



# Houston Forensic Science Center

Forensic Analysis Division - Toxicology

## Immunoassay Batch Review Checklist

<b>Batch Date:</b> 02/17/2016		<b>Analyst Review</b>	<b>Technical Review</b>
Worklist	Item tested written for each case	✓	✓
	Lot numbers for controls listed	✓	✓
	Pipette(s) used listed	✓	✓
Data	Verify "Immunoassay Batch Report" sheets have correct method and KIT# for each assay	✓	✓
	Verify % CV of Negative control	✓	✓
	Verify % Binding of Positive control	✓	✓
	Verify HIGH controls were run after every 10 samples and at end of the batch	✓	✓
	Verify absorbance readings against raw data	✓	✓
	Verify "Results" against raw data	✓	✓
	Verify "Results" against the "Immunoassay Batch Summary Report"	✓	✓
Batch QC Data Worksheet	Review batch date and analyst	✓	✓
	Review control lot numbers against worklist	✓	✓
	Review kit lot numbers against "Immunoassay Batch Report" sheets	✓	✓
	Review pipette(s) listed against worklist	✓	✓
All comments and/or strikethroughs, if any, initialed/signed		N/A	n/a
All pages initialed/signed		✓	✓
All pages have date of analysis		✓	✓

### Analyst Review

Andrea  
Gooden

Initials/Date:

Digitally signed by Andrea Gooden  
DN: cn=Andrea Gooden, o=HFSC,  
ou=FAD,  
email=AGooden@Houstonforensicscienc  
e.org, c=US  
Date: 2016.02.19 15:31:52 -06'00'

### Technical Review

Tanuja  
Sathiraj

Initials/Date:

Digitally signed by Tanuja Sathiraj  
DN: cn=Tanuja Sathiraj, o, ou,  
email=tsathiraj@houstonforensics  
cience.org, c=US  
Date: 2016.03.02 08:38:56 -06'00'



# Houston Forensic Science Center

Forensic Analysis Division - Toxicology

## Immunoassay Batch QC Data

**Batch Date:** 02/17/2016

**Analyst:** Andrea Gooden

Digitally signed by Andrea Gooden  
DN: cn=Andrea Gooden, o=HFSC, ou=FAD,  
email=A.Gooden@Houstonforensicscience.org,  
c=US  
Date: 2016.02.19 15:28:53 -0600

**Matrix:**  BLOOD  URINE

**Pipette(s):** 2339 3263

**Phosphate Buffer Saline Lot Number:** 01152016-B

### Control Lot Numbers:

**Blank** E24906  
**Negative** 070715-LC  
**Calibrator** 10222015-PC  
**High** 10222015-HC

**Oxycodone:**  
**Negative** 07072015-LC-5  
**Calibrator** 06222015  
**High** 10222015-OH

### Kit Lot Numbers:

**11-nor-9-carboxy-THC** EK13462  
**Opiates** EK13319  
**Phencyclidine** EK13322  
**Methamphetamine** EK13516  
**Benzoylcegonine** EK13059  
**Benzodiazepines** EK13286

**Barbiturates** EK13110  
**Amphetamine** EK13421  
**Carisoprodol** EK13129  
**Methadone** EK13090  
**Zolpidem** EK13573  
**Oxycodone** EK13476

### Comments:

ELISA Kits THC-13 and Oxycodone-4B were opened and verified on this batch



Alcohol/Toxicology  
Work List for Andrea Gooden / Tox Screening

2/17/2016

Priority	Lab Case# / Item#	Description	Results
			02/17/2016-ASH
	068234615 1.1	2015-08265 4 1 Blood - Child Item	
	154543815 1.1	2015-16413 2 2 Blood - Child Item	
	154756115 3.1	2015-16623 3 2 Blood - Child Item	
	155052615 1.1	2015-16604 2 2 Blood - Child Item	
	155457715 1.1	2015-16611 2 2 Blood - Child Item	
	155493415 1.1	2015-16601 2 2 Blood - Child Item	
	155498715 1.1	2015-16617 2 2 Blood - Child Item	
	155514415 1.1	2015-16602 2 2 Blood - Child Item	
	155543315 1.1	2015-16618 2 2 Blood - Child Item	
	156246115 1.1	2015-16613 2 2 Blood - Child Item	
	156254915 2.1	2015-16673 3 2 Blood - Child Item <i>High</i> <i>Hospital tubes - approx 2ml in each tube</i>	
	156678915 1.1	2015-16724 2 2 Blood - Child Item	
	156781415 2.1	2015-16794 3 2 Blood - Child Item <i>hospital tubes</i>	
	157204815 1.1	2015-16824 2 2 Blood - Child Item	
	157415615 1.1	2015-17130 2 2 Blood - Child Item	
	157817915 1.1	2015-17132 2 2 Blood - Child Item	
	158771415 1.1	2015-16969 2 2 Blood - Child Item	
	159189515 1.1	2015-16975 2 2 Blood - Child Item	
	3.1 2015-16975		
	159648715 1.1	2015-16976 2 2 Blood - Child Item <i>High</i>	
	160458315 1.1	2015-17168 2 2 Blood - Child Item	
Total Tasks		<u>21</u> <i>High</i>	

Please see next page  
for kit & control  
info ASH →



*ASH*

Kit / inv#

THC : 13  
UPI : 12  
PCP : 10  
Meth : 11  
Be : 11  
BE : 12

Barb: 3  
Amp: 4  
Ceniv: 4  
Meth: 3  
Zul: 4  
Oxy 4B

PBS: 01152016-13  
Pipettes: 2339  
3263

opened ~~THC-13~~ kit  
\*Oxy 4B @ 17114

Mix Controls

Blank: E2490b  
Neg: 070715-LC  
Cal: 10222015-PC  
High: 10222015-HC

Oxy

Neg: 07072015-LC-5  
Cal: 06222015  
High: 10222015-OW

JK

ID	205	207	208	211	206	214	210	209	231
1 Blank-1	X	X	X	X	X	X	X	X	X
2 Blank-2	X	X	X	X	X	X	X	X	X
3 Cal-1	X	X	X	X	X	X	X	X	X
4 Cal-2	X	X	X	X	X	X	X	X	X
5 Neg-1	X	X	X	X	X	X	X	X	X
6 Neg-2	X	X	X	X	X	X	X	X	X
7 High-1	X	X	X	X	X	X	X	X	X
8 High-2	X	X	X	X	X	X	X	X	X
9 15-08265 1/1	X	X	X	X	X	X	X	X	X
10 15-16413 1/1	X	X	X	X	X	X	X	X	X
11 15-16623 3/1	X	X	X	X	X	X	X	X	X
12 15-16604 1/1	X	X	X	X	X	X	X	X	X
13 15-16611 1/1	X	X	X	X	X	X	X	X	X
14 15-16601 1/1	X	X	X	X	X	X	X	X	X
15 15-16617 1/1	X	X	X	X	X	X	X	X	X
16 15-16602 1/1	X	X	X	X	X	X	X	X	X
17 15-16618 1/1	X	X	X	X	X	X	X	X	X
18 15-16613 1/1	X	X	X	X	X	X	X	X	X
19 High-3	X	X	X	X	X	X	X	X	X
20 15-16673 2/1	X	X	X	X	X	X	X	X	X
21 15-16724 1/1	X	X	X	X	X	X	X	X	X
22 15-16794 2/1	X	X	X	X	X	X	X	X	X
23 15-16824 1/1	X	X	X	X	X	X	X	X	X
24 15-17130 1/1	X	X	X	X	X	X	X	X	X
25 15-17132 1/1	X	X	X	X	X	X	X	X	X
26 15-16969 1/1	X	X	X	X	X	X	X	X	X
27 15-16975 1/1	X	X	X	X	X	X	X	X	X
28 15-16975 3/1	X	X	X	X	X	X	X	X	X
29 15-16976 1/1	X	X	X	X	X	X	X	X	X
30 High-4	X	X	X	X	X	X	X	X	X
31 15-17168 1/1	X	X	X	X	X	X	X	X	X
32 High-5	X	X	X	X	X	X	X	X	X

02172016 ASG      PBS-01152016-B      Pipettes-2339, 3263

	ID	232	233
1	Blank-1	X	X
2	Blank-2	X	X
3	Cal-1	X	X
4	Cal-2	X	X
5	Neg-1	X	X
6	Neg-2	X	X
7	High-1	X	X
8	High-2	X	X
9	15-08265 1/1	X	X
10	15-16413 1/1	X	X
11	15-16623 3/1	X	X
12	15-16604 1/1	X	X
13	15-16611 1/1	X	X
14	15-16601 1/1	X	X
15	15-16617 1/1	X	X
16	15-16602 1/1	X	X
17	15-16618 1/1	X	X
18	15-16613 1/1	X	X
19	High-3	X	X
20	15-16673 2/1	X	X
21	15-16724 1/1	X	X
22	15-16794 2/1	X	X
23	15-16824 1/1	X	X
24	15-17130 1/1	X	X
25	15-17132 1/1	X	X
26	15-16969 1/1	X	X
27	15-16975 1/1	X	X
28	15-16975 3/1	X	X
29	15-16976 1/1	X	X
30	High-4	X	X
31	15-17168 1/1	X	X
32	High-5	X	X

ID		221B
1	Blank-1	X
2	Blank-2	X
3	Cal-1	X
4	Cal-2	X
5	Neg-1	X
6	Neg-2	X
7	High-1	X
8	High-2	X
9	15-08265 1/1	X
10	15-16413 1/1	X
11	15-16623 3/1	X
12	15-16604 1/1	X
13	15-16611 1/1	X
14	15-16601 1/1	X
15	15-16617 1/1	X
16	15-16602 1/1	X
17	15-16618 1/1	X
18	15-16613 1/1	X
19	High-3	X
20	15-16673 2/1	X
21	15-16724 1/1	X
22	15-16794 2/1	X
23	15-16824 1/1	X
24	15-17130 1/1	X
25	15-17132 1/1	X
26	15-16969 1/1	X
27	15-16975 1/1	X
28	15-16975 3/1	X
29	15-16976 1/1	X
30	High-4	X
31	15-17168 1/1	X
32	High-5	X

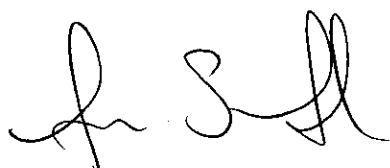
## IMMUNOASSAY Batch Report Blood

**I-THCA**

Date of Assay: 02.17.2016

Method: thc\_b.mth      KIT#: EK13462 ✓

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	3.13	0	3.22	3.9 ✓	100.00	5	
BLANK	3.308	0				4	
CALIBRATOR	1.46	10	1.44	1.5	44.87 ✓	10	
CALIBRATOR	1.429	10				10	
NEGATIVE	2.099	5	2.06	2.5	64.07	7	
NEGATIVE	2.026	5				7	
HIGH	0.788	20	0.75	6.4	23.42	18	
HIGH	0.72	20				20	
15-08265 1/1	1.196				37.15	12	pos
15-16413 1/1	3.369				104.66	4	
15-16623 3/1	3.191				99.13	5	
15-16604 1/1	2.696				83.75	5	
15-16611 1/1	0.109				3.39	133	pos
15-16601 1/1	3.023				93.91	5	
15-16617 1/1	0.106				3.29	136	pos
15-16602 1/1	2.954				91.77	5	
15-16618 1/1	1.593				49.49	9	
15-16613 1/1	0.125				3.88	116	pos
High-3	0.833				25.88	17	pos
15-16673 2/1	3.163				98.26	5	
15-16724 1/1	0.76				23.61	19	pos
15-16794 2/1	1.188				36.91	12	pos
15-16824 1/1	0.528				16.40	27	pos
15-17130 1/1	0.411				12.77	35	pos
15-17132 1/1	0.441				13.70	33	pos
15-16969 1/1	3.409				105.90	4	
15-16975 1/1	0.083				2.58	174	pos
15-16975 3/1	0.098				3.04	147	pos
15-16976 1/1	2.259				70.18	6	
High-4	0.876				27.21	16	pos

Examiner: 

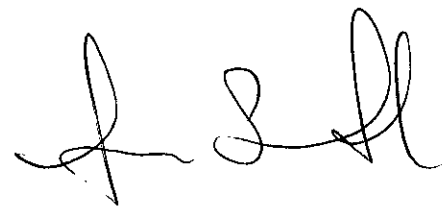
Date: 2/19/16

Reviewer: 

Date: 2/26/16



15-17168 1/1	3.116				96.80	5	
High-5	0.939				29.17	15	pos

Examiner: 

Reviewer: TS

Date: 2/19/14

Date: 2/26/16

02172016-ARL

## IMMUNOASSAY Batch Report Blood

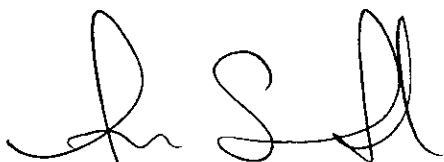
### OPIATES (OPI)

Date of Assay: 02.17.2016

Method: opi\_b.mth / KIT#: EK13319 /

Sample ID	Absorbance	ng/ml	Avg. Abs	(abs)	binding	num.value	Results
BLANK	3.492	0	3.54	1.8	100.00	10	
BLANK	3.582	0				10	
CALIBRATOR	1.71	20	1.75	3.6	49.60	21	
CALIBRATOR	1.799	20				20	
NEGATIVE	2.379	10	2.43	2.8	68.62	15	
NEGATIVE	2.475	10				14	
HIGH	1.233	40	1.21	2.6	34.22	28	
HIGH	1.188	40				30	
15-08265 1/1	3.602				101.84	10	
15-16413 1/1	3.66				103.48	10	
15-16623 3/1	3.578				101.16	10	
15-16604 1/1	3.601				101.81	10	
15-16611 1/1	3.671				103.79	10	
15-16601 1/1	3.592				101.55	10	
15-16617 1/1	3.631				102.66	10	
15-16602 1/1	3.537				100.00	10	
15-16618 1/1	3.547				100.28	10	
15-16613 1/1	3.55				100.37	10	
High-3	1.13				31.95	31	pos
15-16673 2/1	3.619				102.32	10	
15-16724 1/1	0.654				18.49	54	pos
15-16794 2/1	3.572				100.99	10	
15-16824 1/1	0.964				27.25	36	pos
15-17130 1/1	3.645				103.05	10	
15-17132 1/1	3.421				96.72	10	
15-16969 1/1	3.475				98.25	10	
15-16975 1/1	3.471				98.13	10	
15-16975 3/1	3.532				99.86	10	
15-16976 1/1	3.539				100.06	10	
High-4	1.05				29.69	33	pos

Examiner:



Date:

2/19/16

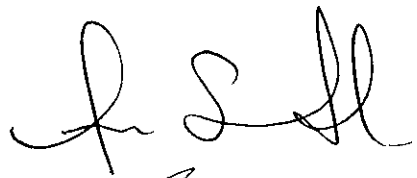
Reviewer:



Date:

2/26/16

15-17168 1/1	1.818				51.40	19	
High-5	1.291				36.50	27	pos

Examiner: 

Reviewer: 

Date: 2/19/16

Date: 2/26/16

02/17/2016 - JH

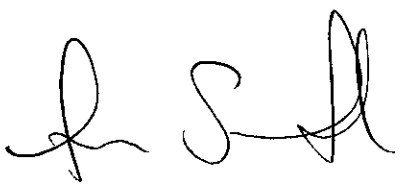
## IMMUNOASSAY Batch Report Blood

### PHENCYCLIDINE (PCP)

Date of Assay: 02.17.2016

Method: pcp\_b.mth ✓ KIT#: EK13322 ✓

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	3.404	0	3.42	0.8	100.00	3	
BLANK	3.444	0				3	
CALIBRATOR	0.875	10	0.93	8.7	27.23	11	
CALIBRATOR	0.99	10				9	
NEGATIVE	1.824	5	1.71	9.5	49.91	5	
NEGATIVE	1.594	5				6	
HIGH	0.574	20	0.60	6.5	17.57	16	
HIGH	0.629	20				15	
<b>15-08265 1/1</b>							
	0.619				18.08	15	pos
<b>15-16413 1/1</b>							
	3.581				104.59	3	
<b>15-16623 3/1</b>							
	3.451				100.79	3	
<b>15-16604 1/1</b>							
	3.48				101.64	3	
<b>15-16611 1/1</b>							
	3.546				103.56	3	
<b>15-16601 1/1</b>							
	3.6				105.14	3	
<b>15-16617 1/1</b>							
	3.451				100.79	3	
<b>15-16602 1/1</b>							
	3.594				104.96	3	
<b>15-16618 1/1</b>							
	3.502				102.28	3	
<b>15-16613 1/1</b>							
	3.616				105.61	3	
<b>High-3</b>							
	0.598				17.46	16	pos
<b>15-16673 2/1</b>							
	3.55				103.68	3	
<b>15-16724 1/1</b>							
	3.557				103.88	3	
<b>15-16794 2/1</b>							
	3.566				104.15	3	
<b>15-16824 1/1</b>							
	3.609				105.40	3	
<b>15-17130 1/1</b>							
	3.587				104.76	3	
<b>15-17132 1/1</b>							
	3.477				101.55	3	
<b>15-16969 1/1</b>							
	3.519				102.77	3	
<b>15-16975 1/1</b>							
	3.518				102.75	3	
<b>15-16975 3/1</b>							
	3.5				102.22	3	
<b>15-16976 1/1</b>							
	3.566				104.15	3	
<b>High-4</b>							
	0.557				16.27	17	pos

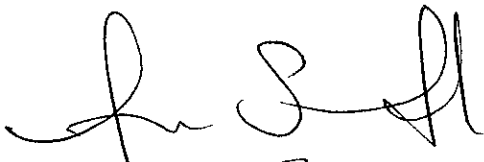
Examiner: 

Date: 2/19/16

Reviewer: TS

Date: 2/26/16

15-17168 1/1	3.568				104.21	3	
High-5	0.565				16.50	17	pos ✓

Examiner:   
Reviewer: TB

Date: 2/19/16

Date: 2/26/16

02172016-

## IMMUNOASSAY Batch Report Blood

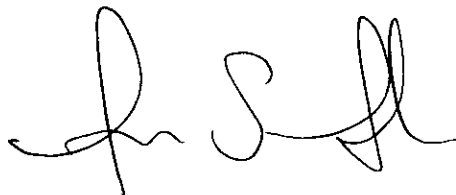
### d-Methamphetamine (Meth)

Date of Assay: 02.17.2016

Method: meth\_b.mth      KIT#: EK13516

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	2.983	0	3.01	1.2 ✓	100.00	11	
BLANK	3.033	0				11	
CALIBRATOR	1.603	20	1.60	0.7	53.03 ✓	20	
CALIBRATOR	1.587	20				20	
NEGATIVE	1.98	10	1.95	2.3	64.76	16	
NEGATIVE	1.916	10				17	
HIGH	1.251	40	1.26	0.7	41.81	25	
HIGH	1.264	40				25	
15-08265 1/1	2.601				86.47	12	
15-16413 1/1	2.909				96.71	11	
15-16623 3/1	2.763				91.86	12	
15-16604 1/1	2.838				94.35	11	
15-16611 1/1	2.906				96.61	11	
15-16601 1/1	2.825				93.92	11	
15-16617 1/1	2.694				89.56	12	
15-16602 1/1	2.619				87.07	12	
15-16618 1/1	2.876				95.61	11	
15-16613 1/1	2.924				97.21	11	
High-3	1.241				41.26	26	pos
15-16673 2/1	2.863				95.18	11	
15-16724 1/1	2.141				71.18	15	
15-16794 2/1	2.933				97.51	11	
15-16824 1/1	2.829				94.05	11	
15-17130 1/1	2.679				89.06	12	
15-17132 1/1	2.802				93.15	11	
15-16969 1/1	2.996				99.60	11	
15-16975 1/1	2.806				93.28	11	
15-16975 3/1	2.747				91.32	12	
15-16976 1/1	2.712				90.16	12	
High-4	1.138				37.83	28	pos

Examiner:



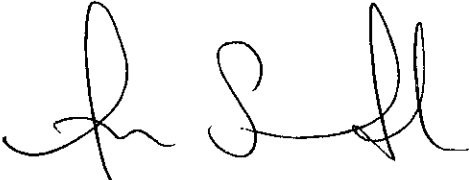
Date: 2/19/16

Reviewer:

TS

Date: 2/26/16

15-17168 1/1	0.207				6.88	154	pos
High-5	1.108				36.84	29	pos ✓

Examiner: 

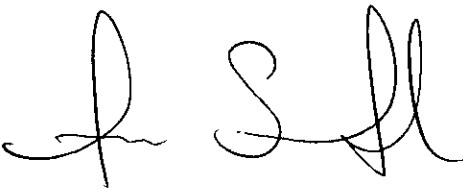
Date: 2/19/16

Reviewer: 

Date: 2/26/16

02/20/16-AG

BENZOYLECGONINE (BE)							
Date of Assay:		02.17.2016					
Method: be_b.mth		KIT#:		EK13059			
Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	2.543	0	2.51	2.1	100.00	11	
BLANK	2.467	0				11	
CALIBRATOR	1.396	20	1.39	0.6	55.49	20	
CALIBRATOR	1.384	20				20	
NEGATIVE	1.664	10	1.70	3.0	67.84	17	
NEGATIVE	1.735	10				16	
HIGH	1.263	40	1.21	5.7	48.46	22	
HIGH	1.165	40				24	
15-08265 1/1	2.591				103.43	11	
15-16413 1/1	1.206				48.14	23	pos
15-16623 3/1	2.593				103.51	11	
15-16604 1/1	2.304				91.98	12	
15-16611 1/1	2.567				102.48	11	
15-16601 1/1	2.457				98.08	11	
15-16617 1/1	2.363				94.33	12	
15-16602 1/1	2.235				89.22	12	
15-16618 1/1	2.565				102.40	11	
15-16613 1/1	2.523				100.72	11	
High-3	1.148				45.83	24	pos
15-16673 2/1	2.491				99.44	11	
15-16724 1/1	2.535				101.20	11	
15-16794 2/1	2.41				96.21	12	
15-16824 1/1	1.698				67.78	16	
15-17130 1/1	1.418				56.61	20	
15-17132 1/1	1.483				59.20	19	
15-16969 1/1	2.375				94.81	12	
15-16975 1/1	0.821				32.77	34	pos
15-16975 3/1	2.359				94.17	12	
15-16976 1/1	2.318				92.53	12	
High-4	1.241				49.54	22	pos

Examiner: 

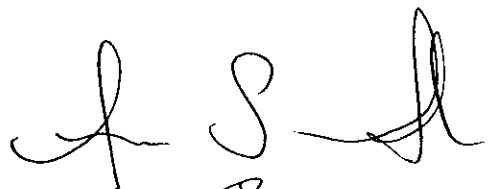
Date: 2/19/16


Reviewer: 

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15-17168 1/1	2.296				91.66	12	
High-5	0.927				37.01	30	pos

Examiner: 

Reviewer: 

Date: 2/19/14

Date: 2/26/16

02172016-

## EIA Batch Report Blood

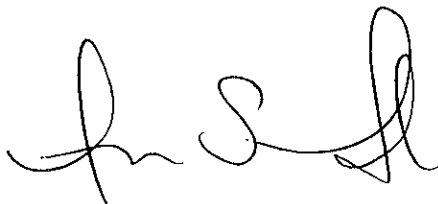
### BENZODIAZEPINES (BENZO)

Date of Assay: 02.17.2016

Method: bz\_b.mth      KIT#: EK13286

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	3.448	0	3.51	2.6	100.00	12	
BLANK	3.579	0				12	
CALIBRATOR	2.071	20	2.12	3.5	60.44	21	
CALIBRATOR	2.176	20				20	
NEGATIVE	3.1	10	3.04	2.9	86.48	14	
NEGATIVE	2.977	10				14	
HIGH	1.318	40	1.29	3.0	36.73	32	
HIGH	1.263	40				34	
15-08265 1/1	3.412				97.11	12	
15-16413 1/1	3.383				96.29	13	
15-16623 3/1	3.562				101.38	12	
15-16604 1/1	3.612				102.80	12	
15-16611 1/1	3.583				101.98	12	
15-16601 1/1	3.538				100.70	12	
15-16617 1/1	3.552				101.10	12	
15-16602 1/1	3.025				86.10	14	
15-16618 1/1	1.63				46.39	26	pos
15-16613 1/1	3.506				99.79	12	
							pos
15-16673 2/1	3.487				99.25	12	
15-16724 1/1	0.182				5.18	233	pos
15-16794 2/1	3.441				97.94	12	
15-16824 1/1	0.207				5.89	205	pos
15-17130 1/1	3.519				100.16	12	
15-17132 1/1	3.492				99.39	12	
15-16969 1/1	3.513				99.99	12	
15-16975 1/1	0.222				6.32	191	pos
15-16975 3/1	3.584				102.01	12	
15-16976 1/1	0.123				3.50	345	pos
							pos

Examiner:



Date:

2/19/16

Reviewer:

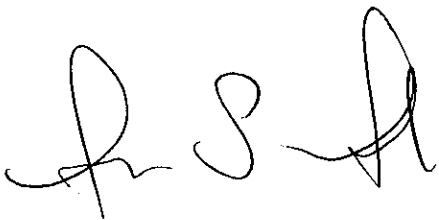
B

Date:

2/26/16

15-17168 1/1	3.51				99.90	12	
High-5	0.686				19.52	62	pos

Examiner:



Date:

2/19/14

Reviewer:

TB

Date:

2/26/16

02/26/16 TB

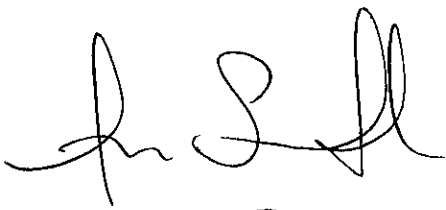
## IMMUNOASSAY Batch Report Blood

### BARBITURATES (BARB)

Date of Assay: 02.17.2016

Method: barb\_b.mth ✓ KIT#: EK13110 ✓

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	2.874	0	2.82	2.5 ✓	100.00	23	
BLANK	2.775	0				23	
CALIBRATOR	1.636	40	1.62	1.2	57.44 ✓	40	
CALIBRATOR	1.609	40				40	
NEGATIVE	1.776	20	1.78	0.6	63.16	37	
NEGATIVE	1.792	20				36	
HIGH	1.465	80	1.38	8.2	49.02	44	
HIGH	1.304	80				50	
15-08265 1/1	2.857				101.15	23	
15-16413 1/1	2.656				94.03	24	
15-16623 3/1	2.831				100.23	23	
15-16604 1/1	2.713				96.05	24	
15-16611 1/1	2.742				97.08	24	
15-16601 1/1	2.739				96.97	24	
15-16617 1/1	2.662				94.25	24	
15-16602 1/1	2.417				85.57	27	
15-16618 1/1	2.716				96.16	24	
15-16613 1/1	2.744				97.15	24	
High-3	1.35				47.80	48	pos
15-16673 2/1	2.745				97.19	24	
15-16724 1/1	2.667				94.42	24	
15-16794 2/1	2.697				95.49	24	
15-16824 1/1	2.68				94.88	24	
15-17130 1/1	2.582				91.41	25	
15-17132 1/1	2.77				98.07	23	
15-16969 1/1	2.715				96.12	24	
15-16975 1/1	2.885				102.14	22	
15-16975 3/1	2.819				99.81	23	
15-16976 1/1	2.853				101.01	23	
High-4	1.473				52.15	44	pos

Examiner: 

Date: 2/19/16

Reviewer: TS

Date: 2/26/16

15-17168 1/1	1.769				62.63	37	
High-5	1.267				44.86	51	pos ✓

Examiner: 

Date: 2/19/16

Reviewer: TB

Date: 2/26/16

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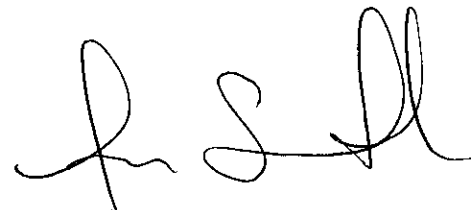
## IMMUNOASSAY Batch Report Blood

### AMPHETAMINES (AMP)

Date of Assay: 02.17.2016

Method: amp\_b.mth      KIT#: EK13421

Sample ID	Absorbance	ng/ml	Avg. Abs	(abs)	binding	num.value	Results
BLANK	3.284	0	3.27	0.7	100.00	8	
BLANK	3.251	0				8	
CALIBRATOR	1.328	20	1.31	2.5	39.94	20	
CALIBRATOR	1.282	20				20	
NEGATIVE	1.55	10	1.57	2.1	48.14	17	
NEGATIVE	1.596	10				16	
HIGH	0.83	40	0.84	0.8	25.55	31	
HIGH	0.84	40				31	
15-08265 1/1	3.314				101.42	8	
15-16413 1/1	3.014				92.24	9	
15-16623 3/1	3.136				95.98	8	
15-16604 1/1	2.934				89.79	9	
15-16611 1/1	2.944				90.10	9	
15-16601 1/1	2.897				88.66	9	
15-16617 1/1	2.949				90.25	9	
15-16602 1/1	3.078				94.20	8	
15-16618 1/1	3.246				99.34	8	
15-16613 1/1	3.284				100.50	8	
High-3	0.893				27.33	29	pos
15-16673 2/1	3.154				96.53	8	
15-16724 1/1	2.891				88.48	9	
15-16794 2/1	3.091				94.60	8	
15-16824 1/1	3.08				94.26	8	
15-17130 1/1	3.025				92.58	9	
15-17132 1/1	2.931				89.70	9	
15-16969 1/1	2.907				88.97	9	
15-16975 1/1	2.983				91.29	9	
15-16975 3/1	2.9				88.75	9	
15-16976 1/1	2.911				89.09	9	
High-4	0.806				24.67	32	pos

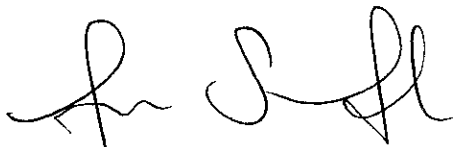
Examiner: 

Date: 2/19/16

Reviewer: TS

Date: 2/26/16


15-17168 1/1	0.283				8.66	92	pos
High-5	0.808				24.73	32	pos

Examiner: 

Date: 2/19/16

Reviewer: TB

Date: 2/26/16

02/17/2016 

## IMMUNOASSAY Batch Report Blood

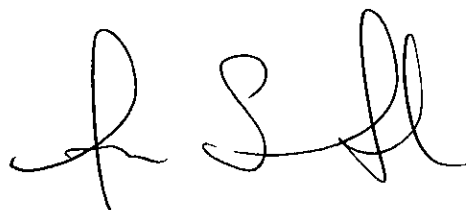
### CARISOPRODOL (CARISO)

Date of Assay: 02.17.2016

Method: cariso\_b.mth      KIT#: EK13129

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	3.048	0	3.08	1.7	100.00	188	
BLANK	3.121	0				183	
CALIBRATOR	1.166	500	1.14	2.8	37.07	490	
CALIBRATOR	1.121	500				510	
NEGATIVE	1.309	250	1.32	0.7	42.65	437	
NEGATIVE	1.322	250				432	
HIGH	0.922	1000	0.89	4.6	28.95	620	
HIGH	0.864	1000				662	
15-08265 1/1	2.892				93.76	198	
15-16413 1/1	2.865				92.88	200	
15-16623 3/1	2.86				92.72	200	
15-16604 1/1	2.783				90.23	205	
15-16611 1/1	2.514				81.50	227	
15-16601 1/1	2.712				87.92	211	
15-16617 1/1	2.807				91.00	204	
15-16602 1/1	2.607				84.52	219	
15-16618 1/1	2.884				93.50	198	
15-16613 1/1	2.982				96.68	192	
High-3	0.893				28.95	640	pos
15-16673 2/1	2.87				93.05	199	
15-16724 1/1	0.118				3.83	4845	pos
15-16794 2/1	2.685				87.05	213	
15-16824 1/1	0.139				4.51	4113	pos
15-17130 1/1	2.736				88.70	209	
15-17132 1/1	2.942				95.38	194	
15-16969 1/1	2.911				94.38	196	
15-16975 1/1	2.927				94.89	195	
15-16975 3/1	2.862				92.79	200	
15-16976 1/1	2.745				88.99	208	
High-4	0.805				26.10	710	pos

Examiner:



Date:

2/19/16

Reviewer:

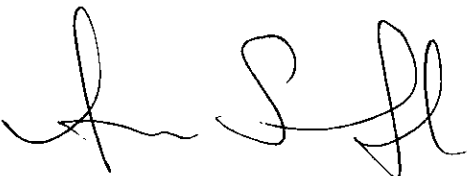
TS

Date:

2/26/16



15-17168 1/1	2.084				67.56	274	
High-5	0.792				25.68	722	pos

Examiner: 

Date: 2/19/16

Reviewer: 

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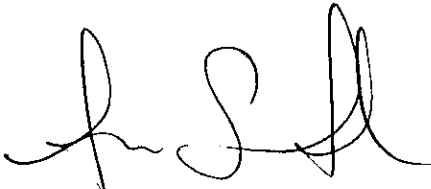
## IMMUNOASSAY Batch Report Blood

### METHADONE (MTDN)

Date of Assay: 02.17.2016

Method: mtdn\_b.mth      KIT#: EK13090

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	2.932	0	2.92	0.6	100.00	10	
BLANK	2.909	0				10	
CALIBRATOR	1.161	25	1.15	1.5	39.34	25	
CALIBRATOR	1.137	25				25	
NEGATIVE	2.133	12.5	2.07	4.5	70.78	13	
NEGATIVE	2.001	12.5				14	
HIGH	0.69	50	0.68	1.8	23.34	42	
HIGH	0.673	50				43	
15-08265 1/1	2.687				92.00	11	
15-16413 1/1	2.561				87.69	11	
15-16623 3/1	2.622				89.78	11	
15-16604 1/1	2.555				87.49	11	
15-16611 1/1	2.587				88.58	11	
15-16601 1/1	2.623				89.81	11	
15-16617 1/1	2.577				88.24	11	
15-16602 1/1	2.228				76.29	13	
15-16618 1/1	2.798				95.81	10	
15-16613 1/1	2.882				98.68	10	
High-3	0.665				22.77	43	pos
15-16673 2/1	2.555				87.49	11	
15-16724 1/1	2.052				70.26	14	
15-16794 2/1	2.774				94.98	10	
15-16824 1/1	2.753				94.26	10	
15-17130 1/1	2.695				92.28	11	
15-17132 1/1	2.638				90.33	11	
15-16969 1/1	2.462				84.30	12	
15-16975 1/1	2.666				91.29	11	
15-16975 3/1	2.593				88.79	11	
15-16976 1/1	2.582				88.41	11	
High-4	0.566				19.38	51	pos

Examiner: 

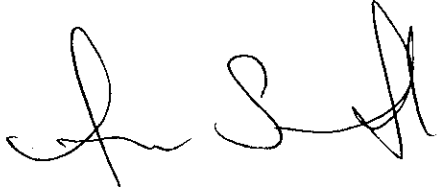
Date: 2/19/16

Reviewer: TB

Date: 2/26/16

15-17168 1/1	2.546				87.18	11	
High-5	0.488				16.71	59	pos

✓

Examiner: 

Date: 2/19/16

Reviewer: 

Date: 2/26/16

02172016 - 

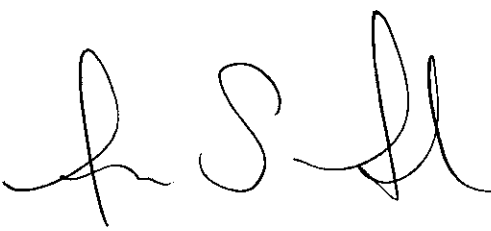
## IMMUNOASSAY Batch Report Blood

**ZOLPIDEM (ZOL)**

Date of Assay: 02.17.2016

Method: zol b.mth      KIT#: EK13573


Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	3.446	0	3.43	0.7 ✓	100.00	3	
BLANK	3.413	0				3	
CALIBRATOR	1.755	5	1.75	0.7	50.91 ✓	5	
CALIBRATOR	1.737	5				5	
NEGATIVE	2.08	2.5	2.06	1.6	59.98	4	
NEGATIVE	2.034	2.5				4	
HIGH	1.152	10	1.14	1.2	33.30	8	
HIGH	1.132	10				8	
15-08265 1/1	3.269				95.32	3	
15-16413 1/1	3.478				101.41	3	
15-16623 3/1	3.319				96.78	3	
15-16604 1/1	3.245				94.62	3	
15-16611 1/1	3.282				95.70	3	
15-16601 1/1	2.957				86.22	3	
15-16617 1/1	3.197				93.22	3	
15-16602 1/1	3.123				91.06	3	
15-16618 1/1	3.181				92.75	3	
15-16613 1/1	3.362				98.03	3	
High-3	1.348				39.31	6	pos
15-16673 2/1	3.329				97.07	3	
15-16724 1/1	3.391				98.88	3	
15-16794 2/1	3.312				96.57	3	
15-16824 1/1	3.244				94.59	3	
15-17130 1/1	3.114				90.80	3	
15-17132 1/1	3.268				95.29	3	
15-16969 1/1	3.311				96.54	3	
15-16975 1/1	3.433				100.10	3	
15-16975 3/1	3.352				97.74	3	
15-16976 1/1	3.33				97.10	3	
High-4	1.204				35.11	7	pos

Examiner:  Date: 2/19/16

Reviewer:  Date: 2/26/16

15-17168 1/1	2.992				87.24	3	
High-5	1.178				34.35	7	pos

Examiner:



Date: 2/19/14

Reviewer:

TS

Date: 2/26/16

02172016 - 

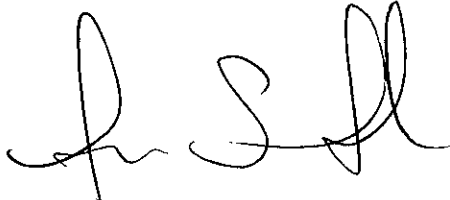
## IMMUNOASSAY Batch Report Blood

### OXYCODONE (OXY)

Date of Assay: 02.17.2016

Method: oxy\_b.mth      KIT#: EK13476

Sample ID	Absorbance	Target conc ng/ml	Avg. Abs	%CV (abs)	% binding	num.value	Results
BLANK	2.863	0	2.91	2.1 ✓	100.00	3	
BLANK	2.95	0				3	
CALIBRATOR	0.77	10	0.90	20.9	31.09 ✓	12	
CALIBRATOR	1.037	10				9	
NEGATIVE	1.524	5	1.61	7.3	55.31	6	
NEGATIVE	1.691	5				5	
HIGH	0.539	20	0.58	11.0	20.11	17	
HIGH	0.63	20				14	
15-08265 1/1	2.76				94.96	3	
15-16413 1/1	2.661				91.55	3	
15-16623 3/1	2.656				91.38	3	
15-16604 1/1	2.811				96.71	3	
15-16611 1/1	2.672				91.93	3	
15-16601 1/1	2.674				92.00	3	
15-16617 1/1	2.695				92.72	3	
15-16602 1/1	2.619				90.11	3	
15-16618 1/1	2.786				95.85	3	
15-16613 1/1	2.843				97.82	3	
High-3	0.544				18.72	17	pos
15-16673 2/1	2.86				98.40	3	
15-16724 1/1	0.919				31.62	10	
15-16794 2/1	2.878				99.02	3	
15-16824 1/1	1.311				45.11	7	
15-17130 1/1	2.879				99.05	3	
15-17132 1/1	2.718				93.51	3	
15-16969 1/1	2.752				94.68	3	
15-16975 1/1	2.795				96.16	3	
15-16975 3/1	2.891				99.47	3	
15-16976 1/1	2.712				93.31	3	
High-4	0.632				21.74	14	pos

Examiner: 

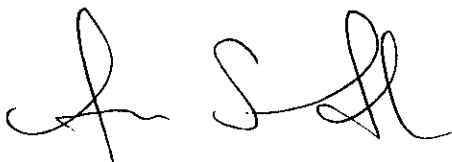
Date: 2/19/16

Reviewer: 

Date: 2/26/16

15-17168 1/1	2.368				81.47	4	
High-5	0.638				21.95	14	pos

Examiner:



Date: 2/19/16

Reviewer:

TS

Date: 2/26/16

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**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Thc_b	Blank-1	3.13	3.219	3.9101	97.235	100		4.615
B1	Thc_b	Blank-2	3.308			102.76			4.3667
C1	Thc_b	Cal-1	1.46	1.4445	1.5175	45.356	44.874		9.8938
D1	Thc_b	Cal-2	1.429			44.393			10.108
E1	Thc_b	Neg-1	2.099	2.0625	2.5027	65.207	64.073		6.8818
F1	Thc_b	Neg-2	2.026			62.939			7.1298
G1	Thc_b	High-1	0.788	0.754	6.3771	24.48	23.423		18.331
H1	Thc_b	High-2	0.72			22.367			20.063
A2	Thc_b	15-08265 1/1	1.196	1.196		37.154	37.154	pos	12.078
B2	Thc_b	15-16413 1/1	3.369	3.369		104.66	104.66	neg	4.2876
C2	Thc_b	15-16623 3/1	3.191	3.191		99.13	99.13	neg	4.5268
D2	Thc_b	15-16604 1/1	2.696	2.696		83.753	83.753	neg	5.3579
E2	Thc_b	15-16611 1/1	0.109	0.109		3.3861	3.3861	pos	132.52
F2	Thc_b	15-16601 1/1	3.023	3.023		93.911	93.911	neg	4.7784
G2	Thc_b	15-16617 1/1	0.106	0.106		3.2929	3.2929	pos	136.27
H2	Thc_b	15-16602 1/1	2.954	2.954		91.768	91.768	neg	4.89
A3	Thc_b	15-16618 1/1	1.593	1.593		49.487	49.487	neg	9.0678
B3	Thc_b	15-16613 1/1	0.125	0.125		3.8832	3.8832	pos	115.56
C3	Thc_b	High-3	0.833	0.8545	3.5583	25.878	26.546		17.341
D3	Thc_b	15-16673 2/1	3.163	3.163		98.26	98.26	neg	4.5669
E3	Thc_b	15-16724 1/1	0.76	0.76		23.61	23.61	pos	19.007
F3	Thc_b	15-16794 2/1	1.188	1.188		36.906	36.906	pos	12.159
G3	Thc_b	15-16824 1/1	0.528	0.528		16.403	16.403	pos	27.358
H3	Thc_b	15-17130 1/1	0.411	0.411		12.768	12.768	pos	35.146
A4	Thc_b	15-17132 1/1	0.441	0.441		13.7	13.7	pos	32.755



**1 Strip method names****2 Sample ID 1****3 Difference data****4 Difference data - Mean****5 Difference data - Variation coefficient****6 b/b0****7 b/b0 - Mean****8 Cutoff results****9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Thc_b	15-16969 1/1	3.409	3.409		105.9	105.9	neg	4.2373
C4	Thc_b	15-16975 1/1	0.083	0.083		2.5784	2.5784	pos	174.04
D4	Thc_b	15-16975 3/1	0.098	0.098		3.0444	3.0444	pos	147.4
E4	Thc_b	15-16976 1/1	2.259	2.259		70.177	70.177	neg	6.3944
F4	Thc_b	High-4	0.876			27.213			16.49
G4	Thc_b	15-17168 1/1	3.116	3.116		96.8	96.8	neg	4.6358
H4	Thc_b	High-5	0.939	0.939		29.171	29.171	pos	15.383
A5	Opi_b	Blank-1	3.492	3.537	1.7993	98.728	100		10.049
B5	Opi_b	Blank-2	3.582			101.27			9.7962
C5	Opi_b	Cal-1	1.71	1.7545	3.5869	48.346	49.604		20.52
D5	Opi_b	Cal-2	1.799			50.862			19.505
E5	Opi_b	Neg-1	2.379	2.427	2.797	67.26	68.617		14.75
F5	Opi_b	Neg-2	2.475			69.975			14.178
G5	Opi_b	High-1	1.233	1.2105	2.6286	34.86	34.224		28.459
H5	Opi_b	High-2	1.188			33.588			29.537
A6	Opi_b	15-08265 1/1	3.602	3.602		101.84	101.84	neg	9.7418
B6	Opi_b	15-16413 1/1	3.66	3.66		103.48	103.48	neg	9.5874
C6	Opi_b	15-16623 3/1	3.578	3.578		101.16	101.16	neg	9.8072
D6	Opi_b	15-16604 1/1	3.601	3.601		101.81	101.81	neg	9.7445
E6	Opi_b	15-16611 1/1	3.671	3.671		103.79	103.79	neg	9.5587
F6	Opi_b	15-16601 1/1	3.592	3.592		101.55	101.55	neg	9.7689
G6	Opi_b	15-16617 1/1	3.631	3.631		102.66	102.66	neg	9.664
H6	Opi_b	15-16602 1/1	3.537	3.537		100	100	neg	9.9208
A7	Opi_b	15-16618 1/1	3.547	3.547		100.28	100.28	neg	9.8929
B7	Opi_b	15-16613 1/1	3.55	3.55		100.37	100.37	neg	9.8845

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
C7	Opi_b	High-3	1.13	1.09	5.1898	31.948	30.817		31.053
D7	Opi_b	15-16673 2/1	3.619	3.619		102.32	102.32	neg	9.696
E7	Opi_b	15-16724 1/1	0.654	0.654		18.49	18.49	pos	53.654
F7	Opi_b	15-16794 2/1	3.572	3.572		100.99	100.99	neg	9.8236
G7	Opi_b	15-16824 1/1	0.964	0.964		27.255	27.255	pos	36.4
H7	Opi_b	15-17130 1/1	3.645	3.645		103.05	103.05	neg	9.6269
A8	Opi_b	15-17132 1/1	3.421	3.421		96.72	96.72	neg	10.257
B8	Opi_b	15-16969 1/1	3.475	3.475		98.247	98.247	neg	10.098
C8	Opi_b	15-16975 1/1	3.471	3.471		98.134	98.134	neg	10.109
D8	Opi_b	15-16975 3/1	3.532	3.532		99.859	99.859	neg	9.9349
E8	Opi_b	15-16976 1/1	3.539	3.539		100.06	100.06	neg	9.9152
F8	Opi_b	High-4	1.05			29.686			33.419
G8	Opi_b	15-17168 1/1	1.818	1.818		51.399	51.399	neg	19.301
H8	Opi_b	High-5	1.291	1.291		36.5	36.5	pos	27.18

**QC Validation criteria**

Exp. Group Num 1

QC Validation criteria : Difference data

NC1>LPC1 --> TRUE

LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE

Exp. Group Num 2

Validation criteria : Difference data

NC2>LPC2 --> TRUE

LPC2>PC2 --> TRUE

PC2>HPC2 --> TRUE

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Pcp_b	Blank-1	3.404	3.424	0.82606	99.416	100		2.7394
B1	Pcp_b	Blank-2	3.444			100.58			2.7076
C1	Pcp_b	Cal-1	0.875	0.9325	8.7204	25.555	27.234		10.657
D1	Pcp_b	Cal-2	0.99			28.914			9.4192
E1	Pcp_b	Neg-1	1.824	1.709	9.5164	53.271	49.912		5.1124
F1	Pcp_b	Neg-2	1.594			46.554			5.8501
G1	Pcp_b	High-1	0.574	0.6015	6.4656	16.764	17.567		16.246
H1	Pcp_b	High-2	0.629			18.37			14.825
A2	Pcp_b	15-08265 1/1	0.619	0.619		18.078	18.078	pos	15.065
B2	Pcp_b	15-16413 1/1	3.581	3.581		104.59	104.59	neg	2.604
C2	Pcp_b	15-16623 3/1	3.451	3.451		100.79	100.79	neg	2.7021
D2	Pcp_b	15-16604 1/1	3.48	3.48		101.64	101.64	neg	2.6796
E2	Pcp_b	15-16611 1/1	3.546	3.546		103.56	103.56	neg	2.6297
F2	Pcp_b	15-16601 1/1	3.6	3.6		105.14	105.14	neg	2.5903
G2	Pcp_b	15-16617 1/1	3.451	3.451		100.79	100.79	neg	2.7021
H2	Pcp_b	15-16602 1/1	3.594	3.594		104.96	104.96	neg	2.5946
A3	Pcp_b	15-16618 1/1	3.502	3.502		102.28	102.28	neg	2.6628
B3	Pcp_b	15-16613 1/1	3.616	3.616		105.61	105.61	neg	2.5788
C3	Pcp_b	High-3	0.598	0.5775	5.0202	17.465	16.866		15.594
D3	Pcp_b	15-16673 2/1	3.55	3.55		103.68	103.68	neg	2.6268
E3	Pcp_b	15-16724 1/1	3.557	3.557		103.88	103.88	neg	2.6216
F3	Pcp_b	15-16794 2/1	3.566	3.566		104.15	104.15	neg	2.615
G3	Pcp_b	15-16824 1/1	3.609	3.609		105.4	105.4	neg	2.5838
H3	Pcp_b	15-17130 1/1	3.587	3.587		104.76	104.76	neg	2.5997
A4	Pcp_b	15-17132 1/1	3.477	3.477		101.55	101.55	neg	2.6819

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Pcp_b	15-16969 1/1	3.519	3.519		102.77	102.77	neg	2.6499
C4	Pcp_b	15-16975 1/1	3.518	3.518		102.75	102.75	neg	2.6507
D4	Pcp_b	15-16975 3/1	3.5	3.5		102.22	102.22	neg	2.6643
E4	Pcp_b	15-16976 1/1	3.566	3.566		104.15	104.15	neg	2.615
F4	Pcp_b	High-4	0.557			16.268			16.741
G4	Pcp_b	15-17168 1/1	3.568	3.568		104.21	104.21	neg	2.6135
H4	Pcp_b	High-5	0.565	0.565		16.501	16.501	pos	16.504
A5	Meth_b	Blank-1	2.983	3.008	1.1754	99.169	100		10.694
B5	Meth_b	Blank-2	3.033			100.83			10.518
C5	Meth_b	Cal-1	1.603	1.595	0.70932	53.291	53.025		19.9
D5	Meth_b	Cal-2	1.587			52.759			20.101
E5	Meth_b	Neg-1	1.98	1.948	2.3231	65.824	64.761		16.111
F5	Meth_b	Neg-2	1.916			63.697			16.649
G5	Meth_b	High-1	1.251	1.2575	0.73101	41.589	41.805		25.5
H5	Meth_b	High-2	1.264			42.021			25.237
A6	Meth_b	15-08265 1/1	2.601	2.601		86.469	86.469	neg	12.265
B6	Meth_b	15-16413 1/1	2.909	2.909		96.709	96.709	neg	10.966
C6	Meth_b	15-16623 3/1	2.763	2.763		91.855	91.855	neg	11.545
D6	Meth_b	15-16604 1/1	2.838	2.838		94.348	94.348	neg	11.24
E6	Meth_b	15-16611 1/1	2.906	2.906		96.609	96.609	neg	10.977
F6	Meth_b	15-16601 1/1	2.825	2.825		93.916	93.916	neg	11.292
G6	Meth_b	15-16617 1/1	2.694	2.694		89.561	89.561	neg	11.841
H6	Meth_b	15-16602 1/1	2.619	2.619		87.068	87.068	neg	12.18
A7	Meth_b	15-16618 1/1	2.876	2.876		95.612	95.612	neg	11.092
B7	Meth_b	15-16613 1/1	2.924	2.924		97.207	97.207	neg	10.91

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
C7	Meth_b	High-3	1.241	1.1895	6.1229	41.257	39.545		25.705
D7	Meth_b	15-16673 2/1	2.863	2.863		95.18	95.18	neg	11.142
E7	Meth_b	15-16724 1/1	2.141	2.141		71.177	71.177	neg	14.9
F7	Meth_b	15-16794 2/1	2.933	2.933		97.507	97.507	neg	10.876
G7	Meth_b	15-16824 1/1	2.829	2.829		94.049	94.049	neg	11.276
H7	Meth_b	15-17130 1/1	2.679	2.679		89.063	89.063	neg	11.907
A8	Meth_b	15-17132 1/1	2.802	2.802		93.152	93.152	neg	11.385
B8	Meth_b	15-16969 1/1	2.996	2.996		99.601	99.601	neg	10.648
C8	Meth_b	15-16975 1/1	2.806	2.806		93.285	93.285	neg	11.368
D8	Meth_b	15-16975 3/1	2.747	2.747		91.323	91.323	neg	11.613
E8	Meth_b	15-16976 1/1	2.712	2.712		90.16	90.16	neg	11.763
F8	Meth_b	High-4	1.138			37.832			28.032
G8	Meth_b	15-17168 1/1	0.207	0.207		6.8816	6.8816	pos	154.11
H8	Meth_b	High-5	1.108	1.108		36.835	36.835	pos	28.791

**QC Validation criteria**

Exp. Group Num 1

QC Validation criteria : Difference data

NC1>LPC1 --> TRUE

LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE

Exp. Group Num 2

Validation criteria : Difference data

NC2>LPC2 --> TRUE

LPC2>PC2 --> TRUE

PC2>HPC2 --> TRUE

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Be_b	Blank-1	2.543	2.505	2.1453	101.52	100		27.33
B1	Be_b	Blank-2	2.467			98.483			28.172
C1	Be_b	Cal-1	1.396	1.39	0.61045	55.729	55.489		49.785
D1	Be_b	Cal-2	1.384			55.25			50.217
E1	Be_b	Neg-1	1.664	1.6995	2.9541	66.427	67.844		41.767
F1	Be_b	Neg-2	1.735			69.261			40.058
G1	Be_b	High-1	1.263	1.214	5.7081	50.419	48.463		55.028
H1	Be_b	High-2	1.165			46.507			59.657
A2	Be_b	15-08265 1/1	2.591	2.591		103.43	103.43	neg	26.824
B2	Be_b	15-16413 1/1	1.206	1.206		48.144	48.144	pos	57.629
C2	Be_b	15-16623 3/1	2.593	2.593		103.51	103.51	neg	26.803
D2	Be_b	15-16604 1/1	2.304	2.304		91.976	91.976	neg	30.165
E2	Be_b	15-16611 1/1	2.567	2.567		102.48	102.48	neg	27.074
F2	Be_b	15-16601 1/1	2.457	2.457		98.084	98.084	neg	28.287
G2	Be_b	15-16617 1/1	2.363	2.363		94.331	94.331	neg	29.412
H2	Be_b	15-16602 1/1	2.235	2.235		89.222	89.222	neg	31.096
A3	Be_b	15-16618 1/1	2.565	2.565		102.4	102.4	neg	27.096
B3	Be_b	15-16613 1/1	2.523	2.523		100.72	100.72	neg	27.547
C3	Be_b	High-3	1.148	1.1945	5.5053	45.828	47.685		60.54
D3	Be_b	15-16673 2/1	2.491	2.491		99.441	99.441	neg	27.9
E3	Be_b	15-16724 1/1	2.535	2.535		101.2	101.2	neg	27.416
F3	Be_b	15-16794 2/1	2.41	2.41		96.208	96.208	neg	28.838
G3	Be_b	15-16824 1/1	1.698	1.698		67.784	67.784	neg	40.931
H3	Be_b	15-17130 1/1	1.418	1.418		56.607	56.607	neg	49.013
A4	Be_b	15-17132 1/1	1.483	1.483		59.202	59.202	neg	46.864

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Be_b	15-16969 1/1	2.375	2.375		94.81	94.81	neg	29.263
C4	Be_b	15-16975 1/1	0.821	0.821		32.774	32.774	pos	84.653
D4	Be_b	15-16975 3/1	2.359	2.359		94.172	94.172	neg	29.462
E4	Be_b	15-16976 1/1	2.318	2.318		92.535	92.535	neg	29.983
F4	Be_b	High-4	1.241			49.541			56.003
G4	Be_b	15-17168 1/1	2.296	2.296		91.657	91.657	neg	30.27
H4	Be_b	High-5	0.927	0.927		37.006	37.006	pos	74.973
A5	Oxa_b	Blank-1	3.448	3.5135	2.6364	98.136	100		30.793
B5	Oxa_b	Blank-2	3.579			101.86			29.666
C5	Oxa_b	Cal-1	2.071	2.1235	3.4964	58.944	60.438		51.268
D5	Oxa_b	Cal-2	2.176			61.933			48.794
E5	Oxa_b	Neg-1	3.1	3.0385	2.8624	88.231	86.481		34.25
F5	Oxa_b	Neg-2	2.977			84.73			35.665
G5	Oxa_b	High-1	1.318	1.2905	3.0136	37.512	36.73		80.558
H5	Oxa_b	High-2	1.263			35.947			84.066
A6	Oxa_b	15-08265 1/1	3.412	3.412		97.111	97.111	neg	31.118
B6	Oxa_b	15-16413 1/1	3.383	3.383		96.286	96.286	neg	31.385
C6	Oxa_b	15-16623 3/1	3.562	3.562		101.38	101.38	neg	29.808
D6	Oxa_b	15-16604 1/1	3.612	3.612		102.8	102.8	neg	29.395
E6	Oxa_b	15-16611 1/1	3.583	3.583		101.98	101.98	neg	29.633
F6	Oxa_b	15-16601 1/1	3.538	3.538		100.7	100.7	neg	30.01
G6	Oxa_b	15-16617 1/1	3.552	3.552		101.1	101.1	neg	29.892
H6	Oxa_b	15-16602 1/1	3.025	3.025		86.096	86.096	neg	35.099
A7	Oxa_b	15-16618 1/1	1.63	1.63		46.392	46.392	pos	65.138
B7	Oxa_b	15-16613 1/1	3.506	3.506		99.787	99.787	neg	30.284

- 1 Strip method names
- 2 Sample ID 1
- 3 Difference data
- 4 Difference data - Mean
- 5 Difference data - Variation coefficient
- 6 b/b0
- 7 b/b0 - Mean
- 8 Cutoff results
- 9 CONC

	1	2	3	4	5	6	7	8	9
C7	Oxa_b	High-3	1.262	1.202	7.0593	35.919	34.211		84.132
D7	Oxa_b	15-16673 2/1	3.487	3.487		99.246	99.246	neg	30.449
E7	Oxa_b	15-16724 1/1	0.182	0.182		5.18	5.18	pos	583.38
F7	Oxa_b	15-16794 2/1	3.441	3.441		97.937	97.937	neg	30.856
G7	Oxa_b	15-16824 1/1	0.207	0.207		5.8916	5.8916	pos	512.92
H7	Oxa_b	15-17130 1/1	3.519	3.519		100.16	100.16	neg	30.172
A8	Oxa_b	15-17132 1/1	3.492	3.492		99.388	99.388	neg	30.405
B8	Oxa_b	15-16969 1/1	3.513	3.513		99.986	99.986	neg	30.223
C8	Oxa_b	15-16975 1/1	0.222	0.222		6.3185	6.3185	pos	478.27
D8	Oxa_b	15-16975 3/1	3.584	3.584		102.01	102.01	neg	29.625
E8	Oxa_b	15-16976 1/1	0.123	0.123		3.5008	3.5008	pos	863.21
F8	Oxa_b	High-4	1.142			32.503			92.973
G8	Oxa_b	15-17168 1/1	3.51	3.51		99.9	99.9	neg	30.249
H8	Oxa_b	High-5	0.686	0.686		19.525	19.525	pos	154.77

**QC Validation criteria**

Exp. Group Num 1

QC Validation criteria : Difference data

NC1>LPC1 --> TRUE

LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE

Exp. Group Num 2

Validation criteria : Difference data

NC2>LPC2 --> TRUE

LPC2>PC2 --> TRUE

PC2>HPC2 --> TRUE



**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Barb_b	Blank-1	2.874	2.8245	2.4784	101.75	100		28.227
B1	Barb_b	Blank-2	2.775			98.247			29.234
C1	Barb_b	Cal-1	1.636	1.6225	1.1767	57.922	57.444		49.587
D1	Barb_b	Cal-2	1.609			56.966			50.42
E1	Barb_b	Neg-1	1.776	1.784	0.63418	62.878	63.162		45.678
F1	Barb_b	Neg-2	1.792			63.445			45.271
G1	Barb_b	High-1	1.465	1.3845	8.2228	51.868	49.018		55.375
H1	Barb_b	High-2	1.304			46.167			62.212
A2	Barb_b	15-08265 1/1	2.857	2.857		101.15	101.15	neg	28.395
B2	Barb_b	15-16413 1/1	2.656	2.656		94.034	94.034	neg	30.544
C2	Barb_b	15-16623 3/1	2.831	2.831		100.23	100.23	neg	28.656
D2	Barb_b	15-16604 1/1	2.713	2.713		96.052	96.052	neg	29.902
E2	Barb_b	15-16611 1/1	2.742	2.742		97.079	97.079	neg	29.586
F2	Barb_b	15-16601 1/1	2.739	2.739		96.973	96.973	neg	29.618
G2	Barb_b	15-16617 1/1	2.662	2.662		94.247	94.247	neg	30.475
H2	Barb_b	15-16602 1/1	2.417	2.417		85.573	85.573	neg	33.564
A3	Barb_b	15-16618 1/1	2.716	2.716		96.159	96.159	neg	29.869
B3	Barb_b	15-16613 1/1	2.744	2.744		97.15	97.15	neg	29.565
C3	Barb_b	High-3	1.35	1.4115	6.1618	47.796	49.973		60.093
D3	Barb_b	15-16673 2/1	2.745	2.745		97.185	97.185	neg	29.554
E3	Barb_b	15-16724 1/1	2.667	2.667		94.424	94.424	neg	30.418
F3	Barb_b	15-16794 2/1	2.697	2.697		95.486	95.486	neg	30.08
G3	Barb_b	15-16824 1/1	2.68	2.68		94.884	94.884	neg	30.271
H3	Barb_b	15-17130 1/1	2.582	2.582		91.414	91.414	neg	31.419
A4	Barb_b	15-17132 1/1	2.77	2.77		98.07	98.07	neg	29.287

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Barb_b	15-16969 1/1	2.715	2.715		96.123	96.123	neg	29.88
C4	Barb_b	15-16975 1/1	2.885	2.885		102.14	102.14	neg	28.12
D4	Barb_b	15-16975 3/1	2.819	2.819		99.805	99.805	neg	28.778
E4	Barb_b	15-16976 1/1	2.853	2.853		101.01	101.01	neg	28.435
F4	Barb_b	High-4	1.473			52.151			55.075
G4	Barb_b	15-17168 1/1	1.769	1.769		62.631	62.631	neg	45.859
H4	Barb_b	High-5	1.267	1.267		44.857	44.857	pos	64.029
A5	Amp_b	Blank-1	3.284	3.2675	0.71414	100.5	100		7.9476
B5	Amp_b	Blank-2	3.251			99.495			8.0283
C5	Amp_b	Cal-1	1.328	1.305	2.4925	40.643	39.939		19.654
D5	Amp_b	Cal-2	1.282			39.235			20.359
E5	Amp_b	Neg-1	1.55	1.573	2.0678	47.437	48.141		16.839
F5	Amp_b	Neg-2	1.596			48.845			16.353
G5	Amp_b	High-1	0.83	0.835	0.84683	25.402	25.555		31.446
H5	Amp_b	High-2	0.84			25.708			31.071
A6	Amp_b	15-08265 1/1	3.314	3.314		101.42	101.42	neg	7.8757
B6	Amp_b	15-16413 1/1	3.014	3.014		92.242	92.242	neg	8.6596
C6	Amp_b	15-16623 3/1	3.136	3.136		95.976	95.976	neg	8.3227
D6	Amp_b	15-16604 1/1	2.934	2.934		89.793	89.793	neg	8.8957
E6	Amp_b	15-16611 1/1	2.944	2.944		90.099	90.099	neg	8.8655
F6	Amp_b	15-16601 1/1	2.897	2.897		88.661	88.661	neg	9.0093
G6	Amp_b	15-16617 1/1	2.949	2.949		90.252	90.252	neg	8.8505
H6	Amp_b	15-16602 1/1	3.078	3.078		94.2	94.2	neg	8.4795
A7	Amp_b	15-16618 1/1	3.246	3.246		99.342	99.342	neg	8.0407
B7	Amp_b	15-16613 1/1	3.284	3.284		100.5	100.5	neg	7.9476

1 Strip method names

2 Sample ID 1

3 Difference data

4 Difference data - Mean

5 Difference data - Variation coefficient

6 b/b0

7 b/b0 - Mean

8 Cutoff results

9 CONC

	1	2	3	4	5	6	7	8	9
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C7	Amp_b	High-3	0.893	0.8495	7.2417	27.33	25.998		29.227
D7	Amp_b	15-16673 2/1	3.154	3.154		96.526	96.526	neg	8.2752
E7	Amp_b	15-16724 1/1	2.891	2.891		88.477	88.477	neg	9.028
F7	Amp_b	15-16794 2/1	3.091	3.091		94.598	94.598	neg	8.4439
G7	Amp_b	15-16824 1/1	3.08	3.08		94.262	94.262	neg	8.474
H7	Amp_b	15-17130 1/1	3.025	3.025		92.578	92.578	neg	8.6281
A8	Amp_b	15-17132 1/1	2.931	2.931		89.702	89.702	neg	8.9048
B8	Amp_b	15-16969 1/1	2.907	2.907		88.967	88.967	neg	8.9783
C8	Amp_b	15-16975 1/1	2.983	2.983		91.293	91.293	neg	8.7496
D8	Amp_b	15-16975 3/1	2.9	2.9		88.753	88.753	neg	9
E8	Amp_b	15-16976 1/1	2.911	2.911		89.09	89.09	neg	8.966
F8	Amp_b	High-4	0.806	0.806		24.667	24.667		32.382
G8	Amp_b	15-17168 1/1	0.283	0.283		8.6611	8.6611	pos	92.226
H8	Amp_b	High-5	0.808	0.808		24.728	24.728	pos	32.302

QC Validation criteria

Exp. Group Num 1  
QC Validation criteria : Difference data

NC1>LPC1 --> TRUE  
LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE  
Exp. Group Num 2

Validation criteria : Difference data

NC2>LPC2 --> TRUE  
LPC2>PC2 --> TRUE

PC2>HPC2 --> TRUE



**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Cariso_b	Blank-1	3.048	3.0845	1.6735	98.817	100		7.5033
B1	Cariso_b	Blank-2	3.121			101.18			7.3278
C1	Cariso_b	Cal-1	1.166	1.1435	2.7827	37.802	37.072		19.614
D1	Cariso_b	Cal-2	1.121			36.343			20.401
E1	Cariso_b	Neg-1	1.309	1.3155	0.69878	42.438	42.649		17.471
F1	Cariso_b	Neg-2	1.322			42.859			17.3
G1	Cariso_b	High-1	0.922	0.893	4.5926	29.891	28.951		24.805
H1	Cariso_b	High-2	0.864			28.011			26.47
A2	Cariso_b	15-08265 1/1	2.892	2.892		93.759	93.759	neg	7.908
B2	Cariso_b	15-16413 1/1	2.865	2.865		92.884	92.884	neg	7.9825
C2	Cariso_b	15-16623 3/1	2.86	2.86		92.722	92.722	neg	7.9965
D2	Cariso_b	15-16604 1/1	2.783	2.783		90.225	90.225	neg	8.2178
E2	Cariso_b	15-16611 1/1	2.514	2.514		81.504	81.504	neg	9.0971
F2	Cariso_b	15-16601 1/1	2.712	2.712		87.923	87.923	neg	8.4329
G2	Cariso_b	15-16617 1/1	2.807	2.807		91.003	91.003	neg	8.1475
H2	Cariso_b	15-16602 1/1	2.607	2.607		84.519	84.519	neg	8.7725
A3	Cariso_b	15-16618 1/1	2.884	2.884		93.5	93.5	neg	7.93
B3	Cariso_b	15-16613 1/1	2.982	2.982		96.677	96.677	neg	7.6693
C3	Cariso_b	High-3	0.893	0.849	7.3293	28.951	27.525		25.61
D3	Cariso_b	15-16673 2/1	2.87	2.87		93.046	93.046	neg	7.9686
E3	Cariso_b	15-16724 1/1	0.118	0.118		3.8256	3.8256	pos	193.81
F3	Cariso_b	15-16794 2/1	2.685	2.685		87.048	87.048	neg	8.5177
G3	Cariso_b	15-16824 1/1	0.139	0.139		4.5064	4.5064	pos	164.53
H3	Cariso_b	15-17130 1/1	2.736	2.736		88.702	88.702	neg	8.3589
A4	Cariso_b	15-17132 1/1	2.942	2.942		95.38	95.38	neg	7.7736

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Cariso_b	15-16969 1/1	2.911	2.911		94.375	94.375	neg	7.8564
C4	Cariso_b	15-16975 1/1	2.927	2.927		94.894	94.894	neg	7.8135
D4	Cariso_b	15-16975 3/1	2.862	2.862		92.787	92.787	neg	7.9909
E4	Cariso_b	15-16976 1/1	2.745	2.745		88.993	88.993	neg	8.3315
F4	Cariso_b	High-4	0.805			26.098			28.41
G4	Cariso_b	15-17168 1/1	2.084	2.084		67.564	67.564	neg	10.974
H4	Cariso_b	High-5	0.792	0.792		25.677	25.677	pos	28.876
A5	Mtdn_b	Blank-1	2.932	2.9205	0.55687	100.39	100		7.8377
B5	Mtdn_b	Blank-2	2.909			99.606			7.8996
C5	Mtdn_b	Cal-1	1.161	1.149	1.477	39.753	39.343		19.793
D5	Mtdn_b	Cal-2	1.137			38.932			20.211
E5	Mtdn_b	Neg-1	2.133	2.067	4.5156	73.035	70.776		10.774
F5	Mtdn_b	Neg-2	2.001			68.516			11.484
G5	Mtdn_b	High-1	0.69	0.6815	1.7639	23.626	23.335		33.304
H5	Mtdn_b	High-2	0.673			23.044			34.146
A6	Mtdn_b	15-08265 1/1	2.687	2.687		92.005	92.005	neg	8.5523
B6	Mtdn_b	15-16413 1/1	2.561	2.561		87.69	87.69	neg	8.9731
C6	Mtdn_b	15-16623 3/1	2.622	2.622		89.779	89.779	neg	8.7643
D6	Mtdn_b	15-16604 1/1	2.555	2.555		87.485	87.485	neg	8.9941
E6	Mtdn_b	15-16611 1/1	2.587	2.587		88.581	88.581	neg	8.8829
F6	Mtdn_b	15-16601 1/1	2.623	2.623		89.813	89.813	neg	8.761
G6	Mtdn_b	15-16617 1/1	2.577	2.577		88.238	88.238	neg	8.9173
H6	Mtdn_b	15-16602 1/1	2.228	2.228		76.288	76.288	neg	10.314
A7	Mtdn_b	15-16618 1/1	2.798	2.798		95.806	95.806	neg	8.213
B7	Mtdn_b	15-16613 1/1	2.882	2.882		98.682	98.682	neg	7.9736

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
C7	Mtdn_b	High-3	0.665	0.6155	11.373	22.77	21.075		34.556
D7	Mtdn_b	15-16673 2/1	2.555	2.555		87.485	87.485	neg	8.9941
E7	Mtdn_b	15-16724 1/1	2.052	2.052		70.262	70.262	neg	11.199
F7	Mtdn_b	15-16794 2/1	2.774	2.774		94.984	94.984	neg	8.2841
G7	Mtdn_b	15-16824 1/1	2.753	2.753		94.265	94.265	neg	8.3473
H7	Mtdn_b	15-17130 1/1	2.695	2.695		92.279	92.279	neg	8.5269
A8	Mtdn_b	15-17132 1/1	2.638	2.638		90.327	90.327	neg	8.7111
B8	Mtdn_b	15-16969 1/1	2.462	2.462		84.301	84.301	neg	9.3339
C8	Mtdn_b	15-16975 1/1	2.666	2.666		91.286	91.286	neg	8.6197
D8	Mtdn_b	15-16975 3/1	2.593	2.593		88.786	88.786	neg	8.8623
E8	Mtdn_b	15-16976 1/1	2.582	2.582		88.41	88.41	neg	8.9001
F8	Mtdn_b	High-4	0.566			19.38			40.601
G8	Mtdn_b	15-17168 1/1	2.546	2.546		87.177	87.177	neg	9.0259
H8	Mtdn_b	High-5	0.488	0.488		16.709	16.709	pos	47.09

**QC Validation criteria**

Exp. Group Num 1

QC Validation criteria : Difference data

NC1>LPC1 --> TRUE

LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE

Exp. Group Num 2

Validation criteria : Difference data

NC2>LPC2 --> TRUE

LPC2>PC2 --> TRUE

PC2>HPC2 --> TRUE

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Zol_b	Blank-1	3.446	3.43	0.6804	100.5	100		10.13
B1	Zol_b	Blank-2	3.413			99.52			10.23
C1	Zol_b	Cal-1	1.755	1.746	0.729	51.17	50.91		19.9
D1	Zol_b	Cal-2	1.737			50.65			20.1
E1	Zol_b	Neg-1	2.08	2.057	1.581	60.65	59.98		16.79
F1	Zol_b	Neg-2	2.034			59.31			17.17
G1	Zol_b	High-1	1.152	1.142	1.238	33.59	33.3		30.31
H1	Zol_b	High-2	1.132			33.01			30.85
A2	Zol_b	15-08265 1/1	3.269	3.269		95.32	95.32	neg	10.68
B2	Zol_b	15-16413 1/1	3.478	3.478		101.4	101.4	neg	10.04
C2	Zol_b	15-16623 3/1	3.319	3.319		96.78	96.78	neg	10.52
D2	Zol_b	15-16604 1/1	3.245	3.245		94.62	94.62	neg	10.76
E2	Zol_b	15-16611 1/1	3.282	3.282		95.7	95.7	neg	10.64
F2	Zol_b	15-16601 1/1	2.957	2.957		86.22	86.22	neg	11.81
G2	Zol_b	15-16617 1/1	3.197	3.197		93.22	93.22	neg	10.92
H2	Zol_b	15-16602 1/1	3.123	3.123		91.06	91.06	neg	11.18
A3	Zol_b	15-16618 1/1	3.181	3.181		92.75	92.75	neg	10.98
B3	Zol_b	15-16613 1/1	3.362	3.362		98.03	98.03	neg	10.39
C3	Zol_b	High-3	1.348	0.319	185.6	39.31	9.302		25.91
D3	Zol_b	15-16673 2/1	3.329	3.329		97.07	97.07	neg	10.49
E3	Zol_b	15-16724 1/1	3.391	3.391		98.88	98.88	neg	10.3
F3	Zol_b	15-16794 2/1	3.312	3.312		96.57	96.57	neg	10.54
G3	Zol_b	15-16824 1/1	3.244	3.244		94.59	94.59	neg	10.76
H3	Zol_b	15-17130 1/1	3.114	3.114		90.8	90.8	neg	11.21
A4	Zol_b	15-17132 1/1	3.268	3.268		95.29	95.29	neg	10.69

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Zol_b	15-16969 1/1	3.311	3.311		96.54	96.54	neg	10.55
C4	Zol_b	15-16975 1/1	3.433	3.433		100.1	100.1	neg	10.17
D4	Zol_b	15-16975 3/1	3.352	3.352		97.74	97.74	neg	10.42
E4	Zol_b	15-16976 1/1	3.33	3.33		97.1	97.1	neg	10.49
F4	Zol_b	High-4	1.204			35.11			29
G4	Zol_b	15-17168 1/1	2.992	2.992		87.24	87.24	neg	11.67
H4	Zol_b	High-5	1.178	1.178		34.35	34.35	pos	29.64
A6	Zol_b		0			0			NoCalc
D7	Zol_b		0			0			NoCalc
G8	Zol_b		0			0			NoCalc
C10	Zol_b		0			0			NoCalc
E11	Zol_b		0			0			NoCalc
G12	Zol_b		0			0			NoCalc

**QC Validation criteria**

Exp. Group Num 1

QC Validation criteria : Difference data

NC1>LPC1 --> TRUE

LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE



**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
A1	Oxy_b	Blank-1	2.863	2.906	2.117	98.5	100		6.312
B1	Oxy_b	Blank-2	2.95			101.5			6.125
C1	Oxy_b	Cal-1	0.77	0.9035	20.9	26.49	31.09		23.47
D1	Oxy_b	Cal-2	1.037			35.68			17.43
E1	Oxy_b	Neg-1	1.524	1.607	7.346	52.43	55.31		11.86
F1	Oxy_b	Neg-2	1.691			58.18			10.69
G1	Oxy_b	High-1	0.539	0.5845	11.01	18.54	20.11		33.53
H1	Oxy_b	High-2	0.63			21.68			28.68
A2	Oxy_b	15-08265 1/1	2.76	2.76		94.96	94.96	neg	6.547
B2	Oxy_b	15-16413 1/1	2.661	2.661		91.55	91.55	neg	6.791
C2	Oxy_b	15-16623 3/1	2.656	2.656		91.38	91.38	neg	6.803
D2	Oxy_b	15-16604 1/1	2.811	2.811		96.71	96.71	neg	6.428
E2	Oxy_b	15-16611 1/1	2.672	2.672		91.93	91.93	neg	6.763
F2	Oxy_b	15-16601 1/1	2.674	2.674		92	92	neg	6.758
G2	Oxy_b	15-16617 1/1	2.695	2.695		92.72	92.72	neg	6.705
H2	Oxy_b	15-16602 1/1	2.619	2.619		90.11	90.11	neg	6.9
A3	Oxy_b	15-16618 1/1	2.786	2.786		95.85	95.85	neg	6.486
B3	Oxy_b	15-16613 1/1	2.843	2.843		97.82	97.82	neg	6.356
C3	Oxy_b	High-3	0.544	0.147	185.9	18.72	5.058		33.22
D3	Oxy_b	15-16673 2/1	2.86	2.86		98.4	98.4	neg	6.318
E3	Oxy_b	15-16724 1/1	0.919	0.919		31.62	31.62	neg	19.66
F3	Oxy_b	15-16794 2/1	2.878	2.878		99.02	99.02	neg	6.279
G3	Oxy_b	15-16824 1/1	1.311	1.311		45.11	45.11	neg	13.78
H3	Oxy_b	15-17130 1/1	2.879	2.879		99.05	99.05	neg	6.276
A4	Oxy_b	15-17132 1/1	2.718	2.718		93.51	93.51	neg	6.648

**1 Strip method names**

**2 Sample ID 1**

**3 Difference data**

**4 Difference data - Mean**

**5 Difference data - Variation coefficient**

**6 b/b0**

**7 b/b0 - Mean**

**8 Cutoff results**

**9 CONC**

	1	2	3	4	5	6	7	8	9
B4	Oxy_b	15-16969 1/1	2.752	2.752		94.68	94.68	neg	6.566
C4	Oxy_b	15-16975 1/1	2.795	2.795		96.16	96.16	neg	6.465
D4	Oxy_b	15-16975 3/1	2.891	2.891		99.47	99.47	neg	6.25
E4	Oxy_b	15-16976 1/1	2.712	2.712		93.31	93.31	neg	6.663
F4	Oxy_b	High-4	0.632			21.74			28.59
G4	Oxy_b	15-17168 1/1	2.368	2.368		81.47	81.47	neg	7.631
H4	Oxy_b	High-5	0.638	0.638		21.95	21.95	pos	28.32
A6	Oxy_b		0			0			NoCalc
D7	Oxy_b		0			0			NoCalc
G8	Oxy_b		0			0			NoCalc
C10	Oxy_b		0			0			NoCalc
E11	Oxy_b		0			0			NoCalc
G12	Oxy_b		0			0			NoCalc

**QC Validation criteria**

Exp. Group Num 1

QC Validation criteria : Difference data

NC1>LPC1 --> TRUE

LPC1>PC1 --> TRUE

PC1>HPC1 --> TRUE



# HOUSTON FORENSIC SCIENCE CENTER CORRECTIVE ACTION REPORT

### QUALITY DIVISION USE ONLY

Quality CAR #

Date Submitted:

Non-Conformance Level

Date Closed:

Date of this Report:

Division:

FCN:   
(If applicable)

Date of Incident:

Section:

#### Description of Discrepancy/Non-conformance:

On 02/19/2016, an analyst noticed the pH buffer control stock solutions used to complete performance checks of the pH meter were expired since October 2015. The secondary pH buffer control containers did not have the expiration date written on them. The expired pH buffer controls were used during performance checks on 11/02/2015 and 01/15/2016 to measure the pH of the phosphate buffered saline (PBS) for immunoassay screening. The pH meter met the performance check each time according to manufacturer's acceptance criteria which included checking and documenting the slope and mV. However, it has not been our practice to record the pH levels of the pH buffer control solutions. This PBS is added to all samples in a batch, including the cutoff, positive, and negative controls as well as case samples.

The PBS (made on 11/02/2015 and 01/15/2016) was used in a total of 30 immunoassay batches (approximately 630 cases):

11032015_ASG & 11092015_ASG
11042015_ASG & 11052015_ASG
11102015_ASG
11132015_ASG
11192015_ASG
11232015_ASG
12022015_ASG
12142015_ASG
12162015_ASG
01052016_ASG
01062016_ASG
01252016_ASG
01282016_ASG-Verification Run
01292016_ASG
02052016_ASG
02102016_ASG
02112016_ASG



# HOUSTON FORENSIC SCIENCE CENTER CORRECTIVE ACTION REPORT

02172016_ASG
02182016_ASG
Urine Cases
11102015_ASG
11132015_ASG
11172015_ASG & 11182015_ASG
11182015_ASG
11192015_ASG
11232015_ASG
01052016_ASG
01062015_ASG
01202016_ASG & 01212016_ASG-Oxy
02012016_ASG

- Actions Taken:**
1. New pH buffer solutions were ordered immediately and the expired solutions were discarded.
  2. The new solutions were used to complete a performance check on the new pH meter and the pH of the current PBS solution was verified. The new pH meter arrived in the toxicology lab on April 4, 2016 and the pH of the current PBS solution (Lot # 01152016-B) was measured on April 5, 2016, at a pH of 6.83 +/- 0.022. Refer to email from Immunalysis, dated February 29, 2016, which shows this pH is acceptable for use on casework.
  3. The "pH Meter Performance Check" (LAB-48) worksheet was updated to include columns for recording the pH at levels 4, 7, and 10 (with acceptance criteria). Additionally, pH buffer control solution lot numbers and expiration dates are being checked on a weekly basis.
  4. The expiration dates were written on the transfer containers for each pH buffer control solution when they were transferred from the stock solution containers.

**If not discovered at this point, where else in the process would this incident have been discovered?**  
 This incident would have been discovered during the next internal audit.

Technical Personnel: [Signature] Date: 4/27/16  
 Immediate Supervisor: [Signature] Date: 4/27/16  
 Section Manager: [Signature] Date: 4/26/2016  
 CODIS Administrator (if applicable): n/a Date: \_\_\_\_\_  
 Division Director: [Signature] Date: 4-27-16

In an email dated 3-3-16, <sup>ref.</sup> the old pH Meter, customer service was contacted by Tox supervisor regarding a 2.44 that flashed on the pH meter screen. Due to actions taken to address 2.44 flashing, which did not resolve the issue, a new pH meter was ordered.  
 [Signature] 4-27-16

Corrective Action Report  
 Issued by: Quality Director  
 Uncontrolled When Printed

HFSC-QDiv-CAR  
 Issue Date: October 30, 2015  
 Page 2 of 3



# HOUSTON FORENSIC SCIENCE CENTER CORRECTIVE ACTION REPORT

## Summary of Root Cause Analysis:

The root cause of this discrepancy was the lack of expiration dates written on the pH buffer control transfer containers. Although expiration dates were included on the parent bottles, analysts did not refer to these containers before using the aliquoted buffer solutions. Lab 48 also did not require this information to be recorded prior to the revision.

## Additional Information/Follow-Up:

### Toxicology Section Follow-Up:

The possibility of this incident causing false positive results is minimal because immunoassay is a presumptive screening test. All screened-positive cases are confirmed by a secondary, more specific and sensitive technique (gas chromatograph/mass spectrometry or liquid chromatograph/mass spectrometry). The possibility of this incident causing false negative results is also minimal because the PBS is added to all samples including the cutoff controls. If the PBS somehow had suppressed the signal, then it would have affected the cutoff control based on which qualitative determination (i.e., positive vs negative) is made. Furthermore, according to Immunalysis (the manufacturer of the immunoassay kits), if the PBS was lower (pH = 6) or higher (pH = 8) than expected (pH = 7), it would not affect the results of the immunoassay screen; the email correspondence with Immunalysis is enclosed at the end of the report. Additionally, an analyst measured the pH of the PBS with the BDH pH Test Strip (the Certificate of Analysis enclosed) and confirmed the pH to be 7. Another analyst verified the result. Hence the toxicology section concluded that the PBS whose pH was measured using the expired pH buffer solutions was 1) prepared correctly at pH of 7 as described in the SOP and 2) would not have changed the results of the case samples.

Based upon the information provided by section experts and supported by Immunalysis, results from casework are valid and reanalysis is not necessary.

### Quality Division Follow-Up:

On April 8, 2016, the Quality Division did a follow up with the Toxicology section to check that reagent and chemical containers were labeled appropriately. The main focus of this follow up was to ensure that the secondary bottles containing pH buffers were labeled with expiration dates. Some chemicals and in-house prepared reagents were also checked to ensure they were appropriately labeled. Refer to Appendix A for more information on chemicals and reagents which were checked.

All pH stock buffer solutions and secondary containers were labeled with their corresponding expiration dates. In addition, all of in-house created reagents were labeled with contents, initials of preparer, date, expiration date and verification date when applicable.

It was noted that a total of 3 methylene chloride bottles (a non-critical reagent) were expired. Two of these bottles were unopened and sealed. As for the 3rd bottle, this solvent was used to make extractions for in-house validation studies. All of the expired methylene chloride solvent was disposed. For extractions, the same solvent is used throughout all samples and they are also checked with controls.

Quality Director: \_\_\_\_\_

*J. Webber*

Date: \_\_\_\_\_

*4/27/2016*

## Appendix A: Toxicology Reagent/Chemical Follow up CAR 2016-018

pH Buffer	Expiration Date
Thermo Scientific pH: 4.01	2/2018
Thermo Scientific pH: 7.00	2/2018
Thermo Scientific pH: 10.01	2/2018
Thermo Scientific pH: 4.01	11/2017
Thermo Scientific pH: 7.00	11/2017
Thermo Scientific pH: 10.01	11/2017
pH: 4.01 secondary container	11/2017
pH: 7.00 secondary container	11/2017
pH: 10.01 secondary container	11/2017

Chemical Name	Opened	Expiration Date	Additional Info
Hexafluoro-2-propanol (HFIP)	8/26/2015	n/a	
Isopropyl Alcohol	11/6/2012	n/a	
Isopropyl Alcohol	3/11/2016	n/a	
n-hexane 95%	3/23/2016	n/a	
4L Methyl Alcohol, Anhydrous (2 bottles)	n/a	n/a	retest date: 09/18/2019
4L Methyl Alcohol, Anhydrous (2 bottles)	n/a	n/a	retest date: 07/8/2020
Acetone 1L (3 bottles)	n/a	n/a	Retest date: 9/27/2020
4L Chloroform (1 bottle)	n/a	n/a	
1L n-propyl alcohol (3 bottles)	n/a	n/a	
1L n-propyl alcohol (1 bottle)	n/a	n/a	
4L Hexane (1 bottle)	3/23/2016	n/a	
1L Acetone	n/a	n/a	retest date: 09/27/2020
1L Acetone	1/26/2016	n/a	retest date: 09/27/2020
4L Methylene Chloride (2 bottle)	n/a	6/9/2015	Disposed
4L Methylene Chloride (1 bottle)	10/27/2014	6/9/2015	Disposed
4L Methylene Chloride (1 bottle)	n/a	5/11/2017	
1-chlorobutane	n/a	n/a	
Ethyl Acetate	3/10/2016	n/a	

In-house prepared reagents/buffers	Preparation Date	Expiration Date	Verification Date
Dibasic Phosphate buffer	10/14/2015	4/14/2016	n/a
0.01% n-propanol (buffer bottle attached to Hamilton 7903)	1/25/2016	7/25/2016	1/26/2016
0.01% n-propanol (buffer bottle attached to Hamilton 1742)	2/18/2016	8/18/2016	2/18/2016
1M NaOH	12/23/2015	12/23/2016	n/a
1M Acetic Acid	11/9/2015	11/9/2016	n/a
0.1 M HCl	11/19/2015	11/19/2016	11/25/2015
10 M KOH	1/5/2016	1/5/2017	1/7/2016
1M HCl	6/23/2015	6/23/2016	6/25/2015
100 mM Phosphate Buffer (pH 6)	2/3/2016	8/3/2016	n/a

### Alcohol Curve & Controls

Ethanol	Lot Number	Expiration Date	Additional Info
200mg	FN05211403	7/2019	
100ug	FN03251502	5/2020	
500ug	FN01301506	2/2020	
1000ug	FN06041502	9/2020	Not in discovery website because it has not been used in casework
4000ug	FN01301503	4/2020	
500ug	FN07031402	8/2019	
Whole Blood Ethanol Control Level 1	BQC1 #140703 (3 bottles)	07/2018	



# Houston Forensic Science Center

## INTEROFFICE MEMO

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**To:** File  
Melinda Wilson-Hohler, PhD, Senior Forensic Analyst – Toxicology  
Melinda K. Wilson Hohler

**From:** Dayong Lee, PhD, Manager – Toxicology  
Dayong Lee

**cc:** Lori Wilson, Quality Director

**Date:** March 16, 2016

**Re:** pH

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This memo is to document that pH of the buffer solutions used in immunoassay and method validation can be measured with the pH meter or pH test strips.

The Toxicology Section's practice has been to prepare the forensic diluent (section 16.3.5. of the analytical manual) using the pH meter to measure the pH of the buffer used in the immunoassay. Section 9.5.3 of the analytical manual states that use of a 3-point performance check is a preferred method when an accuracy of  $\pm 0.1$  or better is required. In preparation of the forensic diluent for immunoassay, two buffers (monobasic sodium phosphate and dibasic sodium phosphate) are mixed together so that the solution can be used in the assay to dilute control and calibrator sub-stock standards. The drugs that are being tested are acidic, basic, and neutral in composition and the use of one buffer simplifies the process of preparing casework solutions. The procedure does not require accuracy of the solution pH to be within  $\pm 0.1$  of the target (pH 7.0); please see the attached email correspondence from the representative of the immunoassay kit manufacturer (Immunoanalysis).

The pH of the current buffer, measured using the pH Test Strips BDH® (certificate of analysis enclosed), was determined to be 7. The measurement was further verified by another analyst to be 7. This pH will be documented on the reagent preparation log and saved with a signature. The verification adds an additional step to ensure the pH measurement is correct. This indicates that for the purpose of preparing the immunoassay buffer, the pH test strips can be used in substitution of the pH meter, which is currently out of service.

Similarly, during the method development process for the opioid confirmation assay using gas chromatography-mass spectrometry (GC-MS), a phosphate buffer at the approximate pH of 6 is used. While it has been our practice to use the pH meter to measure the pH of buffer solutions, the phosphate buffer for the opioid confirmation assay does not need the level of accuracy that the pH meter provides. During the validation phase for this quantitative confirmation, which will start in the near future, two preparations of the buffer will be used. These solutions were prepared and their pH values were determined to be 6, using the pH test strip. This pH will be documented on the reagent preparation log and saved with a signature. The verification of the pH by another analyst adds an additional step to ensure the pH measurement is correct. Furthermore, if the validation study shows that the assay is fit for use, this will demonstrate that the buffer whose pH was adjusted using the pH test strip produces accurate and reliable results.

The pH accuracy of 0.1 is not required by the current SOP for preparation of buffer solutions for the immunoassay or the opioid confirmation assay. When the new pH meter is available, pH of the buffer solutions will be measured to verify that it is at pH of 7 for the immunoassay buffer and at pH of 6 for the opioid assay buffer.

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## Certificate of Analysis

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**Catalog No.:** BDH35309.606  
**Product Name:** BDH PH TEST STRIP 0-14  
**Lot No.:** 10BDH4135 (5113)  
**Gradation/Range:** pH 0-1-2-3-4-5-6-7-8-9-10-11-12-13-14  
**Expiration Date:** 2017-12

This document confirms that the above mentioned product has successfully passed the Manufacturer's quality control system in accordance with ISO 9001:2008 and meets the specific quality criteria.

This product has been tested in standard buffer solutions of suitable concentrations. The quality of colour assignment of the reaction colour and colour scale determines the quality of the product supplied.

Date of Examination: December 13, 2013

This document has been produced electronically and is valid without a signature.

Distributed Exclusively by  
**VWR** 

**Dayong Lee, Ph.D.**

---

**From:** Laura Mayor, MS  
**Sent:** Thursday, March 03, 2016 2:47 PM  
**To:** Dayong Lee, Ph.D.; Lori Wilson, BS ASQ CQA  
**Cc:** Quality; Andrea Gooden; Irma Rios, MBA  
**Subject:** RE: Corrective Action Report regarding expired pH buffer

Quality,

We contacted customer service, and the guy I talked to said that the 2.44 that flashed on the screen had to do with the software, but the three dashes is not normal. He suggested to take out the batteries and remove the back panel for a day, it may have gotten wet inside. He then said if that doesn't work, he said look for a new meter. The company has stop manufacturing the meter we have.

Taking out the batteries did not work. So, we are buying a new pH meter.

What do we need to do about the corrective action now? Is the data that we gave Jackie sufficient (the pH readings from the last time it was used)?

Thanks,  
Laura

---

**From:** Dayong Lee, Ph.D.  
**Sent:** Monday, February 22, 2016 3:59 PM  
**To:** Lori Wilson, BS ASQ CQA  
**Cc:** Quality; Andrea Gooden; Laura Mayor, MS; Irma Rios, MBA  
**Subject:** Corrective Action Report regarding expired pH buffer

Lori,

Enclosed is a draft of the Corrective Action Report on expired pH buffer for which I notified last Friday. I understand that a meeting with Quality needs to be occurred to determine whether this should be a CA or incident report. But we went ahead and wrote a draft to give you more information.

I will be out of office for the rest of the week but Laura and Andrea will be available to discuss the incident this week.

Thank you for your help.

Dayong

Dayong Lee, Ph.D.  
Toxicology Manager  
Ofc: 713-308-2640  
Cell: 832-993-0175  
Houston Forensic Science  
1301 Fannin St, Suite 170  
Houston, Texas 77002



# Houston Forensic Science Center

Forensic Analysis Division - Toxicology

## pH Meter Performance Check

Manufacturer: Thermo Scientific

Model: STARA2140

Serial Number: X29761

### Weekly Maintenance:

Refill electrode and verify expiration date

Rinse electrode

Date: \_\_\_\_\_

Verify electrode storage solution and expiration date

Verify pH buffer solution expiration dates

Signature: \_\_\_\_\_

Comments: \_\_\_\_\_

Date	Signature	pH 4.01*	pH 7.00*	pH 10.01*	Slope (%) (90-110%)	Pass/Fail
		Temperature (°C)	Temperature (°C)	Temperature (°C)		

**\*Target pH at the reported temperature: ± 0.022  
Refer to pH buffer solution bottle label.**

Form Complete Date/Signature:

**From:** [Andrea Gooden](#)  
**To:** [Dayona Lee, Ph.D.](#)  
**Subject:** Fw: pH of PBS Buffer  
**Date:** Monday, March 14, 2016 2:59:19 PM

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**From:** Timbang, Rochelle <[RTimbang@immunalysis.com](mailto:RTimbang@immunalysis.com)>  
**Sent:** Monday, February 29, 2016 11:54 AM  
**To:** Andrea Gooden  
**Subject:** RE: pH of PBS Buffer

Andrea,

There shouldn't be an effect if the pH is slightly below 7 (6 or 8) to the assay.

Thank you,  
Rochelle

---

**From:** Andrea Gooden [<mailto:AGooden@houstonforensicscience.org>]  
**Sent:** Monday, February 29, 2016 9:52 AM  
**To:** Timbang, Rochelle  
**Subject:** pH of PBS Buffer

Rochelle,

---

I just have a question about the pH of the phosphate buffer solution (PBS). What would happen to the samples or controls if the PBS was at a lower or higher pH (lets say 6 or 8)?

Thank you in advance,  
Andrea

Andrea Gooden  
Forensic Analyst  
Ofc: 713-308-2628  
Cell:  
Houston Forensic Science Center  
1301 Fannin St, Suite 170  
Houston, Texas 77002



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