

Message

From: Sharada Sivaraman [/O=THERANOS ORGANIZATION/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=SSIVARAMAN]
Sent: 8/15/2013 3:21:06 PM
To: Surekha Gangakhedkar [surekhag@theranos.com]; Sunny Balwani [sbalwani@theranos.com]; Elizabeth Holmes [eholmes@theranos.com]; Samartha Anekal [sanekal@theranos.com]; Daniel Young [dyoung@theranos.com]
Subject: 3.5 data from last night's runs: new laser cut parts, revised protocol and no label cartirdes

Please see attached.. We are still seeing some highs CV. We also had one cartridge where enough sample mixture was not picked.,

Sharada

8/14/2013

TSH Stand-Alone protocol 3.5

TSH Tip 1 and 2 TSH cartridges (NEW LASER COMPONENTS, Unlabeled) DOM 8-14-2013

C:\Theranos\Protocols\TSH\TSH_20uL_level3.xml

Rev 2804

(aspiration wait times and blood tip dispense heights to match 3.0 protocols)

Reader				Raw RLU		Corrected RLU		Intra-Cartridge	
	Calibrator #	[TSH] uIU/ml	R value	Tip 1	Tip 2	Tip 1	Tip 2	Mean	%CV
Retro 5	2	50	1.007494	191684	146881	193120	147982	170551	18.7
Vishnu-9			1.025483	144587	157641	148271	161658	154965	6.1
Retro 8			0.829398	249524	226054	206955	187489	197222	7.0
Retro 5	4	10	1.007494	45633	41775	45975	42088	44032	6.2
Vishnu-9			1.025483	24009	31321	24621	32119	28370	18.7
Retro 8			0.829398	44207	42302	36665	35085	35875	3.1
Retro 5	5	5	1.007494	20339	19680	20491	19827	20159	2.3
Vishnu-9			1.025483	2555	4598	2620	4715	3668	40.4
Retro 8			0.829398	21631	16269	17941	13493	15717	20.0
Retro 5	7	1	1.007494	4275	3787	4307	3815	4061	8.6
Vishnu-9			1.025483	3209	4006	3291	4108	3699	15.6
Retro 8			0.829398	4687	4576	3887	3795	3841	1.7
Retro 5	8	0.5	1.007494	2308	1947	2325	1962	2143	12.0
Vishnu-9			1.025483	1387	1202	1422	1233	1327	10.1
Retro 8			0.829398	1915	1127	1588	935	1262	36.6
Retro 5	9	0.25	1.007494	1257	1153	1266	1162	1214	6.1
Vishnu-9			1.025483	947	662	971	679	825	25.0
Retro 8			0.829398	826	761	685	631	658	5.8
Retro 5	10	0.1	1.007494	576	576	580	580	580	0.0
Vishnu-9			1.025483	406	417	416	428	422	1.9

Retro 8			0.829398	408	552	338	458	398	21.2
Retro 5			1.007494	108	120	109	121	115	7.4
Vishnu-9	12	0	1.025483	125	222	128	228	178	39.5
Retro 8			0.829398	350	141	290	117	204	60.2

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650-838-9292 www.theranos.com

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From: Sharada Sivaraman

Sent: Wednesday, August 14, 2013 1:42 PM

To: Surekha Gangakhedkar; Sunny Balwani; Elizabeth Holmes; Samartha Anekal; Daniel Young

Subject: 3.5 data so far with new laser cut components

Please see below for 3.5 data so far on the cartridges that were assembled yesterday evening with the newly cut capture layers and wicking pads . The other changes were that the 3.5 devices have now been sped up to match the 3.0s. This set had the labels on them as well. The last run is in progress to finish this dataset.

The good news is that in all the runs so far (starting Fri night till today) we have not seen any tip drop-offs or pump errors.

It looks like the newly cut parts may be helping but we are still seeing the **low outliers** that are giving rise to 30-60% intra Cvs. We are also seeing high inter Cvs.

Please find attached the file with all the TSH assays testing on different tabs to see all the data so far.

We are ready to test the revised version of the protocol which was watched on the open reader and appears to compare well with the 3.0 version.

The next plan is to have cartridges without labels and with the newly cut pads with the revised protocol to see if these incremental changes can now be combined to test if CVs improve.

More cartridges will need to be built for this and I wanted to know if we can have more of these pads cut at least for 24 more.

Sam: Please let me know if this is possible, Esther and her team have the reagents to build 24 more to support our next run.

Thanks,

Sharada

8/14/2013

TSH Stand-Alone protocol 3.5

TSH Tip 1 and 2 TSH cartridges (NEW LASER COMPONENTS, with top labels) DCM 8-13-2013

C:\Theranos\Protocols\TSH\TSH_20ul_level3.xml

Rev 2795

3.5 axis movements set to higher speed to match 3.0

Reader	Calibrator #	[TSH] uIU/ml	R value	Raw RIU		Corrected RIU		Intra-Cartridge		Inter-Cartridge			Notes
				Tip 1	Tip 2	Tip 1	Tip 2	Mean	%CV	Mean	%CV	Mod	
Retro 5	2	50	1.007494	198923	202652	200414	205188	202801	1.7	160515	24.9	1285	droplet D1 (and tiny drop D2)
Vishnu-9			1.025483	137397	165515	140898	169733	155316	13.1				
Retro 6			0.829398	169798	127893	140830	105029	123430	15.9				
Retro 5	4	10	1.007494	41316	38990	41626	39282	40454	4.1	34559	26.0	277	droplet D1
Vishnu-9			1.025483	28088	19114	28804	19601	24202	26.9				
Retro 8			0.829398	45375	50719	35975	42065	39021	11.0				
Retro 5	5	5	1.007494	23929	20518	24108	20672	22390	10.9	15232	41.5	130	droplet: D1 (and tiny drop D2) droplet: D1
Vishnu-9			1.025483	13064	4540	13357	4556	9026	68.5				
Retro 6			0.829398	21946	19722	18202	16357	17280	7.5				
Retro 5	7	1	1.007494	3929	3913	3953	3942	3950	0.3	3321	16.7	27	droplet: D1 droplet: D1
Vishnu-9			1.025483	2745	2931	2815	3006	2910	4.6				
Retro 8			0.829398	3455	4024	2866	3337	3102	10.3				
Retro 5	8	0.5	1.007494	993	1984	1000	1999	1500	47.1	1763	36.3	14	droplet: D1
Vishnu-9			1.025483	1282	1248	1315	1280	1297	1.9				
Retro 8			0.829398	2887	3126	2394	2593	2494	5.6				
Retro 5	9	0.25	1.007494	1104	977	1112	984	1048	8.6	995	5.8	8	droplet D1
Vishnu-9			1.025483	718	1102	736	1130	933	25.8				
Retro 6			0.829398	1438	979	1193	812	1002	26.3				
Retro 5	10	0.1	1.007494			0	0	0	#DIV/0!	0	#DIV/0!	0	
Vishnu-9			1.025483			0	0	0	#DIV/0!				
Retro 8			0.829398			0	0	0	#DIV/0!				
Retro 5	12	0	1.007494	135	40	136	40	88	76.8	125	30.9		droplet: D1 droplet: D2
Vishnu-9			1.025483	138	184	142	189	165	20.2				
Retro 8			0.829398	146	147	121	122	122	0.5				

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