Atlanta-Based Staff

DeKalb County officials are reporting that the water main break has been fixed, but water pressure continues to remain low on CDC's Roybal campus. In addition, the boil water advisory is still in effect. **On Monday, July 27, 2015,** CDC's Atlanta-based campuses will operate as follows:

- **Roybal Campus: CLOSED** to everyone but essential personnel. Employees on a telework agreement are expected to telework (see guidance below).
- **Lawrenceville Campus: OPEN**.
- **All other Atlanta-based campuses: OPEN**, but teleworking is **strongly encouraged** (see guidance below). Bottled water will be available, but may not reach some campuses until early afternoon.

Roybal Campus employees and other Atlanta-based employees (excluding Lawrenceville) that are on a telework agreement are expected to telework. All other employees will be granted an excused absence (administrative leave) for the day **UNLESS** the employee is:

- on official travel outside the Atlanta area
- on leave without pay
- on an alternative work schedule (AWS) day off, or
- on pre-approved leave

Emergency telework is available to all telework eligible employees. Eligible employees that have completed telework training but do not have a current primary agreement may request an emergency telework agreement via the Telework Management System (TMS). All teleworking employees must be prepared to telework for the entire workday, take unscheduled leave, or a combination of both.

Please notify your supervisor immediately if you plan on teleworking under emergency telework or if you are on a telework agreement and need to request unscheduled leave. **Contractors should contact their management with questions regarding time, attendance, and reporting.**

For CDC operating updates please monitor CDC email, the CDC Atlanta Emergency Notification number (1-800-937-5157), or follow @CDC_Status on Twitter.

Office of Safety, Security, and Asset Management (OSSAM)
ossam@cdc.gov
http://intranet.cdc.gov/ossam
Services. Support. Solutions.

From: Cynthia Martino
Sent: Tue, 29 Mar 2016 18:26:58 +0000
To: Thompson, Penny (CDC/OID/NCEZID);PCR;Moon, Jonathan L. (CDC/OID/NCEZID);Lin, Seh-ching (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Petway, David (CDC/OID/NCEZID);Hughes, Heather (CDC/OID/NCEZID)
Subject: RE: Mycoplasma samples for March 2016

No problem. The samples would not go on test until Friday anyway. Thank you for the notice though!

Cynthia

From: Thompson, Penny (CDC/OID/NCEZID) [mailto:pit7@cdc.gov]
Sent: Tuesday, March 29, 2016 2:21 PM
To: PCR [(b)(6)] Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>; Hughes, Heather (CDC/OID/NCEZID) <bsf8@cdc.gov>
Subject: RE: Mycoplasma samples for March 2016

Hi all,
I want to apologize and inform everyone, unfortunately we missed the cut off time for shipping the cell lines today. Your cell lines will be shipped tomorrow, arriving on Thursday around noon.
Again my apologies for this delay.

Penny Thompson
CDC/NCEZID/DSR/OD
Quality Assurance Specialist
Roybal Campus
Building 23 5th floor-room 5-118
Phone: 404-639-2449 MS A-03
Fax: 404-929-2750

http://intranet.cdc.gov/ncezid/dsr
http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

From: Cynthia Martino [(b)(6)]
Sent: Tuesday, March 29, 2016 10:50 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Heather Trumble [(b)(6)] Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: Amy Moquin [(b)(6)] Cynthia Martino [(b)(6)] Heather Trumble [(b)(6)] Karin Goodrich [(b)(6)] Laura Brooks [(b)(6)]
Subject: RE: Mycoplasma samples for March 2016

Thank you Jonathan.

We see from the sample submission details that Kiosy forwarded, two lines will be subjected to both tests/qualified including the E6 as well as the HEK line.

Cynthia

From: Moon, Jonathan L. (CDC/OID/NCEZID) [mailto:iki5@cdc.gov]
Sent: Tuesday, March 29, 2016 10:42 AM
To: Cynthia Martino [(b)(6)] Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Heather Trumble [(b)(6)] Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: PCR [(b)(6)]
Subject: RE: Mycoplasma samples for March 2016

Good Morning Cynthia,

Please note that we are sending a line called E6 (Panama) that should be treated as a new sample and have both tests run.

Thanks,

Jonathan

From: Cynthia Martino [(b)(6)]
Sent: Tuesday, March 29, 2016 10:12 AM

To: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>; Heather Trumble (b)(6) Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; PCR (b)(6)
Subject: RE: Mycoplasma samples for March 2016

Hi Kiosy and thank you for forwarding your submission details.

Our team is growing and, as such, there are now more individuals involved in processing your samples. To be sure the right people are contacted/notified, please address all email communication to (b)(6) This will ensure that all of the right people are copied.

Thanks in advance!

Cynthia

From: Lin, Seh-ching (CDC/OID/NCEZID) [mailto:syl2@cdc.gov]
Sent: Tuesday, March 29, 2016 10:05 AM
To: Heather Trumble (b)(6) Thompson, Penny (CDC/OID/NCEZID) <pit7@cdc.gov>
Cc: Cynthia Martino (b)(6) Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: Mycoplasma samples for March 2016

Heather,

The samples will be shipped today.
Thanks,

Kiosy

From: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Sent: Mon, 8 Apr 2013 20:13:34 -0400
To: Cobb, Gary L. (CDC/OID/NCEZID);Taylor, Curtis (CDC/OID/NCEZID)
Subject: RE: No QC Flask

Thanks Gary,

I will follow up with Jason tomorrow.

Dennis

From: Cobb, Gary L. (CDC/OID/NCEZID)
Sent: Monday, April 08, 2013 6:58 PM
To: Taylor, Curtis (CDC/OID/NCEZID); Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: Fw: No QC Flask

Fyi

From: Bailey, Tandra (CDC/OID/NCEZID)
Sent: Monday, April 08, 2013 06:16 PM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID); Cobb, Gary L. (CDC/OID/NCEZID)
Subject: No QC Flask

Jason,

The following Pool Lot #'s have no flask associated with them in the Cell Culture lab or the 6th floor QC room.

K-562 seeded 03/27/2013 p13 Pool Lot# 121930
MDCK seeded 03/29/2013 p75 Pool Lot # 121961
E6 seeded 04/01/2013 p25 Pool Lot# 122033
MDCK seeded 04/01/2013 p26 Pool Lot# 122030
HEK-293 seeded 04/02/2013 p48 Pool Lot# 122034

I found no flask for the Pool Lot# but there was a flask for the Lot ID to fill an order:

VeroP seeded 03/28/2013 p17 Pool Lot# 121921 has no flask but Lot ID 121924 does.

Since there are no QC flask's a CoA could not be submitted to you by QA.

Thanks,

Tandra Bailey

From: Taylor, Curtis (CDC/OID/NCEZID)
Sent: Tue, 9 Apr 2013 08:58:46 -0400
To: Cobb, Gary L. (CDC/OID/NCEZID);Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: RE: No QC Flask

Thanks

From: Cobb, Gary L. (CDC/OID/NCEZID)
Sent: Monday, April 08, 2013 6:58 PM
To: Taylor, Curtis (CDC/OID/NCEZID); Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID)
Subject: Fw: No QC Flask

Fyi

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Since there are no QC flask's a CoA could not be submitted to you by QA.

Thanks,

Tandra Bailey

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Wed, 27 Apr 2016 08:04:14 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: Order # 138896, for Product # HEK Released for Pickup/Delivery

Thanks!!

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, April 26, 2016 2:33 PM
To: Galloway, Renee (CDC/OID/NCEZID) <zul0@cdc.gov>
Subject: FW: Order # 138896, for Product # HEK Released for Pickup/Delivery

Renee,

Just wanted to let you know your cells are ready.

Thank you,

Jonathan

From: CDC NCID DSR BIOS
Sent: Tuesday, April 26, 2016 2:00 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: Order # 138896, for Product # HEK Released for Pickup/Delivery

BIOS Order #:	138896	**Lot #:**	140290
Product ID:	HEK	**Product Name:**	HEK, Human, Kidney---PRODUCED TUES---
Container:	Flask, TC, T25, Non-vented Cap	**Quantity:**	4
Ordered by:	Moon , Jonathan L	**for Customer:**	Moon , Jonathan L
Destination:	Clifton Road/23/5-135		

How to Retrieve Your Order

Clifton Road (Roybal campus) locations:
Because of the expiration of the delivery contract upon CDC acceptance of Building 23, products ordered through BIOS will no longer be delivered to any location on the Roybal campus. All products will be available for pickup by customers in the following locations:

Bldg. 23, 5th Floor, Room 5-611

- Custom Microbiological Media
- Custom Cell Culture Media
- Buffers
- Reagents

- Stains

Bldg. 23, 6th Floor, Room 6-435 or 6-642

- Cell Cultures

Please use the service elevators to reach these floors with your carts; these may be accessed through the corridors connecting bldg. 17-1st floor, bldg. 18-SSSB floor, and bldg. 23-B4 floor (follow signs to B23 service elevators). As space for the release of products is limited, please pick up products within 48 hours of receiving a notice of release.

Chamblee and Lawrenceville locations:

Delivery will be on Tuesday and Thursday to the assigned delivery points.

All other off-campus locations:

Items will be shipped through our standard CDC shipping service.

Thank You,
Scientific Products and Support Branch

Division of Scientific Resources, NCEZID

From: Bailey, Tandra (CDC/OID/NCEZID)
Sent: Tue, 9 Apr 2013 10:44:11 -0400
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID);Cobb, Gary L. (CDC/OID/NCEZID)
Subject: RE: QC Flask Program

Jason,

The Pool Lot#'s I mentioned do not have micrographs associated with them because they had no QC flask. I am physically going upstairs to inspect the flasks in room 6-460. I finished the forms for 4/4/2013 before I left yesterday.

Thanks,
Tandra Bailey

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Monday, April 08, 2013 8:46 PM
To: Bailey, Tandra (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID)
Subject: RE: QC Flask Program

the QC flasks in 6-460 Cell Culture Production Lab where both Teams have agreed now to place QC flasks

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Monday, April 08, 2013 8:37 PM
To: Bailey, Tandra (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID)
Subject: QC Flask Program

Tandra,
Since those QC flasks have expired that concludes the pending folder CoAs which should be emptied awaiting insertion of new CoAs for my technical review. I look forward to the more recent CoAs for last Thurs and Fri (4/4 and 4/5) with specific focus on MDCK and E6 that SMEs are requiring review ASAP. To ensure the ICD Team is meeting the agreed schedule, are you performing a physical inspection of all the QC flasks in 4-460 when you review the DHRs?
Thanks,
Jason

From: Bailey, Tandra (CDC/OID/NCEZID)
Sent: Monday, April 08, 2013 6:17 PM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Hughes, Heather (CDC/OID/NCEZID); Cobb, Gary L. (CDC/OID/NCEZID)
Subject: No QC Flask

Jason,

The following Pool Lot #'s have no flask associated with them in the Cell Culture lab or the 6th floor QC room.

K-562 seeded 03/27/2013 p13 Pool Lot# 121930
MDCK seeded 03/29/2013 p75 Pool Lot # 121961
E6 seeded 04/01/2013 p25 Pool Lot# 122033
MDCK seeded 04/01/2013 p26 Pool Lot# 122030
HEK-293 seeded 04/02/2013 p48 Pool Lot# 122034

I found no flask for the Pool Lot# but there was a flask for the Lot ID to fill an order:

VeroP seeded 03/28/2013 p17 Pool Lot# 121921 has no flask but Lot ID 121924 does.

Since there are no QC flask's a CoA could not be submitted to you by QA.

Thanks,

Tandra Bailey

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 13 Apr 2016 16:38:47 +0000
To: Galloway, Renee (CDC/OID/NCEZID)
Subject: RE: room orientation

Good Afternoon Renee,

Please give me a call at your convenience to discuss the HEK cells.

Thanks,

Jonathan

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Monday, March 28, 2016 10:11 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: room orientation

Sure, no problem. Thanks!!!

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Monday, March 28, 2016 10:07 AM
To: Galloway, Renee (CDC/OID/NCEZID) <zul0@cdc.gov>
Subject: RE: room orientation

Could we do 1:30 instead?

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Monday, March 28, 2016 9:22 AM
To: Galloway, Renee (CDC/OID/NCEZID) <zul0@cdc.gov>
Subject: RE: room orientation

Sounds good – I'll meet you at my office – 23-5-135.

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Monday, March 28, 2016 9:06 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: room orientation

How is 1pm?

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Monday, March 28, 2016 7:34 AM
To: Galloway, Renee (CDC/OID/NCEZID) <zul0@cdc.gov>
Subject: RE: room orientation

That would be great – I do have a meeting from 2-3, but am otherwise free. What time works for you?

From: Galloway, Renee (CDC/OID/NCEZID)
Sent: Friday, March 25, 2016 11:32 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: room orientation

Hi Jonathan,

I now have a training I am attending on Monday morning until noon; can I come over in the afternoon?

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Tue, 25 Jun 2013 10:18:41 -0400
To: Sweat, Stacey (CDC/OID/NCEZID)
Cc: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: the AGO325

Thanks Stacey. I agree with your recommendation. Stick with the HS68 and use your new media formulation. If they are adhering no reason to coat plates with Lysine.
Please place rush order with Jonathan for DMEM + 20% FBS + growth factor since we have two lines now dependent on this media and one line is critical for fibroblasts overdue in delivery.
Thanks,
Jason

From: Sweat, Stacey (CDC/OID/NCEZID)
Sent: Tuesday, June 25, 2013 10:15 AM
To: Goldstein, Jason (CDC/OID/NCEZID)
Subject: RE: the AGO325

Our media does differ from these, although all of these media differ slightly from each other also. I also look up the ATCC media formulations before culturing the cells to see if they differ from our recommended media listed in our cell bank.
The HS68 skin fibroblast cells are beginning to grow after several weeks. The recommended media for these cells is DMEM according to ATCC and our records. I used DMEM + 20% FBS + growth factor initially with these cells because they were not growing. I believe that I should continue with this media since the cells are starting to grow, but I do need to order a new lot of it since the rest was expired. Should I ask Jonathan to rush an order for this media as I also will need it for the HEK 293T/17 cells as well.
Also I don't see the AG06299 or theAG03513 listed in our cell bank inventory, so it looks like our best bet would be to try to get these HS68 cells to grow better in the new media if we can get it in the next couple of days.
I am not familiar with coating the plates as that is not something we have had to do before so I can't speak to that factor.

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Monday, June 24, 2013 11:59 PM
To: Sweat, Stacey (CDC/OID/NCEZID)
Cc: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: RE: the AGO325

Stacey,
Take a look at this protocol fibroblasts. Does our media match theserecommendations. I suspect we are missing growth factor/media or need a specialized surface on flask for attachment.
What are your thoughts?
Thanks,
Jason

Frequently Asked Questions about Fibroblast Cell Cultures
(Click on the question to be linked with the answer.)

1. What medium should be used for culturing CCR fibroblasts?

MEDIA EQUIVALENTS

(Coriell provides the following information for comparative purposes only and does not recommend any particular manufacturer.)

Manufacturer	Catalog Number
BioWhittaker	12-662 (with sodium pyruvate)
GIBCO	10370-021
Sigma	M-5650

Alternative media for fibroblasts include: alpha-MEM and Dulbecco's modified MEM.
We add L-glutamine or equivalent to a final concentration of 2 mM just before use. If long-term storage of cell culture medium is not an issue, commercially prepared medium containing L-glutamine can be used.
CCR does not use antibiotics or antifungals because of the danger of a cryptic infection in a cell repository. An investigator can add antibiotics if desired.
If a cell culture is growing slower than expected, our first approach is to switch to a different lot of pre-tested serum and/or to alter the serum concentration by 5%. Other causes of slow growth include: microbial contamination, too frequent subculture, too low density seeding at subculture, senescence of cell line, change in medium composition, incubator inadequacy in regulating temperature, humidity or CO2.

2. How should a newly received fibroblast cell culture be handled?

See the Web Catalog for details of the culture medium for individual cell lines.

Procedure

1. Wipe culture flasks with a disinfecting solution and place in a 37C incubator overnight with the cell sheet down. Do not remove medium (contains only 5% FBS to slow growth during transport). Observe cell sheet for confluency, morphology of cells and signs of contamination.
2. The next day the flask should examined as above and depending on the confluency of new culture's, the flask may be fed by withdrawing the shipping medium and covering the cells with growth medium (10 - 15% FBS) to a depth of 2mm or subcultured according to the cell count (see: Subculturing Fibroblast Cultures).
3. When subculturing a newly received fibroblast culture, the correct passage number must be determined. If the passage number is noted on the submission sheet or flask, the subcultured flasks should receive the next consecutive passage number.

3. How is a fibroblast cell line subcultured?

Supplies

- 0.53 mM EDTA in HBSS
- 0.04% trypsin/0.53 mM EDTA in HBSS
- Fibroblast Growth medium

Procedure

1. Prepare appropriate volumes of growth medium, EDTA, trypsin and "stop medium" (growth medium with FBS) flasks according to chart.
2. Dispense growth medium into flasks.

Subculturing Fibroblast Chart -- Mls of Solution Needed				
Flask Size	Growth Medium	EDTA	EDTA/Trypsin	"Stop" Medium
T12.5	4.5	4	1-2	2-3
T25	5-8	5	2-3	3-5
T75	20	8-10	4-5	5-7
T175	50	15	10	10

1. Remove medium by aspiration.
2. Add EDTA solution to the flask without dislodging the cell sheet and lay the flask cell side down. Cells should be watched closely through an inverted microscope for up to 10 minutes. If the cells begin to round or lift off the flask, the EDTA solution should be removed immediately.
3. Replace the EDTA solution with the EDTA/trypsin solution. Incubate the flasks at 37C for 4 to 7 minutes. Examine the flasks microscopically to make sure the cells begin to round up. The cells should have lifted off the surface after seven minutes. If the cells do not become detached after seven minutes, incubate an additional 1 to 2 minutes.
4. Tighten cap and lightly tap the side of the flask to lift the remaining cells from the flask. Wash the sides of the flask with growth medium (Stop Medium) to inactivate the trypsin. Gently mix cells and medium. Remove an aliquot for a cell count.
5. Seed the flasks according to the following chart:

Flask Size	Flask Seeding Ranges	Final Volume
T12.5	$1.0 - 2.5 \times 10^5$	4.5 ml
T25	$2.0 - 6.0 \times 10^5$	5-8 ml
T75	$9.0 - 15.0 \times 10^5$	15-30 ml
T175	$1.9 - 2.4 \times 10^6$	45-60 ml

Note: Basic seeding rule is $1.0 - 1.4 \times 10^4$ cells/cm^2

1. Place flasks in 37C, 5% CO2 incubator, loosen caps if not vented. Check the cultures after a few hours for cell attachment and pH. The time between subcultures will depend on the incubation temperature, cell line, and serum and medium. The majority of

mammalian cell lines require subculturing every 3-7 days. If the duration is longer than 5 days, change the culture medium every 3-4 days.

4. How are fibroblast cultures frozen for cryogenic storage?

Supplies

- 0.53mM EDTA in HBSS
- 0.04% trypsin/0.53 mM EDTA in HBSS
- Fibroblast Growth medium
- Fibroblast Freeze medium (growth medium with 10% glycerol or 5% DMSO)

Procedure

1. If cells are to be frozen in 10% glycerol, complete freeze medium may be kept at room temperature until used. Freeze medium prepared with DMSO should be kept refrigerated until used.
2. Each flask that is to be pooled for the freeze (freeze pool) should be examined microscopically for contamination and any unusual growth pattern. One flask should be maintained as a "backup" flask until the viability of the freeze can be checked.
3. Aspirate the growth medium from each flask. Add EDTA to each flask without dislodging cells and incubate at room temperature for 10 minutes. If cells begin to round or the edges of the cell sheet constrict, remove EDTA immediately.
4. Replace the EDTA solution with the EDTA/trypsin. Incubate the flasks at 37C for 4 to 7 minutes. Examine the flasks microscopically to make sure the cells begin to round. The cells should have lifted after seven minutes. If the cells do not become detached after seven minutes, incubate an additional 1 to 2 minutes.
5. Once the cells have lifted, add an equal or greater amount of growth medium to each flask to inactivate the trypsin. Gently triturate and then transfer cell suspension from all flasks and pool cells in a centrifuge bottle. Maintain the centrifuge bottle in ice while pooling flasks.
6. Remove an aliquot of the freeze pool, count the cells and calculate the total viable cells in the freeze pool. Centrifuge the freeze pool at 60-100 x g for 10 minutes at 8-10C.
7. Remove the supernatant and resuspend the cell pellet using gentle trituration in freeze medium at a final concentration of at least 5×10^5 viable cells per ml.
8. Distribute one-ml aliquots of the cell suspension into glass ampoules or plastic cryovials.
9. Seal glass ampules using an oxygen-propane flame. Check each glass ampule for pinholes or glass bubbles formed during sealing by immersion in a methylene blue/ethanol solution at 4C.
10. Freeze the ampules or cryovials at a rate of 1C per minute.
11. Frozen cell stocks are stored in the liquid nitrogen tanks. Glass ampules are submerged in liquid; plastic cryovials are stored in the vapor phase.
12. One ampule or cryovial from every freeze is recovered and cultured to check for viability and sterility.

5. How should fibroblast cell cultures be recovered from cryogenic storage?

Procedure

1. Prepare appropriate recovery medium (see Shipping Sheets for individual cell line).
2. Remove one ampule or cryovial from frozen storage and place immediately in a 37C water bath and agitate vigorously.

3. Once completely thawed, wipe ampule or cryovial with a 70% alcohol sponge. Score the neck of a glass ampule and open utilizing an ampule opener.
4. Remove the contents of the ampule or cryovial using a sterile transfer pipette and place in a T25 tissue culture flask containing 5 ml of the appropriate fresh growth medium for fibroblast cultures.
5. If a cell count is required, mix the contents of the flask gently with a 1 ml pipette and remove 0.2 ml for a 1:5 diluted cell count. Place the flask in the 37C incubator lying cell surface down. Gently swirl the flask to distribute the cell suspension evenly over the flask surface. Adjust the cap to allow appropriate gas exchange (depending on buffering system of the medium). Fibroblast cultures should be refed with fresh medium the day after recovery.
6. Some cell lines recover better if all traces of cryoprotectant are removed by washing and centrifugation. Transfer the contents of ampule or cryovial to a 15-ml centrifuge tube with 3 ml of growth medium. Centrifuge for 5 min at 60-100xg and 10C. Remove supernatant, resuspend pellet, and transfer to a T25 flask with a final volume of 5 ml.
7. Culture as described for subculturing fibroblasts. If cells fail to proliferate after 1-2 weeks, expand the backup flask for a second freeze

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

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jgoldstein1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Monday, June 24, 2013 2:02 PM
To: Sweat, Stacey (CDC/OID/NCEZID)
Cc: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: FW: the AG0325
Importance: High

Stacey,
Look for either of these:

AG06299, human skin fibroblast, Coriell and AG03513, human skin fibroblast
Grow them up at same time in T25 and see if they attach.

Also grow them each up in a flask coated with 1mg/ml of L-Lysine. Make a solution of the Lys in carbonate buffer and coat plate overnight. Wash next day and then add your cells just like it was a new flask.
If they do not attach either w/wo Lys let me know.

Thanks,
Jason

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From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Monday, June 24, 2013 1:54 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Cc: Yera, Helena (CDC/OID/NCEZID) (CTR)
Subject: FW: the AGO325

Hello Jason: I am sorry to hear the unfortunate news. Helene does not have too much tome – another couple of months and she will go back to her university in Paris. Would it be possible to get any one of the cell lines – AG06299, human skin fibroblast, Coriell and/or AG03513, human skin fibroblast or any other skin cell line that you think would grow well.
Thank you.
Vish

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Phone: 404-718--4159 (office); 404-718-4174 (main lab)
Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Yera, Helena (CDC/OID/NCEZID) (CTR)
Sent: Friday, June 21, 2013 4:36 PM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Subject: RE: the AGO325

We could try these two cells lines to see if one of them will grow well : AG06299, human skin fibroblast, Coriell and AG03513, human skin fibroblast.

But they are so old than the first cells lines.

Thank you very much.

Helene

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Friday, June 21, 2013 1:14 PM
To: Yera, Helena (CDC/OID/NCEZID) (CTR)
Subject: FW: the AGO325

Helene – what do you think?

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Phone: 404-718--4159 (office); 404-718-4174 (main lab)
Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Friday, June 21, 2013 1:12 PM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Cc: Yera, Helena (CDC/OID/NCEZID) (CTR); Sweat, Stacey (CDC/OID/NCEZID)
Subject: RE: the AGO325

Vish,
The BUD-8 cells are not attaching and likely require a suitable ECM component on flask surface before attaching. We should try another skin fibroblast line from our Cell Bank or request that you purchase an ATCC skin fibroblast of your choice. We can expand, bank and fill your production with such a line that has specific requirements outlines by ATCC. I believe that certain older fibroblast lines at CDC were not preserved optimally in the past and therefore not recovering well.
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

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jgoldstein1@cdc.gov

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Monday, June 17, 2013 3:25 PM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Yera, Helena (CDC/OID/NCEZID) (CTR)
Subject: RE: the AGO325

Thanks Jason. Appreciate your continued help.

Govinda S. Visvesvara, Ph.D.
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From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Monday, June 17, 2013 3:17 PM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Cc: Yera, Helena (CDC/OID/NCEZID) (CTR)
Subject: RE: the AGO325

Vish,
We are looking into this line or suitable alternative.
Thanks for your patience.
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

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From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Monday, June 17, 2013 2:42 PM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Yera, Helena (CDC/OID/NCEZID) (CTR)
Subject: FW: the AGO325

Thanks, Jason. Helene would like to try "BUD8 : BUD-8, Human, Skin Fibroblast Adult". Would that be possible or you might suggest another suitable skin cell culture.
Vish

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From: Yera, Helena (CDC/OID/NCEZID) (CTR)
Sent: Monday, June 17, 2013 2:39 PM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Subject: RE: the AGO325

Good afternoon,

We could try this other cell line

BUD8 : BUD-8, Human, Skin Fibroblast Adult

Thank you very much

Helene

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Monday, June 17, 2013 11:15 AM
To: Yera, Helena (CDC/OID/NCEZID) (CTR)
Subject: FW: the AGO325

FYI. Can you pick a cell line that you want?

Govinda S. Visvesvara, Ph.D.
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Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Monday, June 17, 2013 10:36 AM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Subject: FW: the AGO325

Vish,
We are not able to revive this fibroblast line (HS68) with sufficient viability to meet production request. It may be growth factor issue or poor quality of preserved cells we removed. Is there another fibroblast line you would like us to attempt?
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
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From: Sweat, Stacey (CDC/OID/NCEZID)
Sent: Monday, June 17, 2013 8:01 AM
To: Goldstein, Jason (CDC/OID/NCEZID)
Subject: RE: the AGO325

No, I don't know if we are going to be able to grow this line. I have tried for several weeks now and am having no luck. I have even asked Kiosy and he doesn't know what else to try either. I'll look at them again this morning.

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Sunday, June 16, 2013 9:27 PM
To: Sweat, Stacey (CDC/OID/NCEZID)
Subject: FW: the AGO325

Stacey,
Was this fibroblast line released?
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
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From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Friday, May 31, 2013 9:30 AM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Sriram, Rama R. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID)
Subject: RE: the AGO325

Thank you, Jason. Appreciate much.
Vish

Govinda S. Visvesvara, Ph.D.
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From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thursday, May 30, 2013 3:04 PM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Cc: Sriram, Rama R. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID)
Subject: RE: the AGO325

This culture is recovering slowly and we still do not have enough stock to meet your order. We will provide you update the start of next week.
Thanks for your patience.
Jason

HS68	6-T300 (pending growth);

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

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jgoldstein1@cdc.gov

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Monday, May 13, 2013 10:05 AM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Sriram, Rama R. (CDC/OID/NCEZID)
Subject: RE: the AGO325

Thank you.

Govinda S. Visvesvara, Ph.D.
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Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Sunday, May 12, 2013 8:25 AM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Cc: Sriram, Rama R. (CDC/OID/NCEZID)
Subject: RE: the AGO325

HS68	Human foreskin fibroblast

We will begin culturing this week.
Jason

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 2:13 PM
To: Goldstein, Jason (CDC/OID/NCEZID)
Cc: Sriram, Rama R. (CDC/OID/NCEZID)
Subject: RE: the AGO325

Many thanks. It is greatly appreciated.

Govinda S. Visvesvara, Ph.D.
Centers for Disease Control and Prevention, Mailstop D-66
National Center for Emerging and Zoonotic Infectious Diseases
Division of Foodborne, Waterborne & Environmental Diseases
Waterborne Disease Prevention Branch
Roybal Campus, 1600 Clifton Road, Atlanta, GA 30333
Phone: 404-718--4159 (office); 404-718-4174 (main lab)
Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 1:34 PM
To: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Cc: Sriram, Rama R. (CDC/OID/NCEZID)
Subject: RE: the AGO325

We are doing inventory and will let you know which lines we have available.
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
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MS-A03
Atlanta, GA 30333
(404) 639-2258
(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 1:27 PM
To: Goldstein, Jason (CDC/OID/NCEZID)

Cc: Sriram, Rama R. (CDC/OID/NCEZID)
Subject: FW: the AGO325

Sorry, Jason. Ignore the previous e-mail. Rama will send the request. I would like to try at least two different skin cell lines. If you let us know which skin cell lines are available it will help immensely.
Vish

Govinda S. Visvesvara, Ph.D.
Centers for Disease Control and Prevention, Mailstop D-66
National Center for Emerging and Zoonotic Infectious Diseases
Division of Foodborne, Waterborne & Environmental Diseases
Waterborne Disease Prevention Branch
Roybal Campus, 1600 Clifton Road, Atlanta, GA 30333
Phone: 404-718--4159 (office); 404-718-4174 (main lab)
Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 1:15 PM
To: Goldstein, Jason (CDC/OID/NCEZID)
Subject: RE: the AGO325

Rama:
Please ask for AG6299 – AG06299; if that does not work ask for AG0846 – AG08466 Coriell human skin fibroblasts.
Thanks.
Govinda S. Visvesvara, Ph.D.
Centers for Disease Control and Prevention, Mailstop D-66
National Center for Emerging and Zoonotic Infectious Diseases
Division of Foodborne, Waterborne & Environmental Diseases
Waterborne Disease Prevention Branch
Roybal Campus, 1600 Clifton Road, Atlanta, GA 30333
Phone: 404-718--4159 (office); 404-718-4174 (main lab)
Fax: 404-718-4197; e-mail: gsv1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 11:43 AM
To: Sriram, Rama R. (CDC/OID/NCEZID)
Cc: Visvesvara, Govinda S. (CDC/OID/NCEZID)
Subject: the AGO325

Rama,
We don't see any similar lines in our inventory to AGO325. It looks like ATCC has a couple though. You could always order and we would expand and place in inventory.
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Centers for Disease Control and Prevention
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(404) 639-2258
(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 9:46 AM
To: Sriram, Rama R. (CDC/OID/NCEZID)
Cc: Visvesvara, Govinda S. (CDC/OID/NCEZID); Sweat, Stacey (CDC/OID/NCEZID)
Subject: FW: New Cell Lines

We do not have the AGO325 line listed in our cell bank inventory. It will be removed from catalogue. I will cancel that order. Please identify another line and place BIOS order. We will then search for line.
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
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(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Sweat, Stacey (CDC/OID/NCEZID)
Sent: Friday, May 10, 2013 9:37 AM
To: Goldstein, Jason (CDC/OID/NCEZID)
Subject: RE: New Cell Lines

I don't see the AGO325 line listed in our cell bank inventory.

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Thursday, May 09, 2013 3:52 PM
To: Sweat, Stacey (CDC/OID/NCEZID)
Cc: Lin, Seh-ching (CDC/OID/NCEZID)
Subject: New Cell Lines

Stacey,
Rama would like HMEC-1 and AGO325 (human skin fibroblasts) on 5/23. I will let her know about delay with new cell lines if necessary.
Thanks,
Jason

Jason M. Goldstein, Ph.D.
Team Leader
Immunochemistry and Cellular Development Team

Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
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(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Hughes-Baker, Laura J. (CDC/OID/NCEZID)
Sent: Wed, 3 Feb 2016 12:26:59 -0500
To: Goldstein, Jason (CDC/OID/NCEZID);Lee, Joo (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID);Tang, Xiaoling (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID);Petway, David (CDC/OID/NCEZID)
Subject: RE: Tomorrow's Cell Lines

I will go up at 1:00

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 12:11 PM
To: Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Hughes-Baker, Laura J. (CDC/OID/NCEZID) <bkz2@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

Thanks Joy, I did not read fully. Either Laura or I will be in hybridoma lab to assist anytime after 1.
Jason

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 12:10 PM
To: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Hughes-Baker, Laura J. (CDC/OID/NCEZID) <bkz2@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

I completed MDCK-S! Could you help me in HYB lab splitting and freezing down Lyme clones?

Thanks,
Joy

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 12:03 PM
To: Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

Joy,
I will be in lab anytime after 1pm to assist with MDCK-S. Please let me know.

Jason

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 12:01 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

Completed HLF and MDCK-S. Two other stocks (HEK and 293T) will be done this afternoon. These will take about 30 minutes.

Thank you for checking me out in CC lab and for your help,
Joy

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 8:40 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

MDCK-S is a flask order, so can be done by this afternoon. Today, I am scheduled to work with one order (HLF) and two other stocks. So, I can handle the MDCK-S today. If you guys have different thoughts, please let me know. By the way, I just talked with Jonathan and he is fine with me taking the MDCK-S order today.

Joy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 4:51 PM
To: Goldstein, Jason (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Lee, Joo (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID); Petway, David (CDC/OID/NCEZID)
Subject: Tomorrow's Cell Lines

Good Afternoon,
Stacey will be out again tomorrow and is planning to return on Thursday.

Below is the schedule for cells. We will need to determine how to handle the work.

-Jonathan

Wednesday	HLF	Joy	Stacey	1-0.25L	suspension	Rollin	Y	P21/P26
Wednesday	HEK	Joy		1-T150	flask	Panayampalli		P+5/P+33
Wednesday	293T	Joy		stock				P26/P53
Wednesday	MDCK-S	Stacey	Joy	90-T75s;	flasks	Sessions;	Y	P27/P29
Thursday	HELA	Joy	Stacey	1-1.0L	suspension	Liu	Y	P36/P61+7

Jonathan L. Moon, PhD
Team Lead, Reagent, Cell Line, and Media Team (proposed)
Mail Stop A-03
Scientific Products and Support Branch
Division of Scientific Resources
National Center for Emerging and Zoonotic Infectious Diseases
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http://intranet.cdc.gov/ncezid/dsr
http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 3 Feb 2016 17:16:13 +0000
To: Lee, Joo (CDC/OID/NCEZID)
Subject: RE: Tomorrow's Cell Lines

Wow – that would have been enough to fulfill the original request. No, they will be using the A549 cells instead.

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Wednesday, February 3, 2016 12:07 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

I remember yesterday you mentioned about a rush order for HLF. I have HLF some leftover from today (29mL @2.26E6 cells/mL). The rush order still exists?

Joy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 12:02 PM
To: Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>; Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

Thank you very much!

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Wednesday, February 3, 2016 12:01 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

Completed HLF and MDCK-S. Two other stocks (HEK and 293T) will be done this afternoon. These will take about 30 minutes.

Thank you for checking me out in CC lab and for your help,
Joy

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Wednesday, February 03, 2016 8:40 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Goldstein, Jason (CDC/OID/NCEZID)

<fex0@cdc.gov>; Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE: Tomorrow's Cell Lines

MDCK-S is a flask order, so can be done by this afternoon. Today, I am scheduled to work with one order (HLF) and two other stocks. So, I can handle the MDCK-S today. If you guys have different thoughts, please let me know. By the way, I just talked with Jonathan and he is fine with me taking the MDCK-S order today.

Joy

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 4:51 PM
To: Goldstein, Jason (CDC/OID/NCEZID); Tang, Xiaoling (CDC/OID/NCEZID); Lee, Joo (CDC/OID/NCEZID)
Cc: Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID); Petway, David (CDC/OID/NCEZID)
Subject: Tomorrow's Cell Lines

Good Afternoon,
Stacey will be out again tomorrow and is planning to return on Thursday.

Below is the schedule for cells. We will need to determine how to handle the work.

-Jonathan

Wednesday	HLF	Joy	Stacey	1-0.25L	suspension	Rollin	Y	P21/P26
Wednesday	HEK	Joy		1-T150	flask	Panayampalli		P+5/P+33
Wednesday	293T	Joy		stock				P26/P53
Wednesday	MDCK-S	Stacey	Joy	90-T75s;	flasks	Sessions;	Y	P27/P29
[illegible]	HELA	Joy	Stacey	1-1.0L	suspension	Liu	Y	P36/P61+7

Jonathan L. Moon, PhD
Team Lead, Reagent, Cell Line, and Media Team (proposed)
Mail Stop A-03
Scientific Products and Support Branch
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National Center for Emerging and Zoonotic Infectious Diseases
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http://www.cdc.gov/ncezid/dsr

Have a question or feedback on DSR's services or products? askdsr@cdc.gov

From: Panicker, Gitika (CDC/OID/NCZVED)
Sent: Tue, 16 Mar 2010 14:58:32 -0400
To: Bedi, Kanwar (CDC/OID/NCPDCID);Moon, Jonathan L. (CDC/OID/NCPDCID) (CTR)
Subject: RE: VLP purification using Heparin columns
Attachments: HPV 16 VLP 012610 production in HEK 293 FT cells-Sent to DSR.docx

Dear Kanwar/Jonathan,

Please ignore the previous report I sent you. There was a mix up in the sample information provided. Attached is the revised report.

Please let us know when a good time would be for us to bring the samples to you. Would 2 samples be good to start with?

Regards,
Gitika

From: Panicker, Gitika (CDC/CCID/NCZVED)
Sent: Tuesday, March 02, 2010 4:03 PM
To: Bedi, Kanwar (CDC/CCID/NCPDCID); Moon, Jonathan L. (CDC/CCID/NCPDCID) (CTR)
Subject: VLP purification using Heparin columns

Dear Kanwar/Jonathan,

Attached is our results summary as well as the paper that uses the Heparin columns for purification. Also, attached is a ppt of some of the EM pics. We do not have protein concentrations on all fractions. They will be completed tomorrow and I will send you those results then.

Do you have the 1ml Heparin columns or would you like the 5ml ones we have? Let us know when you would like us to bring the samples down.

Let me know if you have any questions.

Regards,
Gitika
<< File: senger etal 2009 - vlp multibac.pdf >> << File: HPV 16 VLP production in HEK 293 FT cells.docx >> << File: EM for hpv16 VLP 020210 - HEK.pptx >>

Gitika Panicker, Ph.D.
Chronic Viral Diseases Branch
Centers for Disease Control and Prevention
MS G-41, BLDG 1-South , Rm 1260
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Atlanta, GA 30329

Tel: 404-639-2269
Fax: 404-639-3540

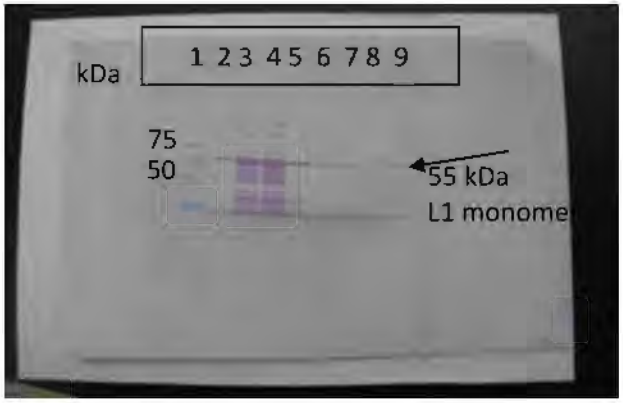
03.02.10 **Summary of results from HPV 16 VLP production in HEK 293 FT cells**

1. DATE OF TRANSFECTION : 1/26/2010

2. Western Blot HPV 16 VLP fractions
   Type of gel: 10 % Tris HCl Bio Rad #345-0010
   Size standard: Precision Plus Protein Standard (Bio Rad #161-0373)
   10 µl of all Fractions were loaded.

Result: 55kD band seen in all fractions.

Lane #	Sample Name
1	marker
2	16 VLP F-3
3	16 VLP F-4
4	16 VLP F-5
5	16 VLP F-6
6	16 VLP F-7
7	16 VLP F-8
8	16 VLP F-9
9	16 VLP F-10



3. Protein Assay

Total protein content was measured using the Coomasie Plus™ kit (Pierce technologies)

Sample ID	Final Conc (µg/ml)
HPV 16 L1 F2	19.79586495
HPV 16 L1 F3	78.93781088
HPV 16 L1 F4	1641.140608
HPV 16 L1 F5	2377.946244
HPV 16 L1 F6	1058.357441
16VLPL1 F7	240.720621
16VLPL1 F8	154.5437556
16VLPL1 F9	121.4910493
16VLPL1 F10	71.03191312

4. Electron Microscopy

Results from Charles Humphrey for each fraction:

LI F2 100s-1000s VLPs/GS in large clusters, minimal debris.
LI F3 Same as LI F3, particles seem to be buried in ? Protein matrix.

Li F4	Amorphous debris, dense preparation--- redo.
LI F4 repeat	10s of 1000s VLPs/GS mixed with dense flocculent substance.
LI F5	Amorphous protein, few if any particles.
LI F6	100s-1000 VLPs/GS embedded in amorphous substance, particles are "ghost-like" with only a thin area of the outer capsid showing, Particles are stain penetrated.
LI F7	10-20 VLPs/GS in clusters, ghost-like VLPs in debris.
LI F8	No convincing VLPs, also little debris; should this be repeated?
LI F9	5-10 VLPs/GS, "ghost-like" VLPs in amorphous debris.
LI F10	100s VLPs/GS "ghost-like" particles, need to repeat.
Li F10 repeat	100s-1000 VLPs/GS embedded in amorphous unknown substance.

Study Aim: We could try to further purify **F4 and F5** to begin with. Based on the purity of these results we can try F6 and combination of F2,F3, F10.

We propose testing the protocol from Senger et al 2009 paper for the use of Heparin columns for VLPs . Excerpt taken from paper:

" The peak fractions from CsCl fractionation were pooled, dialyzed against 50 mM Hepes (pH 7.4, 0.3 M NaCl), and cleared from residual debris by centrifugation at 20,000 ×g for 10 min at 4 °C. The samples were further purified by affinity chromatography using 1 ml HiTrap™ Heparin HP columns (GE Healthcare). Elution of VLPs was carried out with 50 mM Hepes (pH 7.4) containing 1 M NaCl. The eluates were analysed by SDS-PAGE and Coomassie-staining and western-blot analysis. The capsid quality was verified by electron microscopy"

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Tue, 10 Jan 2017 09:46:02 -0500
To: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Subject: RE: Website Content

Thanks Leslie.

Jason M. Goldstein, Ph.D.
Team Leader
Immuno-Diagnostic Development Team
Reagent and Diagnostic Services Branch
Division of Scientific Resources
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jgoldstein1@cdc.gov

From: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Sent: Tuesday, January 10, 2017 9:39 AM
To: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>
Subject: RE: Website Content

Jason,

Thank you for getting back to me. I think part of the issue (b)(5)

(b)(5)

I appreciate your guidance on this,

Leslie

From: Goldstein, Jason (CDC/OID/NCEZID)
Sent: Tuesday, January 10, 2017 7:35 AM
To: Wade, Leslie (CDC/OID/NCEZID) (CTR) <kne4@cdc.gov>
Subject: RE: Website Content

DR. BLACK ASKS THAT JASON PLEASE EXPLAIN (b)(5)

(b)(5)

Dr. Black asks?

Antibody Characterization, Engineering and Modifications

(b)(5)

http://www.pegsummit.com/Engineering-Antibodies/

Jason M. Goldstein, Ph.D.
Team Leader
Immuno-Diagnostic Development (IDD) Team
Reagent and Diagnostic Services Branch (RDSB)
Division of Scientific Resources (DSR)
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
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(404) 471-8094 (Fax)
(415) 519-4493 (Cell)
jgoldstein1@cdc.gov

From: Wade, Leslie (CDC/OID/NCEZID) (CTR)
Sent: Monday, January 09, 2017 5:09 PM
To: Goldstein, Jason (CDC/OID/NCEZID) <fex0@cdc.gov>
Subject: Website Content

Jason,

Dr. Black was reviewing some of our Products and Services and wanted me to reach out to you. She is asking if you can please add a little more to the description for **Antibody Characterization, Engineering and**

Modification. See the attachment. (b)(5)

(b)(5)

Thank you,

Leslie

From: Tang, Xiaoling (CDC/OID/NCEZID)
Sent: Thu, 4 Feb 2016 12:13:14 -0500
To: Lee, Joo (CDC/OID/NCEZID);Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE: while I am away

Technically, since these are new stocks, what we need to do is to keep an eye on the growth and passage them when the cells are confluent.

Thanks,

Xiaoling

From: Lee, Joo (CDC/OID/NCEZID)
Sent: Thursday, February 04, 2016 11:46 AM
To: Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE: while I am away

What needs to be done wiht MDCK-S and A549 new stocks?

Thanks,
Joy

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Tuesday, February 02, 2016 2:31 PM
To: Tang, Xiaoling (CDC/OID/NCEZID) <gqi3@cdc.gov>; Lee, Joo (CDC/OID/NCEZID) <ihk3@cdc.gov>; Sweat, Stacey (CDC/OID/NCEZID) <sgf3@cdc.gov>
Cc: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Bagarozzi, Dennis Jr., Ph.D. (CDC/OID/NCEZID) <zbg7@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: while I am away

Hi,

I am writing some notes here for my absence from 2/3 to 2/17.

Stacey: There are 2 new lines in the north incubator, MDCK-S and A549. Please take over and let someone know if you can't do it.
Joy: change medium for HEK(Wed) and HLF(Fri)
Whoever does MDCK-S on Monday (2/8) should split the stock on Friday to accommodate an extra day's growth.

I can be reached by this email since there is a wifi in my parent's house.

Thanks,

Kiosy

From: Petway, David (CDC/OID/NCEZID)
Sent: Wed, 12 Apr 2017 12:12:07 -0400
To: Moon, Jonathan L. (CDC/OID/NCEZID)
Subject: RE:

Thanks!
David Petway
Deputy Branch Chief (Acting)
Reagent and Diagnostic Services Branch.

-------- Original message --------
From: "Moon, Jonathan L. (CDC/OID/NCEZID)" <iki5@cdc.gov>
Date: 4/12/17 12:09 PM (GMT-05:00)
To: "Petway, David (CDC/OID/NCEZID)" <drq5@cdc.gov>
Subject: RE:

(b)(5)

From: Petway, David (CDC/OID/NCEZID)
Sent: Wednesday, April 12, 2017 11:24 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE:

Hey Jonathan we discussed changing it to the new method with the cost of labor for the media production rolled into the supply cost. You had provided me the below (what you were working on for SCIRESON costing and I have been basing the supply cost on it. Not sure why I don't have the peptone broth in the catalog.

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(b)(5)

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(b)(5)

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 12, 2017 10:58 AM
To: Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE:

Aren't we still using standard cell line pricing for the cell lines? For the peptone I'm surprised that it's not already in, but it should be 0.01.

From: Petway, David (CDC/OID/NCEZID)
Sent: Wednesday, April 12, 2017 10:37 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject:

Hey Jonathan do you have the supply cost for the below are these all new Items?

Custom Microbiological Media	Bottle, Glass Vitro, 1000 ml S/C	Default Closure		27	PEPTONE BROTH, ALKALINE
Cell Lines	Bottle, Glass Vitro, 250 ml S/C	Default Closure		ADSA	AEDES ALBOP., Mosquito, Larvae Pooled
Cell Lines	Flask, TC, T75, Non-vented Cap	Default Closure		J82	J82, Human, Bladdercell Carcinoma
Cell Lines	Flask, TC, T75, Non-vented Cap	Default Closure		SIHA	SIHA, Human, Cervical Squamous Carcinoma

David Petway
Deputy Branch Chief (Acting)
Dvision of Scientific Resources
Reagent and Diagnostic Services Branch
Office: 404-639-2202

Cell: 404-955-1039

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wed, 3 May 2017 19:27:39 +0000
To: Lin, Seh-ching (CDC/OID/NCEZID);Petway, David (CDC/OID/NCEZID)
Subject: RE:

(b)(5)

From: Lin, Seh-ching (CDC/OID/NCEZID)
Sent: Wednesday, May 3, 2017 2:47 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>; Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE:

They both use DMEM 10350.

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, May 3, 2017 2:38 PM
To: Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Cc: Lin, Seh-ching (CDC/OID/NCEZID) <syl2@cdc.gov>
Subject: RE:

Not sure – Kiosy, what media are we using for these two lines?

From: Petway, David (CDC/OID/NCEZID)
Sent: Wednesday, May 3, 2017 2:16 PM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
Subject: RE:

I have two more to be added to my catalog for this month. Do you know if they are trying out new cell lines for a specific study?

H4	H4, Human, Brain Glioma
HS27	HS27, Human, Newborn Foreskin

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 12, 2017 12:09 PM
To: Petway, David (CDC/OID/NCEZID) <drq5@cdc.gov>
Subject: RE:

(b)(5)

(b)(5)

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Sent: Wednesday, April 12, 2017 11:24 AM
To: Moon, Jonathan L. (CDC/OID/NCEZID) <iki5@cdc.gov>
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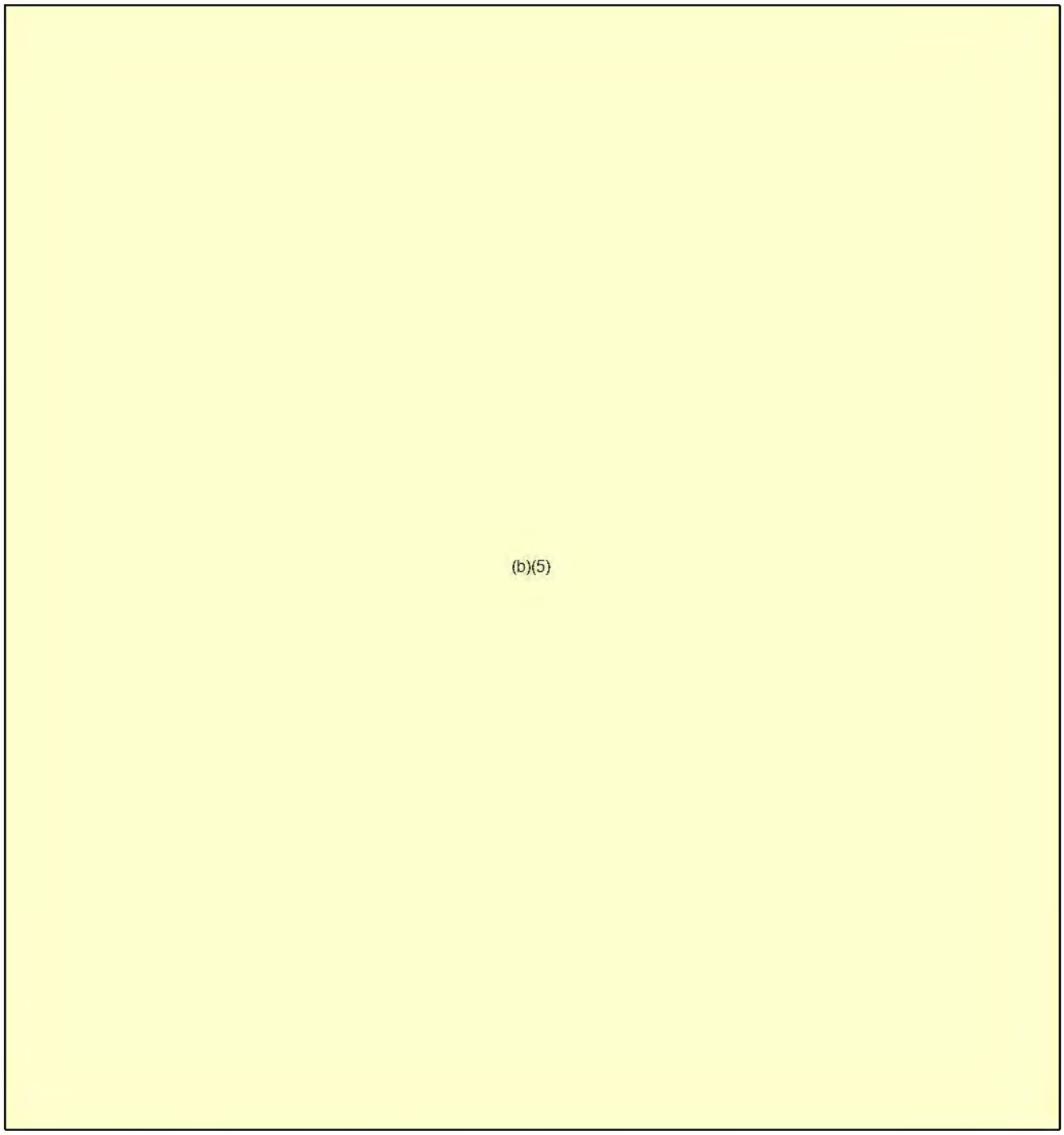

From: Moon, Jonathan L. (CDC/OID/NCEZID)
Sent: Wednesday, April 12, 2017 10:58 AM
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Cell Lines	Bottle, Glass Vitro, 250 ml S/C	Default Closure		ADSA	AEDES ALBOP., Mosquito, Larvae Pooled
Cell Lines	Flask, TC, T75, Non-vented Cap	Default Closure		J82	J82, Human, Bladdercell Carcinoma
Cell Lines	Flask, TC, T75, Non-vented Cap	Default Closure		SIHA	SIHA, Human, Cervical Squamous Carcinoma

David Petway
Deputy Branch Chief (Acting)
Dvision of Scientific Resources
Reagent and Diagnostic Services Branch
Office: 404-639-2202
Cell: 404-955-1039

From: Liu, Merry (CDC/OID/NCEZID)
Sent: Wed, 11 May 2011 11:14:59 -0400
To: Lin, Seh-ching (CDC/OID/NCEZID);Hughes, Angel (CDC/OID/NCEZID);Smith, Marvin L. (CDC/OID/NCEZID);McDaniel, Meredith (CDC/OID/NCEZID)
Cc: Liu, Merry (CDC/OID/NCEZID)
Subject: then cell lines when on leave

Good morning team,
I will be on leave from May 13 to May 17, 2011 and return to work on Wednesday May 18.
James will be on leave on May 13 and May 16. So you all have lot to cover on Monday.

Friday May 13,
Kiosy, please take care of RD order,
Split MDCK-Siat- there is an order for May 14, you may want to fill on Friday. Seed two flasks T162 on Friday

Monday May 15
Angel will need to cover HELA, MDCK-London, VERO-P and her MDCK cells on Monday.
Marvin please help MDCK-SIAT cells on Monday.
Kiosy help BGM cells on Monday if there is any orders.

There are three cell lines need to be frozen for Polio group
MRC-5-Angel
WI-38- Kiosy
HEK 293- carry on- Kiosy
Three of them in each 2 T162 flasks, they are not yet confluent. Since these cell lines need to keep passage # as low as possible , they need to be frozen from current passage. Please check growth of these cell lines.

ACCS
Hela – suspension (8X) need 14 flasks. I will seed stocks on Wednesday
Vero-p need 3 flasks, seed 4 stocks on Tuesday
MDCK- need three flasks , seed 4 stocks on Tuesday.

My cell phone # is (b)(6)

I will be in a full day tomorrow, let me know if you have any questions.

Thank you all for your support.

Merry

From: Panicker, Gitika (CDC/OID/NCZVED)
Sent: Fri, 16 Apr 2010 09:13:12 -0400
To: Liu, Merry (CDC/OID/NCPDCID)
Cc: Lin, Seh-ching (CDC/OID/NCPDCID);Bedi, Kanwar (CDC/OID/NCPDCID);Herzegh, Owen (CDC/OID/NCPDCID) (CTR);Moon, Jonathan L. (CDC/OID/NCPDCID) (CTR);Kryston, Caitlyn K. (CDC/OID/NCZVED);Rajbhandari, Ira (CDC/OID/NCZVED) (CTR)
Subject: VLP production in HEK 293TT cells
Attachments: buck 2007- curr protocols- VLP in human cells.pdf

Dear all,

Attached is the protocol we follow in the lab to produce VLPs in HEK293 for your review. Also, please forward the info to the group who might be able to help us with mammalian cell culture. We would be interested to start on this as soon as we are settled into the new building.

Regards,
Gitika

Gitika Panicker, Ph.D.
Chronic Viral Diseases Branch
NCEZID/DHCPP(Proposed)
Centers for Disease Control and Prevention
MS G-41, BLDG 1-South , Rm 1260
1600, Clifton Road
Atlanta, GA 30329
Tel: 404-639-2269
Fax: 404-639-3540

Production of Papillomavirus-Based Gene Transfer Vectors

Christopher B. Buck[1] and Cynthia D. Thompson[1]

[1]National Cancer Institute, Center for Cancer Research, Bethesda, Maryland

ABSTRACT

Papillomaviruses are a diverse group of pathogens that infect the skin and mucosal tissues of humans and various animal species. The viral genome is a circular, double-stranded DNA molecule ~8-kb in length. The non-enveloped papillomavirus capsid is composed of a virally encoded major coat protein, L1, and a minor coat protein, L2. L1 and L2 co-assemble when expressed in mammalian cells, and can promiscuously encapsidate essentially any <8-kb plasmid present in the cell nucleus. In the last several years, there has been rapid development of techniques for intracellular production of papillomavirus-based gene transfer vectors (also known as pseudoviruses). This unit outlines the production and propagative amplification of papillomaviral vectors. The system represents a highly tractable method for converting pre-existing mammalian expression plasmids into infectious virus stocks. The resulting vectors have utility for in vitro, as well as in vivo gene delivery applications. *Curr. Protoc. Cell Biol.* 37:26.1.1-26.1.19. © 2007 by John Wiley & Sons, Inc.

Keywords: papillomavirus • HPV • pseudovirus • pseudovirion • virus-like particle • VLP

INTRODUCTION

The papillomavirus capsid proteins L1 and L2 can, when co-expressed in mammalian cells, co-assemble and package heterologous nonviral DNA into infectious particles that resemble authentic papillomavirus virions (Buck et al., 2004, 2005). Essentially any transfected <8-kb expression plasmid present in the cell nucleus can be encapsidated. The high degree of promiscuity of packaging makes it possible to convert transfected reporter plasmids into papillomaviral vector stocks capable of delivering the encapsidated plasmid to a wide variety of cultured cell types. Until recently, such papillomaviral vectors (also known as pseudoviruses) have primarily been used for analysis of papillomavirus neutralization and infectious entry pathways. However, papillomaviral vectors are beginning to show promise as tractable general-purpose gene transfer vehicles. Applications include high-level overexpression of genes of interest in cultured cells, as well as in vivo gene delivery in mouse model systems (Roberts et al., 2007).

The production system relies on a human embryonic kidney cell line, 293TT, which expresses high levels of the simian virus 40 (SV40) large T antigen (Buck et al., 2004). In primate cell lines, SV40 T antigen drives high-level replication of plasmids carrying the SV40 early promoter/origin of replication (*ori*), which is present on a wide variety of commercially available mammalian expression plasmids. In Basic Protocol 1, an expression plasmid encoding a gene or genes of interest, as well as the SV40 *ori*, is co-transfected into 293TT cells along with a second plasmid, p16L1L2, that drives expression of the L1 and L2 proteins of human papillomavirus type 16 (HPV16). After transfection, both the expression plasmid of interest and p16L1L2 are taken up (encapsidated) into infectious L1/L2 capsids. The resulting viral seed stock can be used to infect fresh 293TT cells, permitting high-yield, low-cost amplification of the vector (Basic Protocol 2; Buck et al., submitted). Although crude vector stocks can be used for a variety of applications, it

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is also possible to purify infectious capsids by ultracentrifugation (Support Protocol 1) or gravity-flow gel filtration (Support Protocol 2). Fractions containing capsids can be screened by the BCA assay, agarose gel electrophoresis (Support Protocol 3), or SDS-PAGE (*UNIT 6.1*). Although it should not generally be necessary to do so, purified capsids can be concentrated by dialysis against a concentrating reagent (Support Protocol 4).

If the plasmid being packaged expresses a fluorescent protein, the infectivity of the vector stock can readily be titered using flow cytometry or fluorescent microscopy (Support Protocol 5). Alternative Protocols 1 and 2 cover, respectively, the production of amplification-incompetent papillomaviral vectors (see Fig. 26.1.1) and bulk production of papillomavirus capsids.

NOTE: All solutions and equipment coming into contact with cells must be sterile, and proper aseptic technique should be used accordingly.

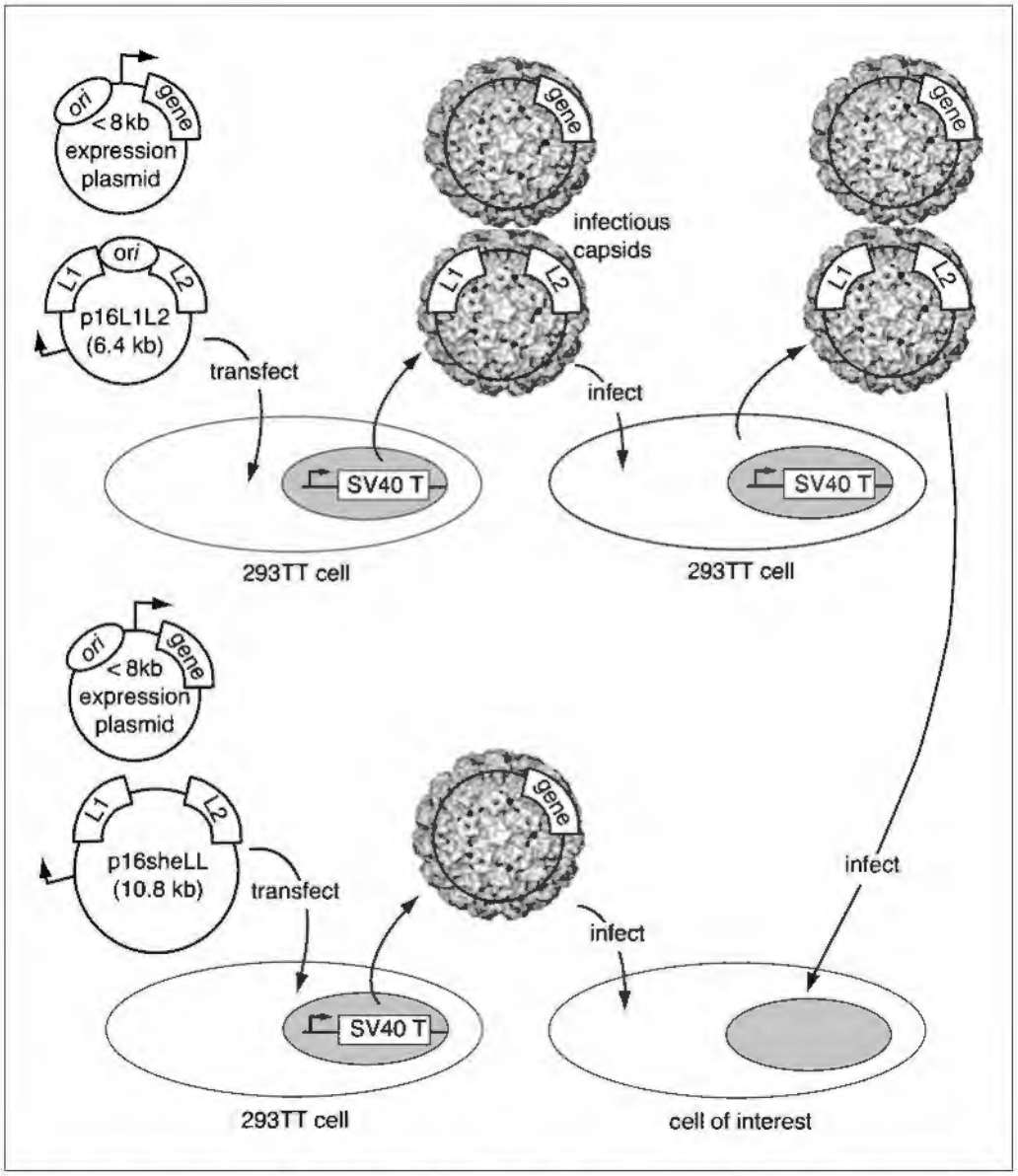

Figure 26.1.1 Amplification competent (top) versus incompetent (bottom) vector production.

GENERATION OF A PAPILLOMAVIRAL VECTOR STOCK BY TRANSFECTION

An initial vector seed stock is generated by co-transfecting an HPV16 L1/L2 expression plasmid, p16L1L2, together with an expression plasmid of interest into 293TT cells. After transfection, p16L1L2 and the expression plasmid are each replicated to high-copy number and packaged separately into L1/L2 capsids. Note that Alternate Protocol 2 discusses the use of a different L1/L2 expression plasmid, p16sheLL, which cannot be packaged into L1/L2 capsids and thus allows production of amplification-incompetent papillomaviral vector stocks. Capsids are harvested by lysing the cells with Brij-58 (a nonionic detergent) 48 hr after transfection. The resulting cell lysate must be allowed to mature for 24 hr, then can be diluted and used directly as an infectious vector stock or purified as described in Support Protocol 1 or 2. In some instances it may be useful to amplify the vector stock by using it to infect fresh 293TT cells (Basic Protocol 2).

Materials

DMEM (Dulbecco's modified Eagle medium) with 10% (v/v) FBS (DMEM-10)
Fetal bovine serum, heat-inactivated at 56°C for 30 min (FBS)
293TT cells
0.05% (w/v) trypsin/EDTA solution (Invitrogen or other supplier)
2× freeze medium: 82% (v/v) FBS/18% (v/v) dimethylsulfoxide
50 mg/ml hygromycin B stock (Roche)
Lipofectamine 2000 (Invitrogen)
OptiMEM-I (Invitrogen)
p16L1L2 plasmid
<8-kb mammalian expression plasmid with SV40 *ori* (see Commentary)
DPBS-Mg (see recipe)
10% (v/v) Brij-58 (see recipe)
RNase A/T1 cocktail (Ambion, no. AM2286) or RNase A stock

225-cm^2 and 75-cm^2 cell culture flask
Humidified 37°C, 5% CO_2 incubator
37°C water bath
2-ml gasketed cryovials
Cryocooler (e.g., Nalgene Mr. Frosty isopropanol bath) chilled to 4°C
Liquid nitrogen freezer
15-ml conical centrifuge tubes
1.5-ml siliconized centrifuge tubes, preferably screw-cap (e.g., VWR, no, 60828-818)
Siliconized pipet tips (optional)

Establish the 293TT cell culture

1. Dispense 27 ml of DMEM-10 into a 225-cm^2 flask. Add 3 ml of FBS for a final FBS concentration of 20%. Place the flask in a humidified 37°C 5% CO_2 incubator and loosen the cap. Allow the flask to equilibrate for at least 10 min.

   It is important to omit hygromycin B (see below) from the culture medium during recovery from thawing.

   The Laboratory of Cellular Oncology (http://home.ccr.cancer.gov/LCO/) freely distributes 293TT cells to nonprofit researchers.

2. Thaw a frozen vial of 293TT cells in a 37°C water bath. Immediately upon thawing, pipet the cells into the flask.

   It is not necessary to spin the cells out of their freeze medium. Like other human embryonic kidney 293-derived cell lines, 293TT cells do not adhere tightly to plastic. Placing the cells in a relatively small volume with large surface area promotes attachment, which may take up to two days.

3. Incubate the cells in a humidified 37°C, 5% CO_2 incubator for 2 to 3 days.

4. Remove the supernatant and gently wash cells with 1 to 2 ml of trypsin/EDTA. Remove trypsin wash and replace with 1 to 2 ml of fresh trypsin/EDTA. Return the flask to the incubator, loosen the cap, and incubate for at least 5 min, gently rocking the flask once or twice. Neutralize the trypsin by suspending the cells in 9 ml of DMEM-10.

   Although 293TT cells are easily dislodged from plastic, the cells can adhere to one another fairly tightly. If the cells are not fully trypsinized, the resulting cell clumps may be partially lysed by shear forces during resuspension. Insufficient trypsinization also results in the appearance of unhealthy piles of cells after replating.

5. On the first or second passage, retain enough cells to freeze archive vials in liquid nitrogen. When trypsinizing the cells, retain some of the spent culture medium. After trypsinization, resuspend the cells in the retained spent medium. Gently mix the suspended cells 1:1 with 2× freeze medium. Distribute the suspension as 1-ml aliquots in cryovials (roughly 2 to 5 × 10^6 cells per vial). Transfer the vials to a cryocooler and freeze at −80°C overnight. Transfer the frozen cells to a liquid nitrogen freezer for long-term storage.

6. For routine passaging, split the culture 1:10 or 1:20 every 2 to 3 days. After recovery from thawing, supplement the culture medium with hygromycin B at a final concentration of 400 μg/ml to promote maintenance of SV40 T antigen expression.

Transfect 293TT cells

7. Preplate 7.5 × 10^6 293TT cells in a 75-cm^2 flask in 20 ml of DMEM-10 without hygromycin B. Incubate the cells overnight in a humidified 37°C, 5% CO_2 incubator.

   A 75-cm^2 flask is used as an example, but the transfection can easily be scaled up or down based on the surface area of the culture vessel. See the Lipofectamine 2000 package insert for details.

8. Transfect the cells with Lipofectamine 2000, essentially according to package insert. Mix 80 μl of Lipofectamine 2000 reagent with 2 ml of OptiMEM-I in a 15-ml tube. Incubate 10 min.

9. In a separate 15-ml tube, mix 19 μg each of p16L1L2 and expression plasmid of interest in 2 ml of OptiMEM-I.

10. Combine the Lipofectamine 2000 and DNA mixtures and incubate 20 to 30 min to form lipid/DNA complexes.

11. Add the complexes directly to the preplated cells and incubate 6 hr.

    IMPORTANT NOTE: *From this point forward, the culture should be handled under proper biosafety conditions approved by an institutional biosafety committee (see Biosafety heading in the Commentary section).*

    It is essential that the cells be <50% confluent at the time of transfection. Higher levels of confluency tend to reduce the transfection efficiency for 293TT cells. Ideally, the cells should be preplated late in the day, then transfected the next morning. It is not necessary to change the medium on the cells before adding the lipid/DNA complexes, provided the cells were preplated in DMEM-10 without antibiotics or selective agents. Incubation of the cells with the lipid/DNA complexes for 4 to 8 hr gives similar results.

12. Carefully remove the supernatant from the culture and add 20 ml of fresh DMEM-10 prewarmed to 37°C.

Care should be taken not to dislodge the cells when adding fresh medium. For example, it may help to turn the flask upside-down and add the medium to the top surface of the flask. Medium can be supplemented with antibiotics (e.g., pen-strep) at this point, although this is not generally necessary.

13. Return the transfected cells to the incubator for 2 days.

It should not be necessary to split the culture.

Harvest capsids

14. Remove supernatant from the culture.

Generally, there will be very few detached cells and the supernatant can be discarded. If there are substantial numbers of floating cells, recover them by centrifugation.

15. Harvest cells by trypsinization (see step 4 above). Transfer suspended cells to a 15-ml conical centrifuge tube. Collect residual cells by rinsing the flask with 4 ml of fresh DMEM-10. Pool rinse in the same 15-ml conical tube. Pellet the cells by centrifuging 10 min at 200 × *g*, 4°C.

16. Remove the supernatant and resuspend the cells in 0.5 ml of DPBS-Mg. Transfer the suspension to a 1.5-ml siliconized tube. Rinse the 15-ml conical tube with 0.5 ml of fresh DPBS-Mg. Pool rinse into the 1.5-ml siliconized tube. Pellet the cells by centrifuging 10 min at 200 × *g*, 4°C.

Papillomavirus capsids interact nonspecifically with polypropylene and other types of surfaces (Shi et al., 2005). Siliconized tubes appear to be less prone to disruptive nonspecific interactions with the capsids. Blocking of polypropylene surfaces with excess protein or detergent also helps prevent capsid-plastic interactions. Thus, the use of siliconized tubes is desirable but not absolutely essential for the purposes of Basic Protocols 1 and 2. The use of siliconized tubes becomes more important when handling purified capsids (Support Protocols 1 and 2), particularly if the capsids are to be stored for extended periods of time at 4°C. Although siliconized screw-cap tubes can be difficult to obtain, they are easier to keep sterile than more widely available flip-cap siliconized tubes. The use of siliconized pipet tips is optional.

17. Carefully remove the supernatant. Estimate the volume occupied by the cell pellet by side-by-side comparison to fluid in a dummy tube.

Pellet volume for a 75-cm^2 flask of cells is typically 60 to 80 µl.

18. Add 1.5× cell pellet volumes of DPBS-Mg. For example, add 120 µl of DPBS-Mg to a cell pellet of 80 µl (total volume of about 200 µl). Resuspend the cells by gently vortexing or flicking the tube.

It is critical that the cells be suspended at a density of at least 100 × 10^6 cells/ml. Lower-density lysates can suffer from nonspecific protein aggregation that reduces the purity of capsid stocks and can also reduce titer yield. Estimating suspension density based on pellet size is safer and more reliable than performing hemacytometer counts.

19. Add 10% Brij-58 to achieve a final concentration of ~0.35%.

For example, add 7 µl of 10% Brij-58 to 200 µl cell suspension.

20. Add ~1 µl of RNase A/T1 cocktail (or ~5 RNase A units) and mix.

Intact ribosomes are large enough to partially co-purify with capsids. Digestion of ribosomes with RNase thus facilitates purification (see Support Protocols 1 and 2). The suggested amount of RNase stock is more than enough enzyme to adequately digest ribosomes—lower doses of enzyme stock are also effective.

21. Allow capsids to mature by incubating the lysate at 37°C for 24 hr.

Although this step of the protocol may seem counterintuitive, it is essential to allow the capsids to undergo a slow process of maturation, in which disulfide bonds between neighboring L1 molecules stabilize the structure of the capsid (Buck et al., 2005). Prior to maturation, capsids are infectious but physically fragile, such that immature capsids lose infectivity during purification or freeze-thaw cycles. The maturation process also renders the capsid more soluble, allowing clarification of the lysate (step 22).

It may be helpful to gently mix the lysate once or twice during the maturation period. Note that effective sterile technique is critical during harvest of capsids, since contaminating microbes have ample opportunity to grow during the capsid maturation period.

22. After maturation, chill the lysate on ice for 5 to 10 min. Clarify the chilled lysate by centrifuging 10 min at 5,000 × *g*, 4°C. The resulting clarified supernatant is the vector stock. Freeze at −80°C in 20 to 50 µl aliquots or proceed to purifying the stock (Support Protocols 1 and 2).

The clarified supernatant can be used directly as a crude papillomaviral vector stock to infect cells of interest. The residual Brij-58 in the lysate is not toxic to most cell types, provided the stock is diluted least 1:500 (final dilution in culture well). The clarified lysate can also be used as a seed for amplifying the vector in fresh 293TT cells (Basic Protocol 2). Although amplification allows high-yield production of a more concentrated vector stock, initial seed stocks are usually of sufficient titer for use in most applications.

BASIC PROTOCOL 2

PROPAGATIVE AMPLIFICATION OF A PAPILLOMAVIRAL VECTOR STOCK

In this protocol, the vector seed stock from Basic Protocol 1 is amplified by infection of fresh 293TT cells. In principle, the amplified vector stock can in turn be further amplified by additional rounds of infection of 293TT cells. However, as the viral stock is passaged, smaller collapsed plasmid recombinants begin to dominate the propagated plasmid swarm. By the third passage, ~3 kb collapsed species are predominant and, as a consequence, titer yield begins to decline.

Materials

293TT cells
DMEM with 10% (v/v) FBS
Vector seed stock (Basic Protocol 1)

225-cm^2 flask
Humidified 37°C 5% CO_2 incubator

1. Plate 12 × 10^6 293TT cells in 50 ml of DMEM-10 in a 225-cm^2 flask. Incubate overnight in a humidified 37°C, 5% CO_2 incubator.

2. Infect the preplated cells by adding 20 µl of vector seed stock (Basic Protocol 1). Return the flask to the incubator. Incubate the culture with the vector inoculum for 20 to 40 hr, then change the cells into fresh DMEM-10.

Rocking the flask occasionally during the first 2 hr of incubation will help to promote virus attachment.

The change of medium may improve infectious titer yield, but can be considered optional.

3. About 72 hr after initial infeetion, harvest capsids from the cells as described in Basic Protocol 1, steps 14 to 22. Freeze the clarified supernatant at −80°C in 100-µl aliquots or purify the vector stock (Support Protocols 1 and 2).

PRODUCTION OF AMPLIFICATION-INCOMPETENT VECTOR STOCKS

ALTERNATE PROTOCOL 1

For some applications, co-delivery of p16L1L2 along with the expression plasmid of interest may be undesirable. An alternative strategy is to produce an amplification-incompetent vector stock by transiently co-transfecting an expression plasmid of interest together with the packaging plasmid p16sheLL. In contrast to p16L1L2, p16sheLL lacks the SV40 *ori* and is too large to be packaged within papillomavirus capsids. Thus, when p16sheLL is co-transfected with an expression plasmid of interest, only the expression plasmid is packaged into nascent infectious capsids.

A variety of other papillomavirus types have been adapted to the "sheLL" format and are freely available to nonprofit researchers. Note that the L1 and L2 open reading frames in these plasmids have been "codon-modified" (subjected to extensive silent mutation) in order to eradicate expression-inhibitory elements present in native papillomavirus L1 and L2 genes (Leder et al., 2001). Amplification-incompetent vectors can be produced using the methods outlined in Basic Protocol 1 by simply substituting p16sheLL (or other sheLL series plasmid) for p16L1L2. See the Web page *http://home.ccr.cancer.gov/LCO/packaging.htm* for maps of available packaging plasmids.

Because of their relatively large size, sheLL series plasmids are occasionally subject to recombinant collapse during re-growth in bacteria. The chance of inadvertent recombination can be reduced by using STBL2 (Invitrogen) or other reduced-recombination bacterial strains. Alternatively, standard bacterial subcloning strains can be grown at 30°C during recovery from transforruation and during growth on selective agar plates. Growth of bacteria at 30°C tends to result in maintenance of ColE1-based plasmids at lower copy number, thus reducing the chance of recorubination. Subsequent liquid culture scale-up of a single colony at 37°C improves plasmid yield and has not resulted in detectable amounts of plasmid collapse in our hands.

BULK PRODUCTION OF PAPILLOMAVIRUS CAPSIDS

ALTERNATE PROTOCOL 2

The promiscuity of DNA packaging by HPV16 L1 and L2 applies not just to various expression plasmids, but also to cellular DNA. At the time of cell lysis, at least 90% of the proto-capsids present in the cell nucleus exist in complex with cellular DNA. In the basic protocols, most capsid/cellular DNA complexes sediment away from the vector stock during the lysate clarification step. However, if DNases are added to the cell suspension during cell lysis, capsids associated with cellular DNA are liberated with an encapsidated 8-kb linear fragment of cellular DNA (Buck et al., 2005). For applications aimed using infectious reporter capsids, the presence of "cold" (reporter-less) capsids containing cellular DNA is undesirable, since the cold capsids may compete against the infectivity reporter capsids. The infectious delivery of random fragments of 293TT cell DNA to target cells also presents a theoretical biosafety risk.

In this protocol, the addition of DNases to the cell lysate allows for recovery of capsids containing linear fragments of cellular DNA. This boosts the yield of capsids by at least 10-fold, making this approach desirable when the production of virus-like particles, rather than titerable infectious units, is the primary goal.

In some instances it may be desirable to produce L1 capsids that do not contain L2. HPV16 L1 particles can encapsidate a limited amount of DNA in the absence of L2, but are at least 10,000-fold less infectious than L1/L2 capsids. A limited seed stock for production of L1-only capsids can be generated by co-transfecting p16sheLL together with a packageable L1 expression plasmid, such as p16L1-GFP. The resulting seed stock can be used for a single-round infection of fresh 293TT cells. The infected cells will be transduced only with the L1 expression plasmid and will thus produce capsids lacking L2.

Additional Materials *(also see Basic Protocol 1)*

Benzonase endonuclease (~250 U/µl; Sigma-Aldrich or other supplier)
Plasmid Safe ATP-Dependent DNase (10 U/µl; Epicentre)
5 M NaCl

Additional reagents and equipment for production of an initial vector seed stock (Basic Protocol 1)

1. Follow Basic Protocol 1 for production of an initial vector seed stock, omitting the expression plasmid of interest and transfecting with p16L1L2 alone.
2. Amplify the vector seed stock using Basic Protocol 2. Instead of adding RNase to the cell lysate (Basic Protocol 1, step 20), add Benzonase and Plasmid Safe stocks to a final concentration of ~0.25% each. Mature the lysate for 24 hr (Basic Protocol 1, step 21).

   Benzonase is an RNA/DNA endonuclease, while Plasmid Safe is a processive exo-DNase. The two nucleases act in concert to "slice and dice" any DNA outside the protective environment of the capsid. There is enough residual ATP in the lysate to support Plasmid Safe's ATP-dependent exonuclease activity. Final nuclease stock concentrations of 0.05% to 0.1% each are also adequate for effective fragmentation of unencapsidated DNA.

3. After maturation, chill the matured lysate on ice for 5 to 10 min. Add 0.17 volume of 5 M NaCl to achieve a final NaCl concentration of ~0.85 M. Incubate on ice 10 min, mixing once or twice.

   Treating the lysate with high salt helps solubilize the lysate, facilitating the purification of capsids. It is not possible to add high salt to the lysate prior to clarification in the basic (DNase-less) protocols, because the salt would solubilize the undigested cellular DNA, rendering the lysate too viscous to handle.

4. If desired, purify capsids out of the clarified lysate using Support Protocols 1 or 2.

SUPPORT PROTOCOL 1

PURIFICATION OF VECTOR STOCKS USING OPTIPREP GRADIENTS

Although clarified cell lysates can serve as useful vector stocks, the residual Brij-58, undigested DNA, and expressed proteins of interest in the lysate may cause problems for some applications. This protocol outlines the use of ultracentrifugation to purify vector stocks. Virologists have traditionally relied on two main ultracentrifugation strategies to purify capsids: buoyant density ultracentrifugation, which typically employs CsCl solutions, and velocity ultracentrifugation, which typically employs concentrated sucrose solutions. The method described here makes use of a newer ultracentrifugal gradient medium called Optiprep (iodixanol). Optiprep is a relatively nontoxic iodinated di-hexanol compound used clinically as an injectable X-ray contrast agent. It has the useful feature of being both high-density (like CsCl solutions) and high-viscosity (like sucrose solutions). It is thus possible to employ Optiprep for velocity and buoyant density ultracentrifugation simultaneously in a single tube. The clarified capsid-containing cell lysate is layered on top of a preformed Optiprep step-gradient. At the top of the gradient, the relatively large size of the capsids allows them to rapidly sediment through the upper portion of the gradient while other, smaller diameter solutes in the lysate traverse the gradient slowly. Once the capsids reach the middle portion of the gradient, their migration is dominated by buoyancy. This allows separation of empty capsids from DNA-containing capsids.

Ultracentrifugation is a relatively advanced laboratory technique and should not be attempted without the guidance of an experienced operator. Although Optiprep purification is a highly effective way to purify papillomaviral vector stocks, the simpler gel filtration strategy described in Support Protocol 2 also gives reasonable purity and would be a

better choice for investigators lacking easy access to the equipment or expertise required for ultracentrifugation.

The protocol describes the use of a Beckman SW-55 rotor. Other types of rotors can be used successfully, although some adjustment of spin time may be necessary. An SW32 rotor at 32,000 rpm (125,000 × *g*) for 5.75 hr or an SW40.1ti rotor at 40,000 rpm (200,000 × *g*) for 4.75 hr work reasonably well.

Additional Materials *(see also Basic Protocol 1)*

46% (v/v) Optiprep/DPBS (see recipe)
DPBS/0.8 M NaCl (prepare by adding 0.15 volume of 5 M NaCl to DPBS)

Thin-wall 1/2 × 2–in. Polyallomer tubes (Beckman, no. 326819) or appropriate ultracentrifuge tubes
3-ml syringe fitted with a 2-in. or longer large-bore (~16-G) needle
Parafilm
Ultracentrifuge
Beckman SW-55 ultracentrifuge rotor (or other swing-bucket rotor)
Ring stand with tube clamp
Siliconized collection tubes
~25-G needle

Prepare a 27%, 33%, and 39% Optiprep step gradient by underlayering

1. Dilute 46% Optiprep/DPBS to 27%, 33%, and 39% using DPBS/0.8 M NaCl

   Although our laboratory has traditionally used DPBS as a dilution medium, Optiprep gradients prepared using plain PBS (lacking $CaCl_2$, $MgCl_2$, and KCl) are probably equally effective. Use of high (0.8 M) NaCl concentrations in the gradient results in more effective separation of the capsids from cellular proteins, but gradients prepared with physiologic (0.15 M) NaCl concentrations can give acceptable results.

2. Set up a minimum of two ultracentrifuge tubes: one for the clarified lysate, one for balance.

3. Using a pipet, add 1.5 ml of 27% Optiprep to each tube.

   A gradient with three 1.5 ml steps will leave enough room for about 0.5 ml of lysate. Up to 3 ml of lysate can be loaded into a single tube by shortening the gradient to 0.7 ml per step.

4. Load the 3 ml syringe with 33% Optiprep. Eject any bubbles. Insert the syringe until the needle is gently touching the bottom of the tube. Gently eject 1.5 ml of 33% Optiprep beneath the 27% step.

5. Remove the syringe from the tube and eject residual Optiprep (or use a fresh syringe). Repeat step 4 with 39% Optiprep.

6. Cover the tubes with Parafilm and incubate 1 to 4 hr at room temperature.

   Letting the gradients stand at room temperature allows the steps to partially diffuse into one another. The partly linearized gradient results in a slightly better-focused capsid band.

Perform the ultracentrifugation

7. Gently layer the clarified cell lysate (or DPBS in the balance tube) onto the top of the gradient. Seat the tubes into opposing rotor buckets.

8. Add DPBS/0.8 M NaCl to the top of the tube until the meniscus is above the surrounding metal rim of the bucket. Balance buckets to within 5 mg.

   It is critical that the tubes be filled to near the rim and that the buckets be balanced. Underfilled tubes can collapse, resulting in imbalances. Imbalances can result in destruction of the ultracentrifuge rotor and containment drum.

9. Hang the buckets on the rotor, being sure that both hooks catch. Spin 3.5 hr at 234,000 × *g* (50,000 rpm for an SW-55ti rotor), 16°C.

Fractionate the gradient

10. Remove the tube from the bucket and place in the tube clamp.

    An opalescent band of capsids may be visible roughly a third of the way up the gradient. Visualization of the band is easier if a dark object is held behind the tube.

11. Set up and uncap twelve siliconized collection tubes. Position the collection tubes beneath the ultracentrifuge tube.

12. Puncture the bottom of the ultracentrifuge tube slightly off center using a 25-G (or similar diameter) needle. Rock the needle in a circular motion to slightly expand the hole.

    Use of sharp objects when handling biohazardous agents obviously presents some risk. This step of the protocol should be performed very carefully. Discard the needle directly into an appropriate sharps container (do not attempt to re-cap the needle).

13. Collect a single large first fraction until the rate of drops begins to increase (~750 µl collected). For each subsequent fraction, collect 5 to 8 drops (~200 µl) per fraction. Repeat for twelve fractions. The fractions should encompass the bottom 1/2 to 2/3 of the gradient. Discard the top portion of the gradient.

    The first few drops will emerge very slowly.

14. Screen gradient fractions for the presence of capsids (Support Protocol 3). Pool appropriate fractions, divide into 100-µl aliquots, and store at −80°C.

    Optiprep is nontoxic to cell cultures and can be injected into mice without apparent negative effects. It is therefore not necessary to exchange capsids out of Optiprep in most cases. If removal of Optiprep (or the high salt present in the gradient fractions) is desired, Support Protocol 2 presents an effective method for exchanging capsids into other buffers. Note that Optiprep is resistant to dialysis (see Support Protocol 4).

SUPPORT PROTOCOL 2

PURIFICATION OF VECTOR STOCKS USING AGAROSE GEL FILTRATION

The simple size-exclusion chromatography (gel filtration) purification method described in this protocol makes use of the fact that papillomavirus capsids are larger than nearly all other macromolecular complexes in the clarified lysate. The agarose beads used in the protocol have a pore size slightly smaller than the papillomavirus capsid. Thus, papillomavirus capsids are excluded from the beads and run rapidly through the void volume of the column, while other solutes in the cell lysate take a slower, circuitous path through the bead matrix. Although the purity of gel filtered capsids is not quite as high as for Optiprep-purified capsids (Support Protocol 1), gel filtration does effectively remove most contaminants and is safer and less technically demanding than ultracentrifugal methods. Agarose gel filtration can also be used as a buffer exchange method for removing Optiprep or other solutes from purified vector stocks.

Additional Materials *(see Basic Protocol 1)*

DPBS-BSA (see recipe)
DPBS/0.5 M NaCl (prepare by adding 0.075 volume of 5 M NaCl to DPBS)
Benzonase nuclease (Sigma; optional)
0.05% (w/v) NaN_3 or other preservative

Vacuum source (optional)
Bell jar or side-arm vacuum flask for degassing solutions (optional)
Ring stand with clamp
5 ml gravity-flow columns with caps and frits (Pierce or other supplier)

1- or 5-ml pipet
2% (w/v) agarose beads (50- to 150-μm diameter; Agarose Bead Technologies, no. A-1020-S) *or* 1.4% agarose beads (Bioscience Beads)
Parafilm

Prepare an agarose gel filtration column

1. De-gas the DPBS-BSA solution by exposure to vacuum.

   This step is optional. See the package insert that comes with Pierce gravity-flow column kit for additional information.

2. Clamp the column to a ring stand. Put the bottom cap on and add 5 ml of DPBS/0.5 M NaCl.

3. Remove the bottom cap to eject any bubbles. Recap and add more DPBS/0.5 M NaCl. Fill to near the top of the column.

4. Float a frit on the surface. Gently tap the frit to dislodge any air bubbles. Tap frit down to the bottom of the column using a 1- or 5-ml pipet (or the serum separator provided with the column kit).

5. Remove the bottom cap and drain out most of the fluid.

6. Suspend the agarose beads by gently swirling and inverting the bottle. Pour bead slurry into the column. Fill the column to the rim.

7. Remove the bottom cap. Partially exchange the beads into room-temperature DPBS-BSA by repeatedly allowing the column to drip to near dryness then pouring on more DPBS-BSA.

8. Replace the bottom cap. Cover the top of the column with Parafilm. Suspend beads by repeated gentle inversion of the column. Return the column to the clamp and allow blocking and settling overnight at room temperature.

   Preblocking the column overnight with 1% BSA reduces capsid aggregation by blocking nonspecific protein binding sites on the bead matrix and column walls. Although it is generally not as effective as BSA, Tween 80 at a final concentration of 0.01% (v/v) can also be used as a blocking agent. Like BSA, the detergent partially prevents nonspecific interactions that can lead to capsid aggregation (Shi et al., 2005). Tween 80 is a relatively mild detergent and can be added to cell cultures at final concentrations of up to 0.1% (v/v) without noticeable toxicity. The use of high (0.5 M) NaCl concentrations also helps block nonspecific interactions that can lead to capsid denaturation and aggregation.

   It is important to allow the beads to settle slowly after equilibration with room temperature (preferably de-gassed) buffer. Chilled solutions contain more dissolved oxygen, which can form bubbles upon re-warming to room temperature. Trapped bubbles create disruptive vortexes in the liquid flow through the gel bed.

9. Remove Parafilm. Float a frit on the fluid surface and gently tap down to within a few mm of the bed surface.

10. Remove the cap from the bottom of the column. Wash the column with at least 10 column volumes of DPBS/0.5 M NaCl.

    It is helpful to use the conical reservoir included with the Pierce column kit. The washing process may take as long as long as an hour. Washing with only 4 column volumes may result in contamination of the capsids with residual BSA. The gel bed will compact some during the washing. Tap the frit down to within a few millimeters of the bead surface. Do not compress the gel bed. After washing, the column is ready to use.

Perform gel filtration

11. *Optional:* If capsids are being purified out of crude cell lysate (Basic Protocols 1 and 2) add 1 µl of Benzonase nuclease and incubate 10 to 30 min at 37°C to digest any residual unencapsidated DNA.

    It may be beneficial to adjust the salt concentration of the crude lysate to 0.5 M NaCl after Benzonase digestion.

    Although the addition of Benzonase is optional, it helps improve the purity of the stock by digesting large DNA molecules that, like capsids, are too large to enter the pores in the agarose beads. A small fraction of cellular DNA-associated capsids will remain present in the clarified lysate. The addition of Benzonase will therefore liberate some capsids carrying 8-kb linear fragments of cellular DNA. Most of the Benzonase will be removed by the gel filtration process. If capsids have been purified using an Optiprep gradient, they have already been separated from unencapsidated DNA and addition of Benzonase is unnecessary. Also note that Benzonase is inhibited by high-salt concentrations (such as the 0.8 M NaCl used for Optiprep gradients).

12. Add 0.5 ml or less (i.e., less than 1/10 of the agarose bed volume) of clarified lysate (or capsids in Optiprep) to the washed agarose gel filtration column.

13. Apply 0.25 ml of DPBS/0.5 M NaCl to the top of the column. Collect column eluate in a siliconized 1.5-ml tube. Repeat this for a total of 12 0.25-ml fractions.

    See notes for step 13 of Basic Protocol 1 for information about use of siliconized tubes.

14. Screen fractions for encapsidated DNA, as described in Support Protocol 3.

    A peak of purified capsids usually emerges from the gel filtration column at about 1/3rd of the column volume. In other words, typically fraction 7, if 0.25 ml fractions were collected. A histogram of capsid content may be spread over as many as four fractions.

15. Regenerate columns for re-use by washing the column with 10 column volumes of DPBS/0.5 M NaCl, then exchanging into DPBS-BSA supplemented with 0.05% (w/v) NaN_3 or other preservative. Store the column at room temperature for several days.

    Columns can be stored for longer periods at 4°C, but oxygen bubbles may form in the column upon re-warming. If bubbles form, remove the top frit and resuspend the beads by inverting the column.

SUPPORT PROTOCOL 3

SCREENING FRACTIONS FOR THE PRESENCE OF CAPSIDS

If enough capsids are present in the starting lysate, it is possible to screen Optiprep or agarose gel filtration fractions by simple BCA protein assay (Pierce). Screening fractions for the appearance of L1 (55 kDa) in stained SDS-PAGE gels (see *UNIT 6.1*) is also feasible. If SDS-PAGE is used for screening, fractions containing L1 and peak amounts of ~15 kDa histone bands (indicating the presence of encapsidated DNA) should be chosen. Optiprep has a strong light absorbance peak at ~250 nm. This makes it impossible to screen Optiprep fractions using UV absorbance.

If the papillomaviral vector carries a convenient reporter gene, fractions can also be screened by titration of infectivity (Support Protocol 4). If siliconized tubes (see note for step 13 of Basic Protocol 1) have been used for fraction collection, stock titer is generally stable at 4°C for 48 hr.

The fraction screening technique described below is based on the visualization of encapsidated DNA and has the advantage of rapidly identifying fractions containing even relatively low levels of encapsidated plasmid. For more information on agarose gel electrophoresis see Voytas (2000).

Additional Materials *(see Basic Protocol 1)*

Electrophoresis-grade agarose
Tris-acetate-EDTA (TAE) electrophoresis buffer (or other agarose gel electrophoresis buffer, see *APPENDIX 2A*)
Phosphate-buffered saline (*APPENDIX 2A*), optional
Proteinase K (e.g., Qiagen, no. 19131)
0.5 M EDTA
10% SDS
DNA loading dye (Voytas, 2000)
DNA marker ladder (kilobase-range; Invitrogen or other supplier)
1 to 10 ng sample of supercoiled p16L1L2 and/or 1 to 10 ng of the expression plasmid of interest
SYBR Green-I (Invitrogen/Molecular Probes or other supplier)

UV (or blue light) gel documentation imaging device
16- × 16–cm tray
12-well combs
Agarose gel electrophoresis apparatus (see *APPENDIX 3A*)

1. Add 0.8 g of electrophoresis-grade agarose to 80 ml of TAE buffer. Melt by microwaving.

2. Cast molten agar into a 16- × 16–cm tray with one or two 12-well combs. Allow gel to cool.

   Other sizes of casting tray can be used. It is helpful if the gel is relatively shallow (<5 mm thick). SYBR Green-I stain penetrates the gel relatively slowly. If the sample extends up to the surface of the gel, the shorter diffusion distance allows for faster staining.

3. Make a master mix with 100 µl of water (or PBS) and 5 µl each proteinase K, 0.5 M EDTA and 10% SDS. Distribute 5 µl of master mix to an appropriate number of microcentrifuge tubes. Add a 15 µl sample of each gradient or column fraction to separate tubes. Vortex the tubes then incubate 10 to 30 min at 56°C.

   Proteinase K digestion liberates the encapsidated plasmid DNA from the capsid/histone complex. This allows the encapsidated DNA to migrate properly during electrophoresis.

4. Add 5 µl of DNA loading dye to each tube. Load 20 µl of each sample into the gel. Include a lane with 100 ng of DNA marker ladder (i.e., ~10 ng of DNA per ladder band). Also include a 1 to 10 ng sample of supercoiled p16L1L2 and/or 1 to 10 ng of the expression plasmid of interest. Run the gel at 120 V for ~60 min (or an appropriate voltage and time for the electrophoresis device being used).

   The presence of Optiprep and/or salt in the sample may distort the migration of the loading dye, but migration of the DNA is not dramatically affected. It is possible to purify encapsidated DNA away from the proteinase K-digested fraction material using silica spin columns, for example Qiaquick PCR Purification columns (Qiagen, no. 28104). The purified DNA can then be positively identified by digestion with restriction enzymes prior to electrophoresis.

5. Stain the gel for 20 min in SYBR Green-I diluted 1:10,000 in TAE.

6. Image the gel using an appropriate imaging device (see SYBR Green-I package insert).

   The encapsidated plasmid should be predominantly supercoiled, although some nicked and linearized species may appear, particularly if Benzonase was added to the sample (step 1 in Support Protocol 2). Benzonase liberates capsids containing linear fragments of cellular DNA, which will appear as a wide ~8-kb band. See Alternate Protocol 2 for details about capsids containing cellular DNA.

7. Choose fractions with peak plasmid content. Pool the fractions, divide into 100-µl aliquots, and freeze at −80°C.

SUPPORT PROTOCOL 4

CONCENTRATION OF VECTOR STOCKS

It should not generally be necessary to concentrate capsid stocks. However, it is possible to do so using Pierce Slide-A-Lyzer dialysis cassettes and Slide-A-Lyzer Concentrating Solution, following manufacturer's instructions. Unfortunately, Optiprep does not readily pass through dialysis membranes. Therefore, capsids must be exchanged out of Optiprep (using gel filtration, Support Protocol 2) prior to concentration. Addition of high NaCl concentrations (0.5 M to 1.0 M final) and Tween 80 (0.001% – 0.01% (v/v)) to the sample prior to concentration will help prevent capsid aggregation during the concentration process (see notes for Support Protocol 2, step 8). If necessary, the NaCl and Tween 80 can then be dialyzed away after concentrating the stock.

SUPPORT PROTOCOL 5

TITERING THE INFECTIVITY OF PAPILLOMAVIRAL VECTOR STOCKS

Authentic papillomaviruses are released into the environment by the spontaneous disruption of cells at the surface of stratified squamous epithelia. This process, referred to as desquamation, is a normal feature of healthy skin and mucosal surfaces. Perhaps as a consequence of their exploitation of desquamation as a release mechanism, papillomaviruses are not known to employ an active cell-lysis program, as do other nonenveloped viruses. Thus, classical viral plaque assays that rely on viral lysis of infected cells are not useful for titration of papillomaviral vectors.

If a fluorescent protein is expressed by one or more of the packaged plasmids, the stock can readily be titered by flow cytometric analysis of cells treated with varying doses of vector stock (see *Current Protocols in Cytometry*). Intracellular immunostaining [for example, using a Cytofix/Cytoperm Kit (BD Biosciences)] coupled with flow cytometry may also be a feasible method for titering the expression of proteins of interest. If flow cytometry is not available, assessment of fluorescent protein expression (or fluorescent staining of a protein of interest) can be performed using fluorescence microscopy. Some plasmids, for example p16L1-GFP, express enhanced green fluorescent protein (GFP) under control of the SV40 promoter, while a protein of interest (in this case HPV16 L1) is expressed from the stronger EF1α promoter. 293TT cells are useful for titering vector stocks because the incoming plasmid is rapidly replicated to high copy number by SV40 T antigen, thus promoting high-level expression of proteins or reporter genes of interest.

Typically, adding 1 µl of vector stock to 10^6 293TT cells will result in bright fluorescence of nearly 100% of the cells, if GFP is used as a reporter. The infectability of other cell lines varies and should be tested empirically, preferably using a reporter plasmid with GFP under control of a strong promoter, such as CMV immediate early promoter (e.g., pCIneo-GFP) or human EF1α promoter (e.g., pfwB). See Commentary for further information on selecting reporter plasmids.

Materials

Cells, e.g., 293TT
DMEM-10
Vector stocks to be tested
Dulbecco's phosphate-buffered saline (DPBS) supplemented with 1% (v/v) FBS
ι-carrageenan (e.g., Sigma, no. C4014)

24-well plate
2.5-µl pipettor
1000-µl pipettor
Fluorescent microscope

1. Plate 1×10^5 293TT cells (or other cell type of interest) per well in a 0.5 ml volume of DMEM-10 in a 24-well plate. Incubate overnight in a humidified 37°C, 5% CO_2 incubator.

   Cells should be ~25% confluent.

2. Perform four 10-fold serial dilutions (i.e., 1:10 to 1:10,000) of the papillomaviral vector stock, for example by serially adding 2 µl of stock to 18 µl of DMEM-10.

3. Using a 2.5 µl pipettor, add 1 µl of diluted virus stocks to individual wells. Include a well of mock-treated cells. Perform the titration in replicate wells. Include a negative control by adding the papillomavirus-neutralizing agent ι-carrageenan to the cell culture at a final concentration of 1 µg/ml just prior to virus inoculation (Buck et al., 2006). Incubate cells 48 hr in a humidified 37°C, 5% CO_2 incubator.

   It is not necessary to change the medium on the cells.

   Papillomavirus infectious entry is a relatively slow process. 48 hr represents an adequate time period for infection of 293TT cells, but peak infection rates may occur at closer to 72 hr.

4. Remove the supernatant and trypsinize (as described in step 4 of Basic Protocol 1, using a few drops of trypsin per well) infected cells. Using a 1000 µl pipettor, thoroughly resuspend the cells in 0.5 ml DPBS supplemented with 1% FBS. Subject cells to flow cytometric analysis. Alternatively, count the fraction of cells expressing GFP using a fluorescent microscope.

5. To analyze GFP expression by flow cytometry, adjust an FL1 marker window to exclude 99.8% of the mock-transduced cells. Choose a vector stock dilution showing between 1% and 25% of cells FL1-positive. Use the formula [1000 µl/ml] × [stock dilution] × [200,000 cells at time of infection] × [fraction of cells FL1-positive] to calculate the number of infectious units per ml.

   Typical seed stocks for most GFP plasmids should contain at least 3×10^9 infectious units per ml.

REAGENTS AND SOLUTIONS

Use deionized, distilled water in all recipes and protocol steps. For common stock solutions, see ***APPENDIX 2A****; for suppliers, see* ***SUPPLIERS APPENDIX****.*

Brij-58, 10% (w/v)

Dissolve Brij-58 (polyoxyethylene 20 cetyl ether) at 10% (w/v) in Dulbecco's phosphate-buffered saline (DPBS; e.g., Invitrogen, no. 14040-141). Store up to 1 month at 4°C.

Dissolve the Brij-58 by gently rocking the tube at room temperature for an hour or by storing overnight at 4°C. It is not necessary to filter the solution. The gradual appearance of a cloudy layer near the surface of the stored solution is normal. Mix the solution by gentle inversion of the tube prior to use.

DPBS-BSA

Combine the following in a 50-ml tube:
23 ml of Dulbecco's phosphate-buffered saline (DPBS; e.g., Invitrogen, no. 14040-141)
1.75 ml of 5 M NaCl
0.25 g of bovine serum albumin fraction V (BSA)
Filter using a 0.45-µm filter device (optional)

Dissolve the BSA by rocking at least 30 min. Solution can be kept overnight at room temperature.

DPBS-Mg

100 ml Dulbecco's phosphate-buffered saline (DPBS; e.g., Invitrogen, no. 14040-141), sterile
475 µl of sterile-filtered 2 M $MgCl_2$
1 ml of 100× antibiotic/antimycotic stock (Invitrogen, no. 15240062 or comparable broad-spectrum antibiotic from other suppliers)

Solution is stable for several months stored at 4°C. Keep sterile.

Optiprep/DPBS 46%

30.7 ml of 60% iodixanol solution (Optiprep; Sigma-Aldrich or other supplier)
4 ml of 10× PBS (Invitrogen or other supplier)
5.2 ml of 5 M NaCl
18 µl of 2 M $CaCl_2$
10 µl of 2 M $MgCl_2$
84 µl of 1 M KCl
Store up to one month at room temperature

It is helpful to briefly mix the solution after addition of the 10× PBS to avoid formation of $CaPO_4$ precipitates upon addition of the $CaCl_2$ stock.

Optiprep (60% iodixanol solution) is available from Sigma-Aldrich and other suppliers. Although the term Optiprep is technically a trade name for a 60% aqueous solution of iodixanol, this unit uses the term Optiprep colloquially as a synonym for iodixanol in order to be consistent with other published literature.

COMMENTARY

Background Information

Viral vectors are useful for efficient introduction of genes into mammalian cell types that are difficult to transfect. There is also substantial interest in the development of viral vectors for use as genetic vaccine vehicles or for various in vivo gene therapy applications. Papillomaviral vectors have a number of appealing features, such as their relatively tractable production and purification, which should make them useful as general-purpose gene delivery vehicles. The papillomaviral vectors described in this unit are a recent addition to the viral vector toolbox. To date, the vectors have been used primarily for analysis of the biology of papillomaviruses. However, the vector system also has utility for high-efficiency gene delivery to cultured cell lines and represents a promising new tool for in vivo gene delivery and genetic vaccination.

Other viral vectors, such as retroviral, adenoviral, or AAV-based systems, require that a gene of interest be flanked by viral packaging signals or other elements critical for production of infectious virions. A unique feature of papillomaviral vectors is that the packaging of plasmids within the cell nucleus is highly promiscuous, such that a variety of commercially available mammalian expression plasmids carrying the SV40 promoter [which contains the SV40 origin of replication (*ori*)] can be packaged efficiently. For example, pCDNA3.1 (Invitrogen) and pCIneo (Promega) plasmids expressing enhanced green fluorescent protein (GFP; BD Clontech) can be converted into purified papillomaviral vector stocks with titers of up to 10^{11} GFP-transducing units per ml.

Critical Parameters

This unit describes the production of papillomaviral vector stocks by two different methods: by direct transfection of cells (Basic Protocol 1) and infectious amplification of the transfection-derived stock (Basic Protocol 2). The yield of the initial transfection-derived stock is likely to be sufficient for most in vitro applications. The higher yields of propagated vector stocks may be appealing for in vivo studies, which generally require higher infectious doses.

At the outset of the protocol, a decision must be made whether to produce an amplification-competent or -incompetent vector stock (see Fig. 26.1.1). Amplification-competent stocks utilize p16L1L2, which carries the SV40 origin of replication and is small enough to be packaged into capsids. The p16L1L2 plasmid can be used to co-propagate expression plasmids of interest as

part of a viral swarm. Although this allows high-yield amplification of the vector stock, it has the drawback that the p16L1L2 plasmid will be co-delivered to target cell populations together with the expression plasmid of interest. This problem can be avoided by production of an amplification-incompetent vector stock, using p16sheLL in place of p16L1L2 (Fig. 26.1.1). p16sheLL does not carry an SV40 *ori* and is too large to become packaged. Infectious titer yields for p16sheLL-derived stocks are typically at least several-fold lower than for p16L1L2 transfection-derived stocks, but for most applications the reduced titer yield should not be a major impediment.

For reasons that are not yet clear, some expression plasmids are more amenable to packaging into papillomaviral vectors than others. In some instances, packaging may be impaired by the cytotoxic effects of high-level over-expression of a gene of interest in the producer 293TT cells. Even for relatively nontoxic genes, the plasmid context can affect titer yield. For example, use of pEGFP-N1 (Clontech) results in about ten-fold lower GFP-transducing titer yield compared to vector stocks made using pCDNA3.1-GFP or pCIneo-GFP. The suitability of a given plasmid for packaging should be tested empirically in an initial small-scale transfection-based stock (Basic Protocol 1). If the infectious titer (Support Protocol 4) of stocks made using a particular plasmid of interest is poor, it may be worth considering moving the gene of interest into a different expression plasmid backbone.

Plasmids using the human elongation factor 1-α (EF1α) promoter, for example the GFP expression plasmid pfwB or the L1-expression plasmid p16L1-GFP, have generally worked well in our hands. Variants of these EF1α promoter-based expression plasmids, such as phGf or pGwf (see *http://home.ccr.cancer.gov/Lco/support.htm* for maps), have been adapted for the Gateway cloning system (Invitrogen). p16L1-GFP and the Gateway-adapted variants also carry GFP under control of the SV40 promoter, which facilitates titration of the infectivity of the vector stock.

293TT cells rapidly replicate plasmids carrying the SV40 *ori* to high copy number in the cell nucleus. In general, it appears that this over-replication only modestly enhances the expression of genes under control of the human cytomegalovirus immediate early promoter (CMV promoter). In contrast, most genes under control of the EF1α promoter exhibit a more pronounced dose-response relationship between plasmid copy number and expression level. For some genes, for example HPV16 L1, expression from the EF1α promoter can yield milligram amounts of protein from a single flask of 293TT cells. If the ultimate goal is the high-level production of a protein of interest in 293TT cells, the EF1α promoter is probably a better choice than the CMV promoter.

Plasmids lacking the SV40 *ori* can be packaged using direct transfection (Basic Protocol 1), but titer yields for SV40 *ori*-negative plasmids are generally a minimum of 10-fold lower than comparable plasmids with the SV40 *ori*. The lack of an SV40 *ori* also precludes amplification of the vector stock (Basic Protocol 2). Addition of a previously reported minimal SV40 *ori* (construct pC139H; Okuley et al., 2003) to a plasmid of interest effectively enhances conversion of the plasmid into a papillomaviral vector stock.

Efficient transfection of 293TT cells during the production of a seed stock is a critical parameter of the production system. In our hands, the transfection reagent Lipofectamine 2000 is reliable, provided the cell density is relatively low at the time of transfection. However, Lipofectamine 2000 is very expensive and other, less expensive transfection methods, such as calcium phosphate (see *UNIT 20.3*) or PEI (see Choi et al., 2007), can be used to transfect 293TT cells, if cost is of primary concern.

A commercial version of the 293TT cell line, known as 293FT, is available from Invitrogen (no. R700-07). 293FT cells appear to perform reasonably well for production of transfection-derived papillomaviral vector stocks, but for unknown reasons they appear not to perform as well for titration or infectious amplification of stocks. The widely available 293T line, on which the 293TT line is based, expresses very low levels of SV40 T antigen (Fu and Manley, 1987) and therefore performs poorly for production of papillomaviral vectors.

Papillomaviral vectors can infect cell lines derived from a wide range of tissue types. However, the efficiency of infection can vary from line to line within a given tissue type and cell lines should be tested to determine their infectability. Ideally, cell infectability studies should be performed using flow cytometric analysis of cells infected with papillomaviral vectors carrying GFP under control of a strong promoter such as CMV or EF1α.

Biosafety

Like other types of mammalian gene delivery vehicles, there is a risk that papillomaviral vectors could endanger laboratory personnel if handled improperly. Papillomaviral vectors are a relatively new gene delivery technology and have not yet been subjected to controlled in vivo safety testing. One theoretical biosafety risk is that vector-delivered plasmids, or random fragments of 293TT cell DNA (see introduction to Alternative Protocol 2), might be oncogenic in human cells. Investigators should seek approval from an appropriate institutional biosafety committee (or comparable body within the investigator's institution) prior to engaging in the production of viral vectors. It is important to note that papillomaviruses are thought to be able to withstand a wide range of temperature and pH conditions, and remain infectious after desiccation (Roden et al., 1997). Thus, environmental exposure to papillomaviral vectors may be of greater concern than for other types of viral vectors.

An additional potential risk posed by papillomaviral vectors is that the L1/L2 packaging plasmid could, in principle, recombine with 293TT genomic DNA segments encoding SV40 T antigen. Such recombination events could result in the formation of an entirely novel autonomous tumor virus. It is important to note that SV40 T antigen cannot drive efficient replication of SV40 ori^+ DNA in murine cells (Smith et al., 2002). It is therefore unlikely that mice would be permissive for in vivo amplification of SV40 T antigen-based viruses.

Several safety modifications are currently under development in our laboratory. A 293 cell line carrying a T antigen mutant with diminished capacity to inactivate the pRb and p53 tumor suppressor genes (Cooper et al., 1997) may become a useful, theoretically safer, alternative to 293TT cells. The co-propagation of separate L1 and L2 expression plasmids (together with expression plasmids of interest) might also be an effective method for reducing the theoretical risk of the development of recombinant autonomous tumor viruses.

Troublesbooting

A critical first step in the production process is efficient transfection of the 293TT cells. Production of a GFP-expressing vector stock allows easy flow cytometric or fluorescent microscopic analysis of the transfected vector-producing cells to determine transfection efficiency. A minimum of 75% of the cells should be brightly GFP-positive if the transfection has worked well. The harvested cell pellet should contain enough GFP that it appears green to the naked eye.

The initial health of the cells is a critical factor in achieving good transfection efficiency. 293TT cultures should not be allowed to become confluent or form regions of piled up cells. It is also essential that the cells be preplated at a low enough density to be <50% confluent at the time of transfection.

The optimal dose of vector stock to use for amplification can vary substantially. The guidelines given in Basic Protocol 2 should result in a very high multiplicity of infection (i.e., many infectious events for each cell in culture) for a good vector stock. Lower-titer stocks might require a higher dose to ensure that both p16L1L2 and the expression plasmid of interest are co-delivered to a majority of cells in culture. Small-scale tests using 6-well plates or 25-cm^2 flasks can be performed to determine optimal stock dose for the amplification step. The time of harvesting the infected cells can also be varied. Again, such tests are facilitated by the presence of an easily scored reporter gene, such as GFP.

Anticipated Results

The initial transfection-based production described in Basic Protocol 1 should yield at least 100 µl of clarified cell lysate with at least 3×10^9 GFP-transducing units per ml. The great majority of the infectious titer should be recoverable after purification by ultracentrifugation or gel filtration, although the purification may dilute the stock somewhat. The subsequent amplification of the stock (Basic Protocol 2) should yield at least 300 µl of clarified lysate with at least 2×10^{10} GFP-transducing units per ml.

Time Considerations

293TT cells can be slow to attach and recover after thawing. It may take more than a week to establish the culture at adequate health for efficient transfection.

Attempts to incubate 293TT cells with Lipofectamine 2000/DNA complexes overnight often results in unacceptable levels of cytotoxicity. It takes some planning to accomplish the 6-hr incubation of the cells with the lipid/DNA complexes, as suggested in Basic Protocol 1, during an 8-hr workday.

Basic Protocols 1 and 2 can be performed in series and still accommodate weekends, provided the procedure is begun on a Monday and the feeding step for the infected amplification culture (Basic Protocol 2, step 3) is omitted. From start to finish (including titration of the amplified stock) the two protocols take 10 days to accomplish in series.

Although crude cell lysates should not be frozen prior to maturation (see notes for step 21 of Basic Protocol 1), clarified crude vector stocks withstand freeze-thaw well. This represents a reasonable stopping point prior to purification of the stock. With some advance planning, it is possible to perform Optiprep purification (Support Protocol 1) in a single day.

The infectious entry process for papillomaviruses is quite slow and asynchronous compared to many other virus types. For most cell types, harvesting the titration (Support Protocol 5) 3 days post-infection results in higher apparent titers. Support Protocol 5 suggests a shorter 48 hr period of incubation primarily in the interest of saving time.

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Internet Resources

http://home.ccr.cancer.gov/LCO/

The Laboratory of Cellular Oncology maintains this website listing plasmid maps and pseudovirus-related technical protocols.

http://www.axis-shield.com/densityhome/density/dapp.htm

Axis-Shield offers a useful handbook containing information about the use of Optiprep.

http://www.invitrogen.com/content/sfs/productnotes/F_051025_MammalianExpressionVectors-TS-TL-MKT-HL.pdf

Invitrogen offers a brochure comparing various commonly-used mammalian promoters.

http://www.cdc.gov/od/ohs/pdffiles/4th%20BMBL.pdf

The Centers for Disease Control and Prevention's handbook entitled "Biosafety in Microbiological and Biomedical Laboratories" discusses procedures for the handling of biohazardous substances.