ADNI UPenn Biomarker Core Laboratory

ADNI DOD report

$A\beta_{1-42}$, $t-Tau$ and $p-Tau_{181}$

2014-12-23

Luminex assay by:
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Leslie M. Shaw, Ph.D.

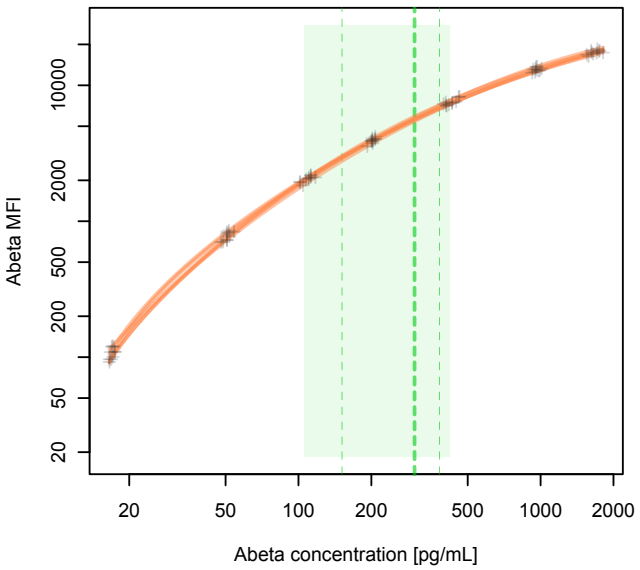
Contents

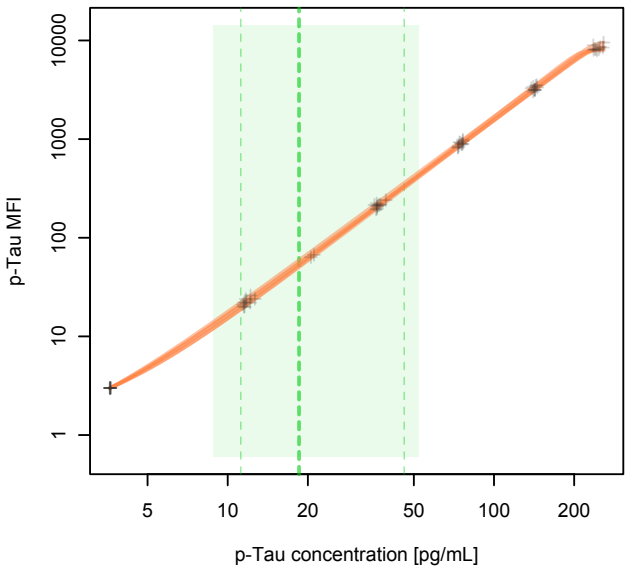
Analytical summary

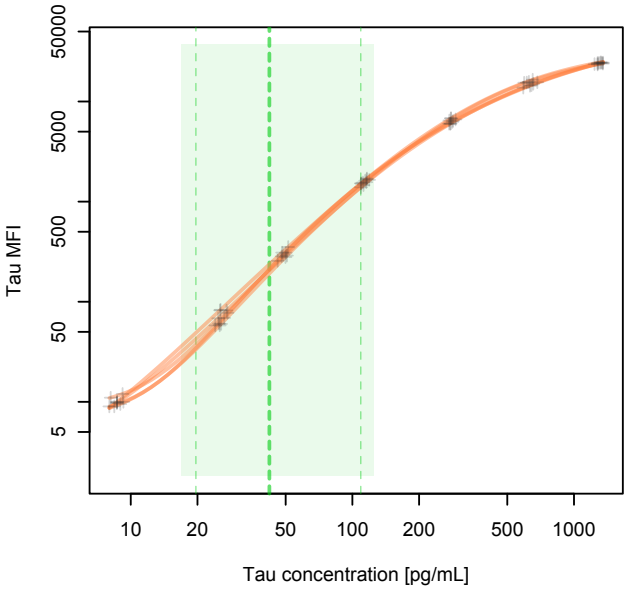
Summary of runs

No.	Platform	S/N	Operator	Standards & Kit Lot #	Date	Wells
1	xPONENT	LX10010180403	Teresa Waligorska	S236947_K242298	2014-10-23	96
2	xPONENT	LX10010180403	Teresa Waligorska	S236947_K242298	2014-10-24	96
3	xPONENT	LX10010180403	Teresa Waligorska	S236947_K242298	2014-10-28	96
4	xPONENT	LX10010180403	Teresa Waligorska	S236947_K242298	2014-10-31	96
5	xPONENT	LX10010180403	Teresa Waligorska	S236947_K242298	2014-11-07	96

Calibration Curve Plots

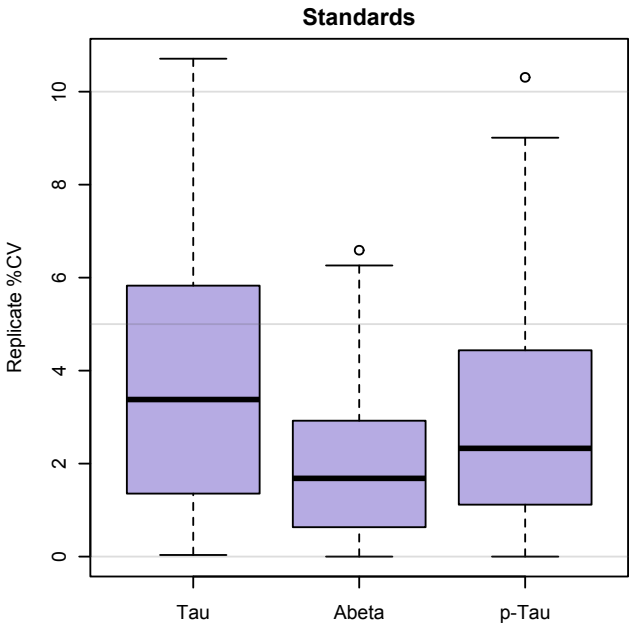


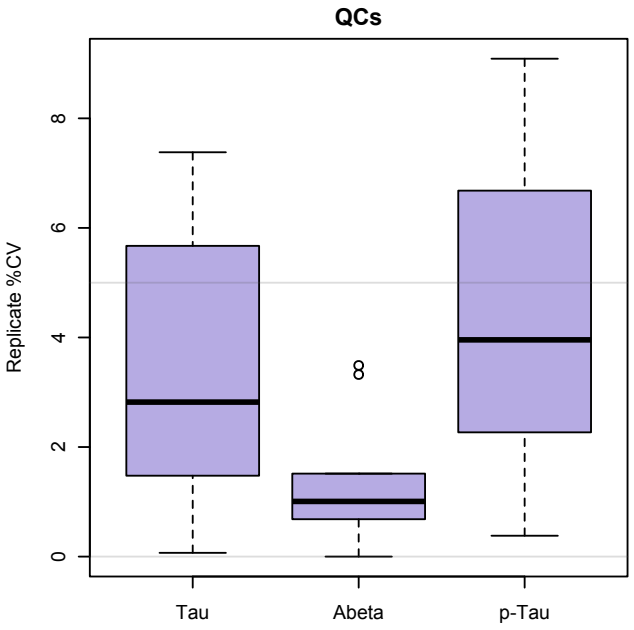


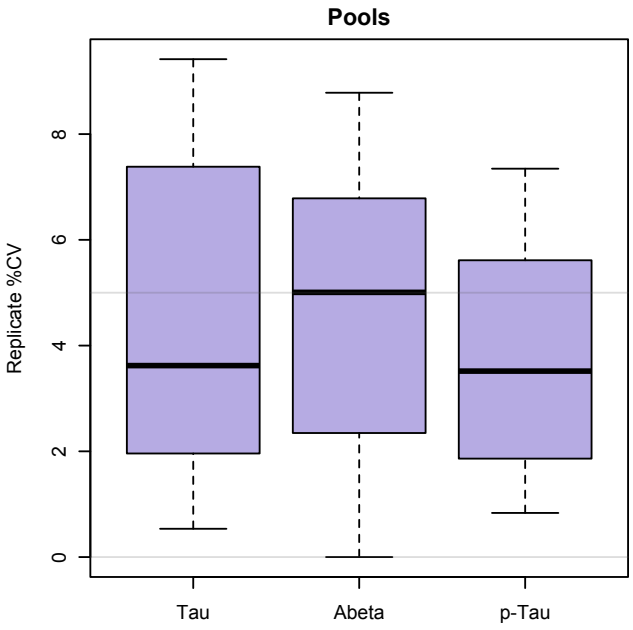


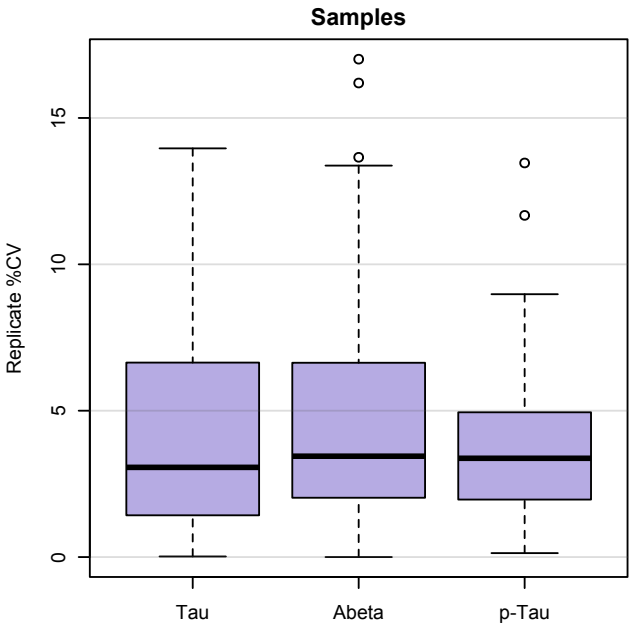
Coefficient	Abeta			p-Tau			Tau		
	Median	2.5% CI	97.5% CI	Median	2.5% CI	97.5% CI	Median	2.5% CI	97.5% CI
a	-94.97	-187.5	-7.992	0.9606	0.7685	1.33	6.499	2.126	8.651
b	51085	35512	66059	8654	7981	9664	56252	31937	69788
c	101.2	21.09	916.5	237.1	212.5	240.5	163	60.8	395.9
d	-0.4615	-0.8665	-0.4173	-20.74	-23.32	-18.09	-0.7418	-1.353	-0.6013
f	5.033	1.443	8.156	0.09629	0.08914	0.1101	4.355	1.64	7.359

Replicate Precision Summary









Duplicate precision results for Standards.

Standards	N	Mean [%]	Median [%]	Minimum [%]	Maximum [%]
Tau	32	3.121	2.328	0	10.31
Abeta	35	3.855	3.378	0.03458	10.71
p-Tau	30	1.993	1.683	0	6.59

Duplicate precision results for QCs.

QCs	N	Mean [%]	Median [%]	Minimum [%]	Maximum [%]
Tau	10	4.352	3.957	0.3809	9.089
Abeta	10	3.483	2.82	0.06854	7.381
p-Tau	10	1.324	1.007	0	3.49

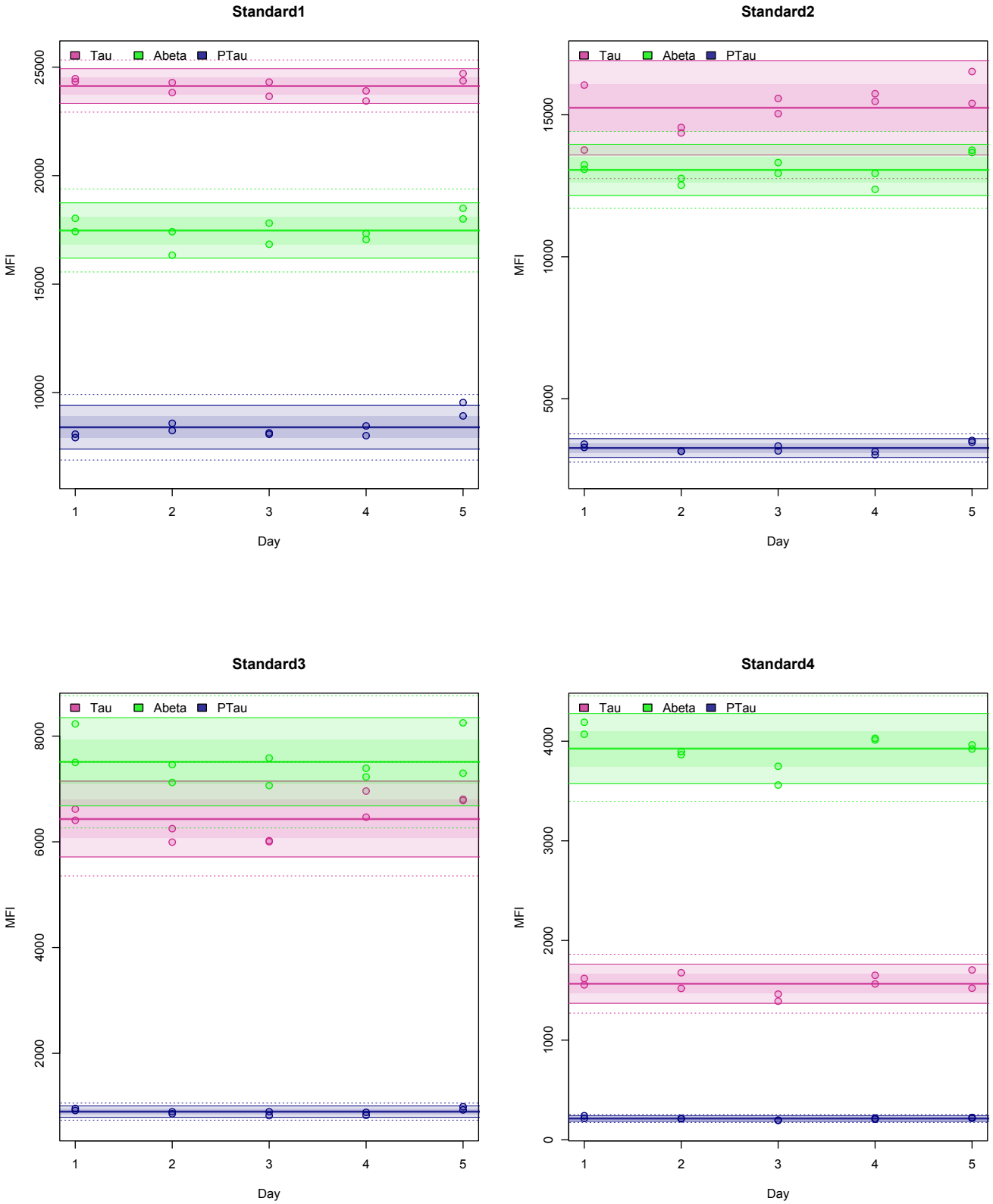
Duplicate precision results for Pools.

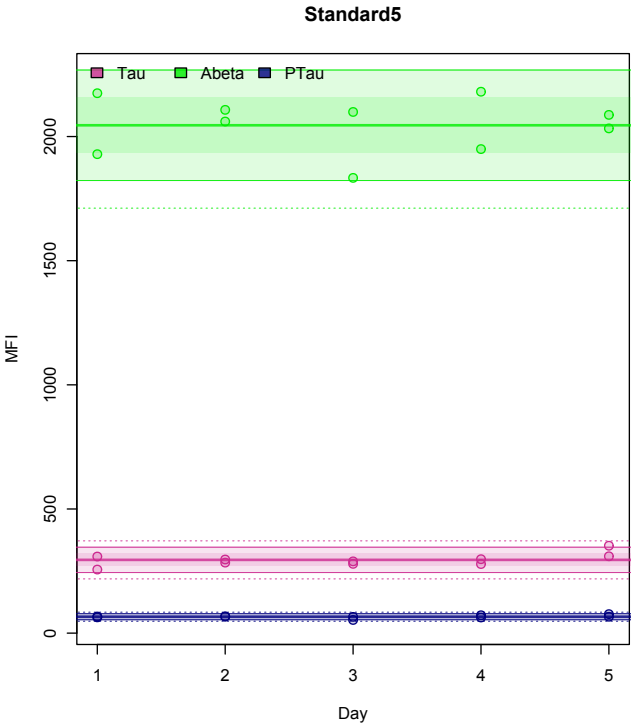
Pools	N	Mean [%]	Median [%]	Minimum [%]	Maximum [%]
Tau	10	3.682	3.517	0.8347	7.346
Abeta	10	4.467	3.621	0.5351	9.417
p-Tau	10	4.799	5.007	0	8.782

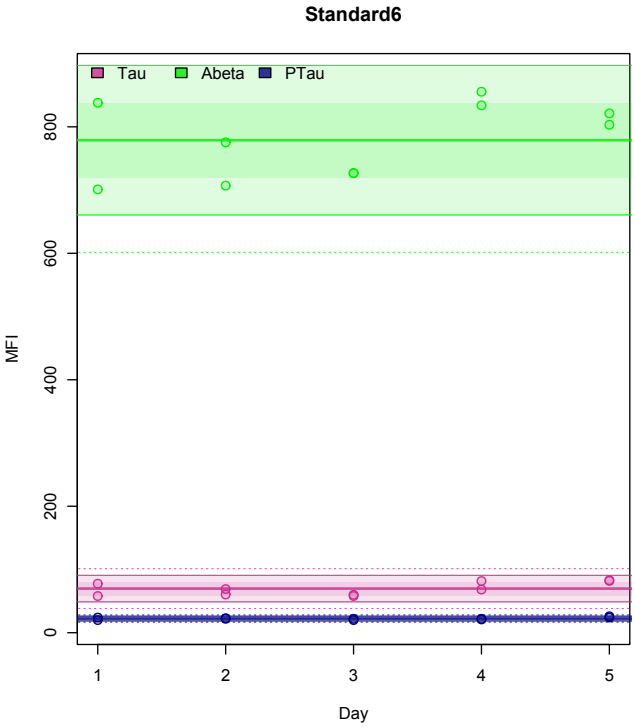
Duplicate precision results for ADNI CSF samples.

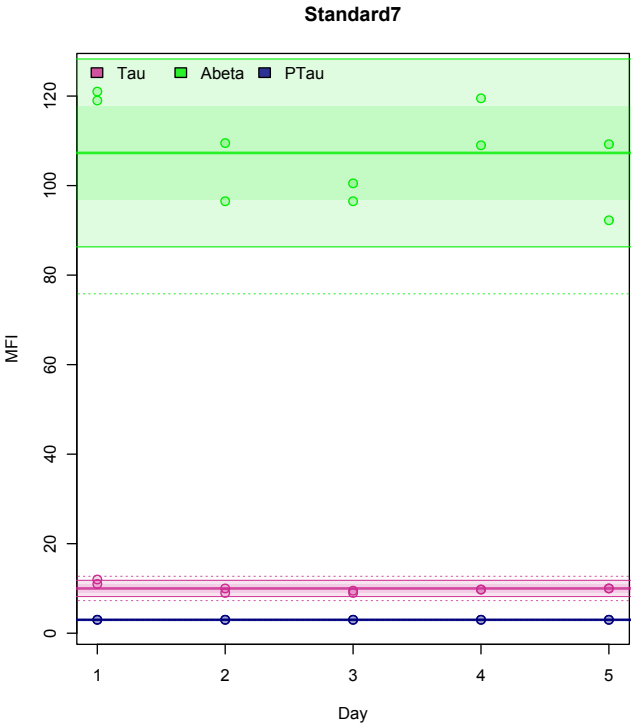
Samples	N	Mean [%]	Median [%]	Minimum [%]	Maximum [%]
Tau	66	3.928	3.375	0.135	13.46
Abeta	72	4.38	3.064	0.02022	13.96
p-Tau	71	4.762	3.446	0	17.01

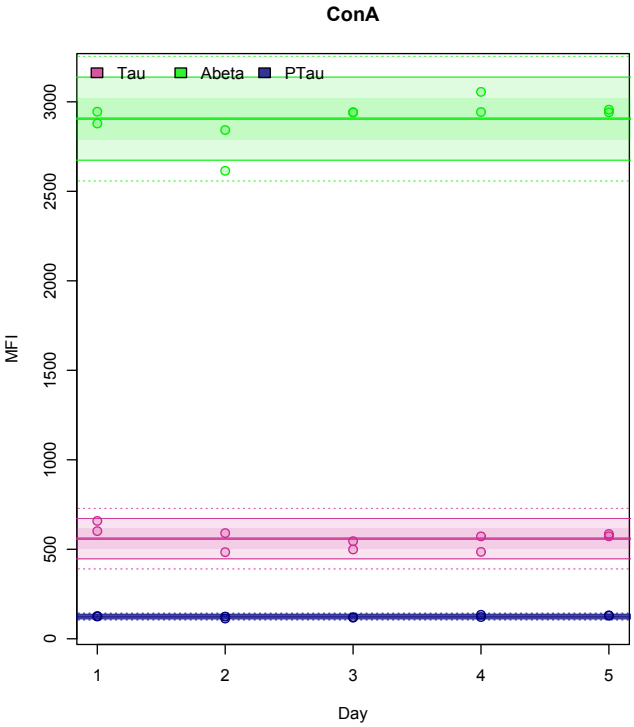
Longitudinal precision of MFI

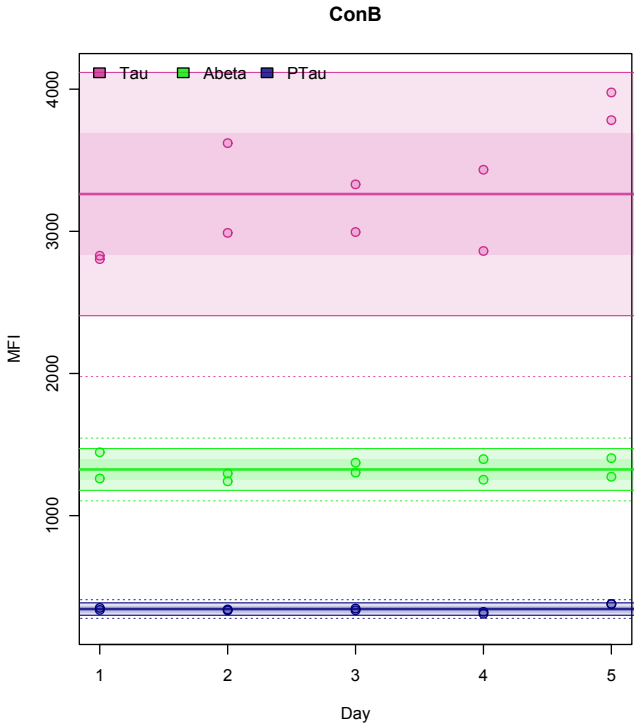


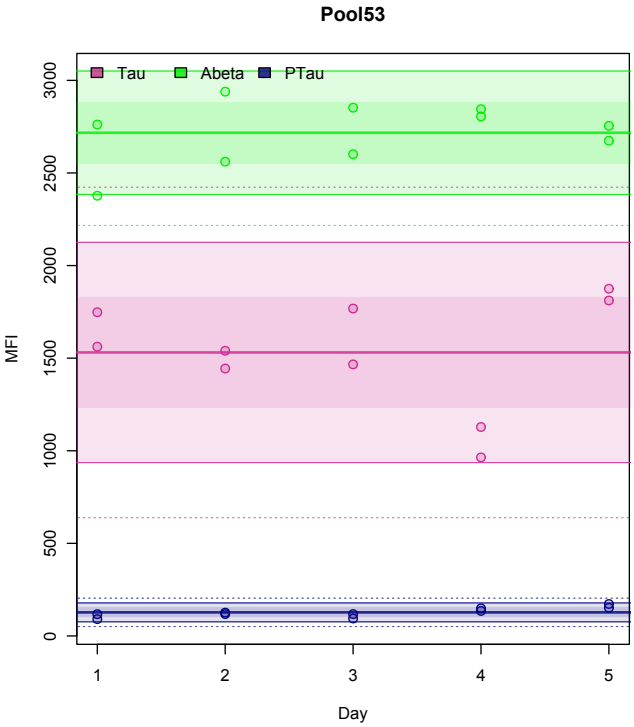

Standard5
Tau
Abeta
PTau
MFI
0
500
1000
1500
2000
1
2
3
4
5
Day

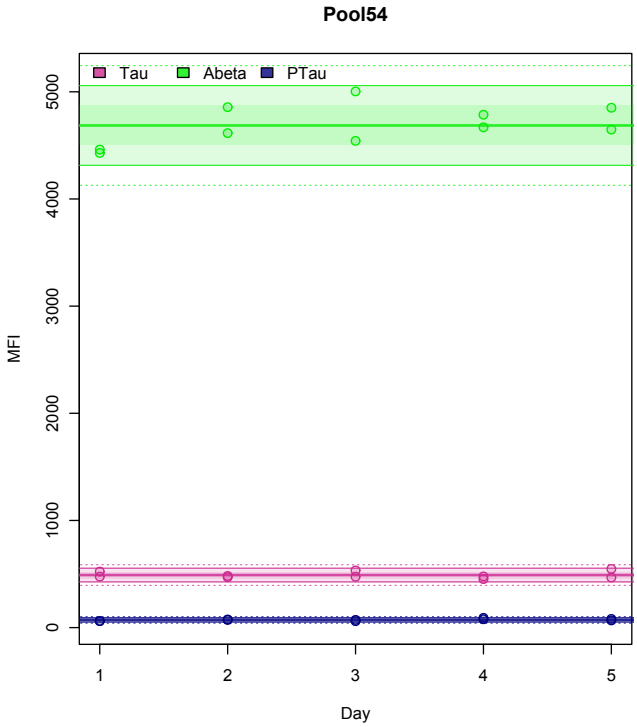

Standard6
Tau
Abeta
PTau
MFI
0
200
400
600
800
1
2
3
4
5
Day


Standard7
Tau
Abeta
PTau
MFI
0
20
40
60
80
100
120
1
2
3
4
5
Day

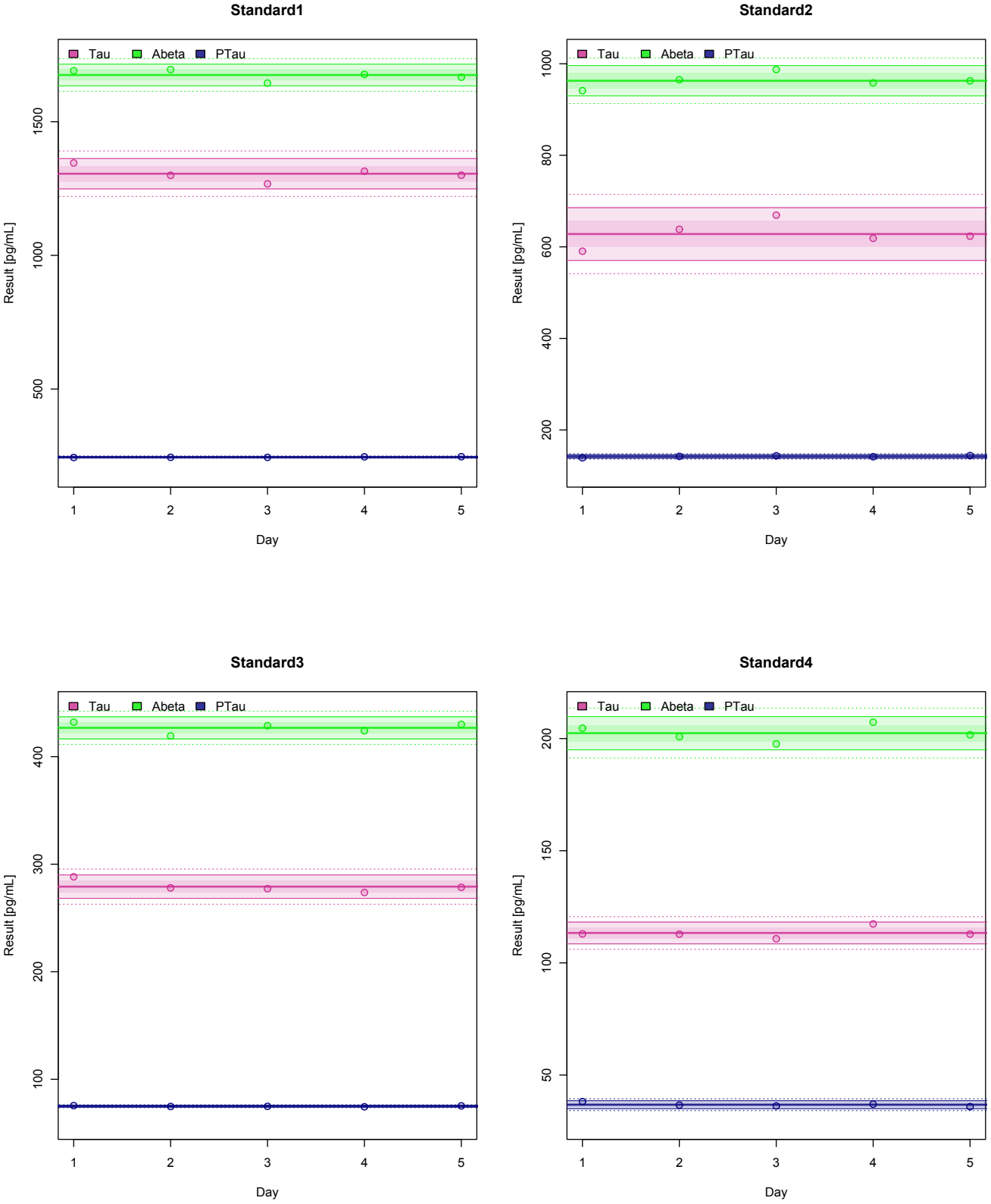

ConA
Tau
Abeta
PTau
MFI
Day
0
500
1000
1500
2000
2500
3000
1
2
3
4
5

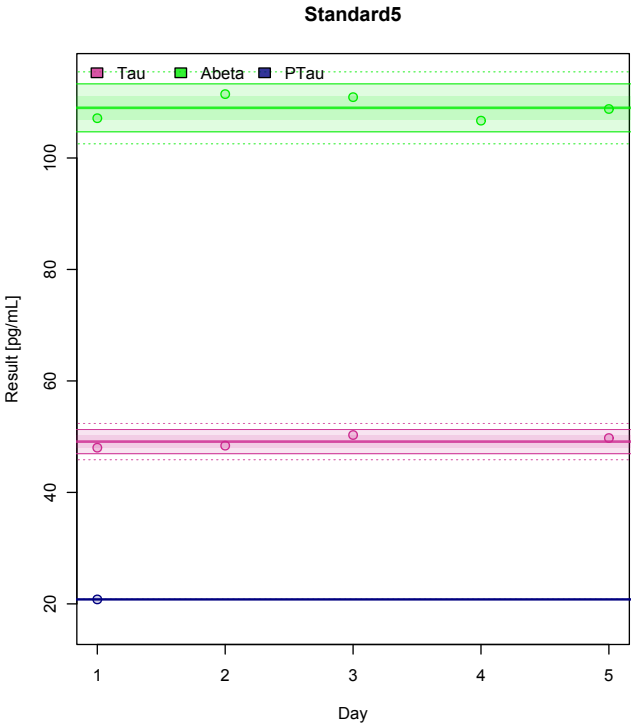

ConB
Tau
Abeta
PTau
MFI
Day
1000
2000
3000
4000
1
2
3
4
5

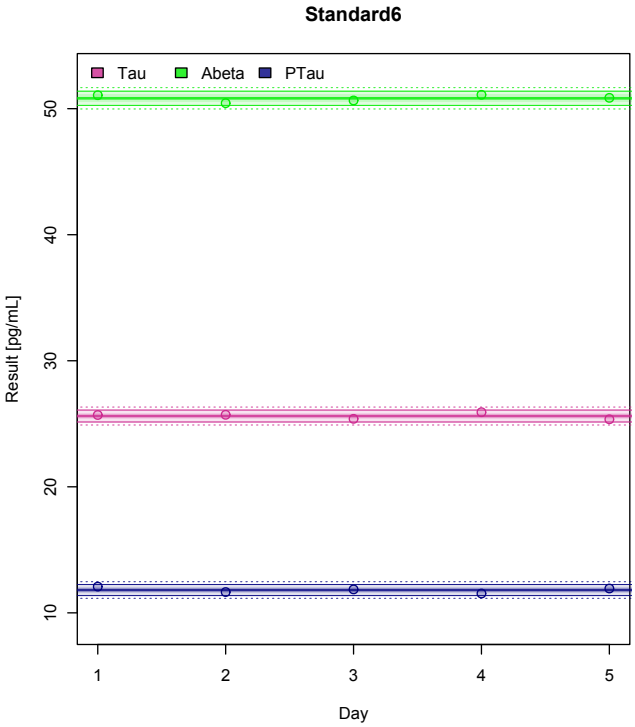

Pool53
Tau
Abeta
PTau
MFI
Day
0
500
1000
1500
2000
2500
3000
1
2
3
4
5

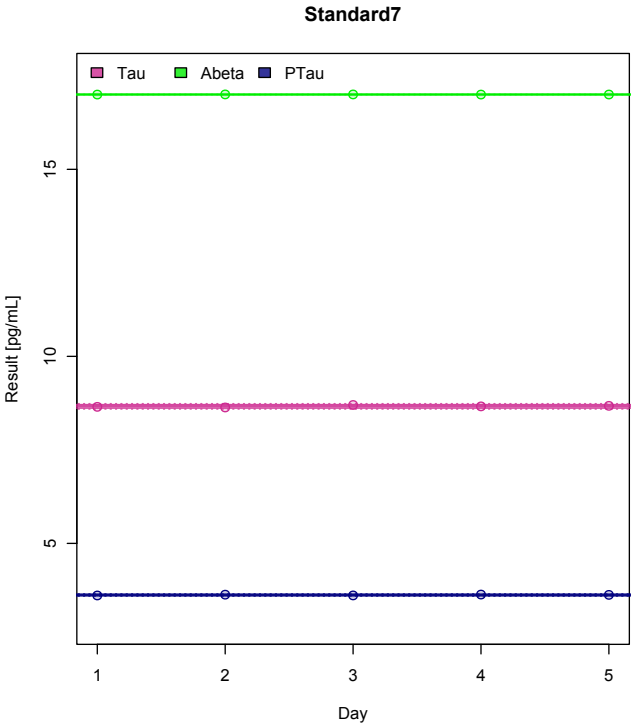

Pool54
Tau
Abeta
PTau
MFI
Day
0
1000
2000
3000
4000
5000
1
2
3
4
5

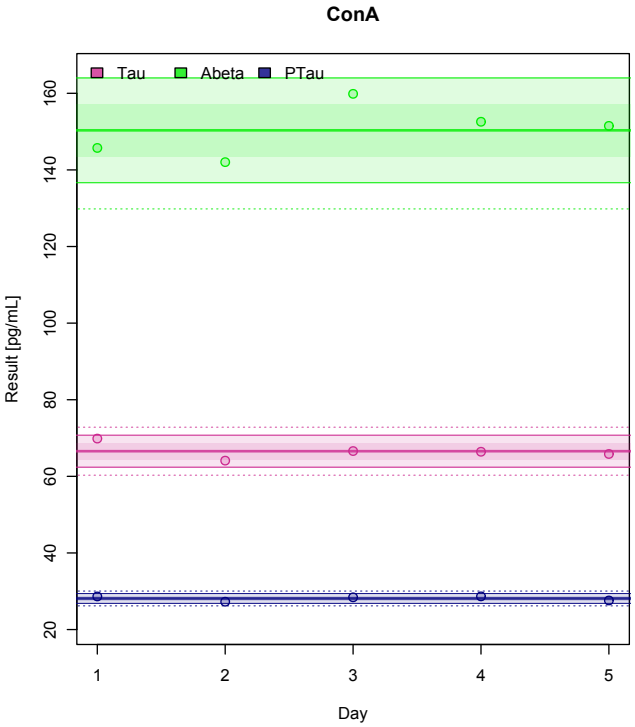
Longitudinal precision of Results

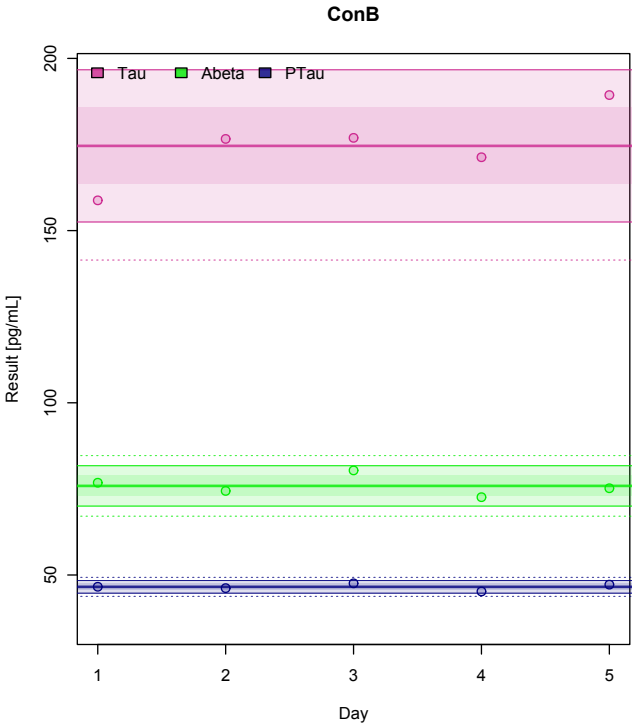


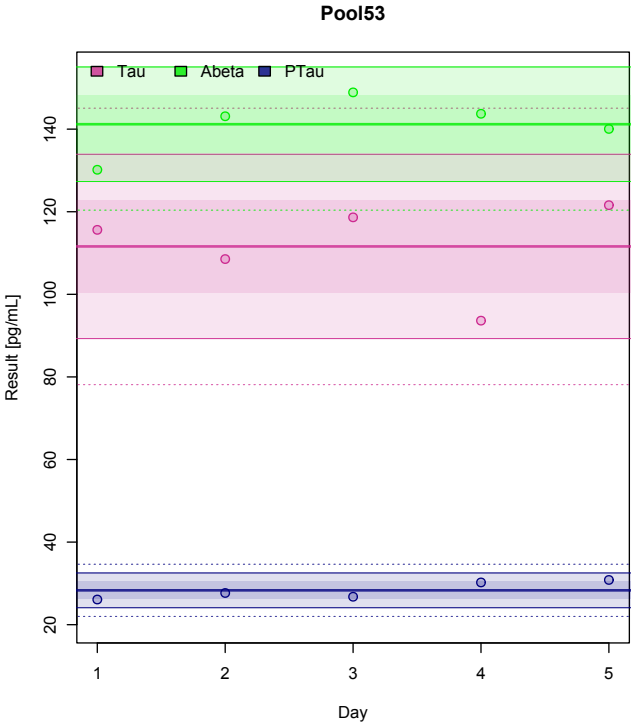

Standard5
Tau
Abeta
PTau
Result [pg/mL]
20
40
60
80
100
1
2
3
4
5
Day

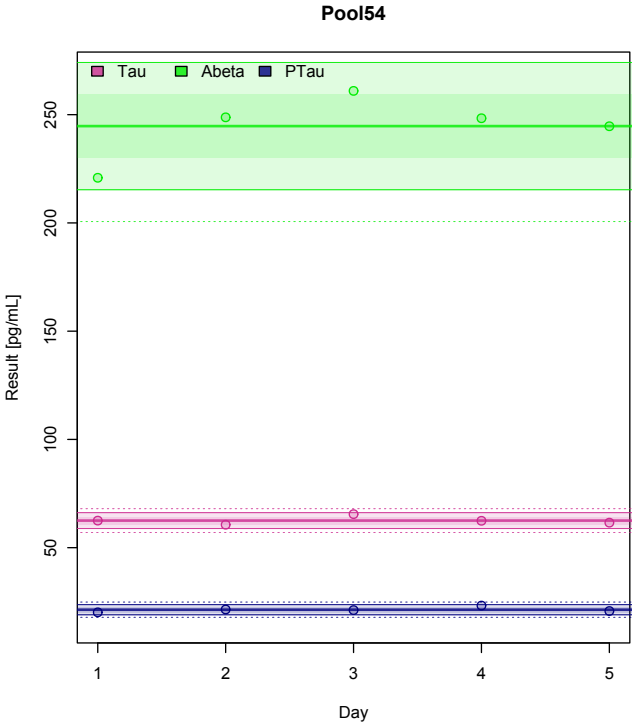

Standard6
Tau
Abeta
PTau
Result [pg/mL]
10
20
30
40
50
1
2
3
4
5
Day


Standard7
Tau
Abeta
PTau
Result [pg/mL]
5
10
15
1
2
3
4
5
Day


ConA
Tau
Abeta
PTau
Result [pg/mL]
Day


ConB
Tau
Abeta
PTau
Result [pg/mL]
Day


Pool53
Tau
Abeta
PTau
Result [pg/mL]
Day


Pool54
Tau
Abeta
PTau
Result [pg/mL]
Day

Analyte	Sample	N	Mean	SD	2.5% CI	97.5% CI	Imprecision (%CV)	Inaccuracy (%)
Tau	Standard1	5	1305	28.35	1271	1343	2.17	-4.29
	Standard2	5	628	28.83	593.2	666.1	4.59	6.98
	Standard3	5	279.1	5.45	274.1	287.3	1.95	-1.01
	Standard4	5	113.3	2.429	111	116.9	2.14	-2.29
	Standard5	4	49.12	1.084	48.05	50.26	2.21	4.50
	Standard6	5	25.61	0.2369	25.36	25.9	0.92	-1.48
	Standard7	5	8.665	0.02549	8.635	8.698	0.29	0.05
Abeta	Standard1	5	1675	20.4	1647	1695	1.22	0.53
	Standard2	5	962.9	16.57	942.9	985.1	1.72	4.48
	Standard3	5	426.8	5.141	419.8	431.9	1.2	-0.08
	Standard4	5	202.4	3.709	197.9	207	1.83	-5.69
	Standard5	5	109	2.152	106.7	111.4	1.97	-5.45
	Standard6	5	50.82	0.2821	50.46	51.1	0.56	7.37
	Standard7	5	17	0.001824	17	17	0.01	-1.09
p-Tau	Standard1	5	245.3	1.315	244	246.9	0.54	-0.37
	Standard2	5	142.1	1.898	139.4	144	1.34	1.78
	Standard3	5	74.94	0.4367	74.44	75.48	0.58	-1.65
	Standard4	5	36.78	0.8822	35.92	38.06	2.4	0.20
	Standard5	1	20.8	NA	20.8	20.8		0.93
	Standard6	5	11.81	0.2198	11.54	12.07	1.86	-0.35
	Standard7	5	3.62	0.01139	3.608	3.632	0.31	0.00

Analyte	Sample	N	Mean	SD	2.5% CI	97.5% CI	Imprecision (%CV)	Inaccuracy (%)
Tau	ConA	5	66.56	2.089	64.28	69.53	3.14	-2.11
	ConB	5	174.6	11.05	160	188.1	6.33	-5.11
Abeta	ConA	5	150.3	6.839	142.4	159.1	4.55	-3.04
	ConB	5	75.87	2.932	72.78	80.01	3.86	-3.01
p-Tau	ConA	5	28.12	0.6437	27.3	28.66	2.29	2.97
	ConB	5	46.55	0.9199	45.32	47.54	1.98	3.93

Analyte	Sample	N	Mean	SD	2.5% CI	97.5% CI	Imprecision (%CV)
Tau	Pool53	5	111.6	11.16	95.12	121.3	10
	Pool54	5	62.51	1.835	60.69	65.19	2.94
Abeta	Pool53	5	141.2	6.937	131.2	148.4	4.91
	Pool54	5	244.7	14.69	223.2	259.8	6
p-Tau	Pool53	5	28.32	2.106	26.16	30.77	7.44
	Pool54	5	21.35	1.175	20.19	23.07	5.51

Patient results

Table of patient results

#	Date	Sample	Abeta	Tau	p-Tau
1	2014-10-23	99_S_0049434	307.93	44.43	21.11
2	2014-10-23	27_S_0053829	294.62	38.23	17.03
3	2014-10-23	21_S_0064733	336.35	39.82	16.48
4	2014-10-23	127_S_0068236	348.25	41.38	19.76
5	2014-10-23	82_S_0071326	366.50	54.29	18.82
6	2014-10-23	145_S_0074837	349.41	50.87	18.96
7	2014-10-23	5_S_0078643	292.58	33.06	15.26
8	2014-10-23	82_S_0079847	329.60	40.68	16.83
9	2014-10-23	82_S_0080428	335.85	56.72	18.53
10	2014-10-23	82_S_0084739	187.72	48.27	19.12
11	2014-10-23	73_S_0085640	307.60	43.78	17.42
12	2014-10-24	14_S_0086440	272.26	43.42	17.04
13	2014-10-24	14_S_0088747	312.42	37.46	13.26
14	2014-10-24	73_S_0094338	181.10	121.06	45.55
15	2014-10-24	73_S_0095643	367.29	57.25	18.68
16	2014-10-24	14_S_0099651	421.23	58.32	20.19
17	2014-11-07	73_S_0103313	250.34	24.71	13.54
18	2014-10-24	127_S_0106420	238.39	61.54	23.88
19	2014-10-24	127_S_0108121	323.40	35.18	18.97
20	2014-10-24	27_S_0108525	152.26	108.58	35.16
21	2014-10-24	27_S_0109224	159.61	52.98	23.83
22	2014-10-24	14_S_0110007	325.90	41.45	19.95
23	2014-10-28	27_S_0111817	277.12	30.06	12.68
24	2014-10-28	27_S_0112011	343.62	72.31	34.49
25	2014-10-28	127_S_0112920	343.64	X	19.20
26	2014-10-28	21_S_0116625	161.12	67.26	27.97
27	2014-10-28	3_S_0118225	105.97	19.44	9.19
28	2014-10-28	5_S_0118730	331.42	39.50	16.90
29	2014-10-28	5_S_0118831	344.27	33.23	15.29
30	2014-10-28	82_S_0119126	319.86	35.68	18.63
31	2014-10-28	5_S_0120717	332.41	38.03	17.45
32	2014-10-28	73_S_0151930	342.06	50.54	18.10
33	2014-10-31	73_S_0020006	210.43	42.07	16.04
34	2014-10-31	73_S_0155736	367.41	60.49	18.62
35	2014-10-31	72_S_0150120	273.07	27.94	18.18
36	2014-10-31	73_S_0163432	292.99	43.04	17.82
37	2014-10-31	82_S_0162531	311.51	41.69	28.01
38	2014-10-31	94_S_0160022	307.19	42.04	17.56
39	2014-10-31	5_S_0128935	311.32	62.28	51.46
40	2014-10-31	10_S_0145834	168.15	32.82	22.49
41	2014-10-31	140_S_0110916	239.30	31.55	18.08
42	2014-10-31	140_S_0131217	274.12	26.01	15.17
43	2014-10-31	3_S_0035019 v 2	273.75	34.08	17.60
44	2014-10-31	21_S_0130215	177.77	43.31	30.04
45	2014-10-31	145_S_0014011	300.86	27.43	22.27
46	2014-10-31	145_S_0142929	305.66	18.62	19.82
47	2014-11-07	73_S_0006315	373.52	63.87	22.26
48	2014-11-07	73_S_0006618	323.34	53.94	20.56
49	2014-11-07	73_S_0007721	178.28	18.24	10.89
50	2014-11-07	73_S_0008319	316.29	30.92	14.44
51	2014-11-07	73_S_0012310	261.80	31.60	12.18
52	2014-11-07	73_S_0013009	346.04	39.77	19.02

#	Date	Sample	Abeta	Tau	p-Tau
53	2014-11-07	73_S_0013716	333.39	36.34	14.54
54	2014-11-07	73_S_0014314	357.03	40.21	22.51
55	2014-11-07	73_S_0016722	334.69	45.33	23.10
56	2014-11-07	73_S_0017522	331.38	45.43	14.99
57	2014-11-07	127_S_0019526	407.14	35.22	18.11
58	2014-11-07	73_S_0023113	350.59	37.90	28.95
59	2014-11-07	14_S_0025622	248.29	34.49	15.62
60	2014-11-07	27_S_0027626	335.20	45.47	20.27
61	2014-11-07	14_S_0028022	176.47	53.58	24.50
62	2014-11-07	27_S_0032114	380.22	78.14	29.77
63	2014-11-07	27_S_0032821	296.52	35.17	15.65
64	2014-11-07	27_S_0032922	212.44	51.76	41.16
65	2014-11-07	3_S_0035019	289.86	34.42	17.86
66	2014-11-07	127_S_0038227	306.43	51.17	28.01
67	2014-11-07	99_S_0043523	318.74	32.96	X
68	2014-11-07	127_S_0044020	284.04	36.73	19.44
69	2014-11-07	5_S_0046933	270.46	21.68	15.28