

New York State Tumor Marker Proficiency Test September 2005
Summary of Results

	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias	
CA125 all lab mean:							CA125 Bayer ADVIDA Centaur (COB/BA1) mean:							
mean	24.4	47.5	23.5	45.8	50.0		mean	24.9	48.6	23.4	45.6	50.6		
SD	4.0	7.2	4.4	7.6	7.6		SD	1.7	2.8	1.6	2.4	2.8		
%CV	16.3%	15.1%	18.6%	16.7%	15.2%		%CV	6.8%	5.7%	7.0%	5.3%	5.5%		
N	119	121	120	121	121		mean+3SD	29.9	56.9	28.3	52.8	59.0		
mean+3SD	36.3	69.0	36.6	68.7	72.7		mean-3SD	19.8	40.3	18.5	38.4	42.2		
mean-3SD	12.4	25.9	10.4	22.9	27.3		N	30	30	30	30	30		
mean/all kit median	1.09	1.06	1.10	1.09	1.01	1.07	kit median	25.0	48.5	23.6	45.2	50.9		
							mean/all kit median	1.11	1.08	1.09	1.09	1.02	1.08	
CA125 Abbott Asxym & Imx (ABB & ABM/AB1) mean:							CA125 Immulite & Immulite 1000 (DPB/DP5) mean:							
mean	29.3	54.6	29.1	55.6	57.0		mean	22.3	44.9	21.4	41.0	49.6		
SD	3.9	5.7	4.1	5.4	4.7		SD	1.4	3.3	1.7	3.4	1.8		
%CV	13.5%	10.5%	14.0%	9.7%	8.2%		%CV	6.1%	7.4%	7.8%	8.4%	3.6%		
mean+3SD	41.1	71.8	41.4	71.9	71.0		mean+3SD	26.4	54.9	26.4	51.3	55.0		
mean-3SD	17.5	37.4	16.9	39.4	43.1		mean-3SD	18.3	35.0	16.4	30.7	44.2		
N	26	26	26	26	26		N	7	7	7	7	7		
kit median	29.1	55.1	30.4	56.3	57.1		kit median	22.1	44.0	21.2	42.4	50.0		
mean/all kit median	1.31	1.22	1.36	1.33	1.15	1.27	mean/all kit median	1.00	1.00	1.00	0.98	1.00	1.00	
CA125 Beckman Unicel & Access (BCU & BCX/BC1) mean:							CA125 Immulite 2000 (DPD/DP5) mean:							
mean	28.1	54.6	26.0	51.4	59.9		mean	22.0	43.7	21.1	42.0	48.6		
SD	1.6	2.3	0.7	3.2	2.0		SD	1.3	3.0	1.4	2.4	3.1		
%CV	5.8%	4.2%	2.6%	6.2%	3.4%		%CV	6.0%	6.8%	6.5%	5.6%	6.4%		
mean+3SD	33.0	61.4	28.1	61.0	66.1		mean+3SD	25.9	52.5	25.3	49.0	57.8		
mean-3SD	23.2	47.8	24.0	41.8	53.8		mean-3SD	18.0	34.8	17.0	34.9	39.3		
N	9	9	9	10	9		N	21	21	21	21	20		
kit median	27.3	55.4	26.2	50.4	59.8		kit median	21.7	42.7	20.9	42.0	48.4		
mean/all kit median	1.26	1.21	1.22	1.22	1.21	1.22	mean/all kit median	0.98	0.97	0.99	1.00	0.98	0.98	
CA125 TOSOH AIA (TOM/TO1 & 2) mean:							CA125 Elecsys 1010/2010 & E170 (BME & BMR/BM1) mean:							
mean	24.8	52.1	24.6	49.3	52.3		mean	20.2	38.7	19.2	36.4	38.4		
SD	1.4	5.5	0.9	6.3	4.3		SD	1.9	2.7	1.5	2.2	2.6		
%CV	5.8%	10.5%	3.5%	12.7%	8.2%		%CV	9.2%	6.9%	8.0%	6.2%	6.8%		
mean+3SD	29.1	68.4	27.2	68.1	65.1		mean+3SD	25.7	46.7	23.8	43.1	46.1		
mean-3SD	20.5	35.7	22.0	30.6	39.5		mean-3SD	14.6	30.8	14.6	29.7	30.6		
N	6	6	6	6	6		N	13	13	13	13	13		
kit median	24.6	50.3	24.3	47.6	52.6		kit median	19.4	39.2	18.9	36.2	37.5		
mean/all kit median	1.11	1.16	1.15	1.17	1.06	1.13	mean/all kit median	0.90	0.86	0.90	0.87	0.77	0.86	

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	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias
CA125 Johnson & Johnson Vitros (JJC/JJ1) mean:							CA125 Fujirebio/Centocor (GAA/CE1) mean:						
mean	17.4	36.7	16.6	34.4	38.8		mean	21.6	38.7	16.8	35.5	40.8	
SD	1.6	2.5	1.4	3.1	2.0		N	2	2	2	2	2	
%CV	8.9%	6.7%	8.7%	9.1%	5.2%		mean/all kit median	0.97	0.86	0.78	0.85	0.82	0.86
mean+3SD	22.1	44.1	20.9	43.7	44.9		CA125 kit average:						
mean-3SD	12.7	29.3	12.2	25.0	32.7		mean	23.4	45.8	22.0	43.5	48.4	
N	6	6	6	6	6		SD	3.8	7.0	4.2	7.5	7.7	
kit median	17.5	36.3	16.5	33.0	38.1		all kit median	22.3	44.9	21.4	42.0	49.6	
mean/all kit median	0.78	0.82	0.77	0.82	0.78	0.79							

	TM141	TM142	TM143	TM144	TM145		TM141	TM142	TM143	TM144	TM145
CA27.29 all lab mean:						CA27.29 Bayer ACS-180 (COS/BA1) mean:					
mean	30.6	73.6	37.0	77.9	19.7	mean	31.5	71.2	37.0	78.7	17.4
SD	4.1	5.0	5.5	8.4	3.5	SD	4.7	5.1	2.5	5.7	2.0
%CV	13.5%	6.8%	14.9%	10.8%	18.0%	%CV	14.9%	7.2%	6.8%	7.2%	11.3%
mean+3SD	42.9	88.6	53.5	103.1	30.4	mean+3SD	45.6	86.5	44.6	95.7	23.3
mean-3SD	18.2	58.5	20.4	52.7	9.1	mean-3SD	17.4	55.8	29.4	61.7	11.5
N	54	54	54	54	54	N	5	5	5	5	5
mean/all kit median	0.97	1.03	1.00	0.99	1.01	kit median	30.7	70.3	37.2	78.6	17.5
						mean/all kit median	1.00	1.00	1.00	1.00	0.89

	TM141	TM142	TM143	TM144	TM145		TM141	TM142	TM143	TM144	TM145
CA27.29 Bayer ADVIA-Centaur (COB/BA1) mean:						CA27.29 TOSOH AIA (TOM/TO1) mean:					
mean	30.4	74.4	36.3	76.7	19.5	mean	31.5	67.6	44.7	86.6	25.4
SD	4.3	4.7	5.5	7.9	3.3	SD	0.9	3.9	2.3	2.1	3.1
%CV	14.0%	6.4%	15.1%	10.3%	16.7%	%CV	2.9%	5.8%	5.1%	2.5%	12.1%
mean+3SD	43.1	88.5	52.7	100.4	29.3	mean+3SD	34.2	79.3	51.6	93.0	34.5
mean-3SD	17.6	60.2	19.9	53.0	9.7	mean-3SD	28.8	55.9	37.8	80.1	16.2
N	45	45	45	45	45	N	4	4	4	3	4
kit median	30.0	73.7	36.0	76.8	19.0	kit median	31.7	68.6	45.3	87.6	24.4
mean/all kit median	0.96	1.04	0.98	0.97	1.00	mean/all kit median	1.00	0.95	1.21	1.10	1.30

CA27.29 kit average:					
mean	31.1	71.1	39.3	80.7	20.7
SD	0.7	3.4	4.7	5.2	4.1
all kit median	31.5	71.2	37.0	78.7	19.5

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	TM141	TM142	TM143	TM144	TM145		TM141	TM142	TM143	TM144	TM145
CA15-3 all lab mean:						CA15-3 Abbott Asxym & IMX (ABB & ABM/AB1) mean:					
mean	30.7	64.8	53.6	107.5	22.3	mean	28.2	57.6	43.7	89.1	20.3
SD	5.6	12.7	18.1	36.9	4.0	SD	2.6	4.4	4.5	13.6	1.3
%CV	18.1%	19.6%	33.8%	34.3%	18.1%	%CV	9.3%	7.6%	10.4%	15.3%	6.3%
N	49	49	49	49	49	N	13	13	12	13	13
mean+3SD	47.4	103.0	108.0	218.2	34.4	mean+3SD	36.1	70.8	57.2	130.0	24.1
mean-3SD	14.1	26.7	-0.8	-3.2	10.2	mean-3SD	20.4	44.5	30.1	48.2	16.5
mean/all kit median	1.02	1.02	1.32	1.27	1.01	kit median	28.0	59.1	44.4	86.7	20.0
						mean/all kit median	0.93	0.91	1.08	1.05	0.91
CA15-3 DPC Immulite 1000/2000 (DPB & DPD/DP5) mean:						CA15-3 Johnson & Johnson (JJC/JJ1) mean:					
mean	32.3	67.9	81.4	167.2	24.1	mean	27.8	58.8	37.2	80.0	19.9
SD	1.9	5.3	4.4	10.3	2.0	SD	1.7	3.1	1.2	2.9	1.6
%CV	5.8%	7.9%	5.4%	6.2%	8.1%	%CV	6.1%	5.3%	3.2%	3.6%	8.2%
N	12	12	12	12	12	N	2	2	2	2	2
mean+3SD	38.0	83.9	94.7	198.0	30.0	mean+3SD	32.9	68.1	40.8	88.6	24.7
mean-3SD	26.7	51.9	68.1	136.3	18.3	mean-3SD	22.7	49.5	33.5	71.3	15.0
kit median	32.6	69.5	81.0	167.5	24.5	kit median	27.8	58.8	37.2	80.0	19.9
mean/all kit median	1.07	1.07	2.01	1.98	1.09	mean/all kit median	0.92	0.93	0.92	0.95	0.89
CA15-3 Bayer ADVIA-Centaur (COB/BA1) mean:						CA15-3 Beckman Unicel & Access (BCU & BCX/BC1) mean:					
mean	34.1	74.5	49.5	99.5	24.4	mean	15.2	30.8	37.4	74.0	11.4
SD	3.9	8.4	4.8	9.5	3.0	SD	0.4	1.2	1.8	1.2	0.2
%CV	11.3%	11.3%	9.7%	9.5%	12.1%	%CV	2.3%	4.0%	4.8%	1.6%	1.3%
N	13	13	13	13	13	N	3	3	3	3	3
mean+3SD	45.7	99.7	63.9	128.0	33.3	mean+3SD	16.2	34.4	42.8	77.6	11.8
mean-3SD	22.5	49.4	35.1	71.0	15.6	mean-3SD	14.1	27.1	32.1	70.5	10.9
kit median	33.0	72.0	48.0	97.4	24.8	kit median	15.2	30.5	37.8	73.5	11.4
mean/all kit median	1.13	1.18	1.22	1.18	1.10	mean/all kit median	0.50	0.49	0.92	0.88	0.51
CA15-3 Roche Elecsys (BME & BMR/BM1) mean:						CA15-3 kit average:					
mean	36.7	77.8	37.0	73.4	26.6	mean	29.0	61.2	47.7	97.2	21.1
SD	2.2	4.3	2.5	5.9	2.0	SD	7.6	17.0	17.2	35.7	5.4
%CV	6.1%	5.5%	6.7%	8.1%	7.4%	all kit median	30.3	63.4	40.5	84.5	22.2
N	4	4	4	4	4						
mean+3SD	43.3	90.7	44.4	91.1	32.5						
mean-3SD	30.0	64.8	29.6	55.6	20.6						
kit median	37.6	78.3	37.3	73.7	27.5						
mean/all kit median	1.21	1.23	0.91	0.87	1.20						

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Summary of Results

	TM141	TM142	TM143	TM144	TM145	Average bias	TM141	TM142	TM143	TM144	TM145	Average bias	
CA19-9 all lab mean:							CA19-9 DPC Immulite (DPD/DP5) mean:						
mean	26.7	52.7	26.9	51.4	74.2		mean	20.2	42.8	20.4	42.0	61.0	
SD	5.9	10.1	5.3	8.9	15.4		SD	2.6	4.1	2.0	1.8	6.2	
%CV	22.1%	19.1%	19.7%	17.3%	20.7%		%CV	12.9%	9.5%	9.9%	4.2%	10.1%	
N	43	43	43	43	43		N	5	5	5	5	5	
mean+3SD	44.5	82.9	42.9	78.2	120.3		mean+3SD	28.0	55.1	26.5	47.3	79.5	
mean-3SD	9.0	22.6	11.0	24.7	28.0		mean-3SD	12.3	30.6	14.4	36.6	42.5	
mean/all kit median	1.32	1.23	1.26	1.23	1.22	1.25	kit median	21.1	44.7	20.5	42.3	64.6	
							mean/all kit median	1.00	1.00	0.96	1.00	1.00	0.99
CA19-9 Fujirebio/Centocor (GAA/CE1) mean:							CA19-9 Beckman Unicel & Access (BCU & BCX/BC1) mean:						
mean	33.4	62.8	34.9	64.3	90.3		mean	20.1	40.9	20.4	39.6	58.9	
SD	2.6	5.5	6.8	6.6	9.0		SD	0.7	1.7	0.9	2.0	4.1	
%CV	7.9%	8.7%	19.4%	10.3%	10.0%		%CV	3.6%	4.1%	4.5%	5.1%	6.9%	
N	3	3	3	3	3		N	6	6	6	6	6	
mean+3SD	41.3	79.1	55.2	84.2	117.4		mean+3SD	22.3	46.0	23.2	45.6	71.1	
mean-3SD	25.4	46.4	14.6	44.3	63.1		mean-3SD	17.9	35.8	17.7	33.6	46.7	
kit median	33.9	60.4	37.4	68.0	88.4		kit median	20.0	40.8	20.6	38.6	58.0	
mean/all kit median	1.65	1.47	1.63	1.53	1.48	1.55	mean/all kit median	1.00	0.96	0.96	0.94	0.96	0.96
CA19-9 Bayer ADVIA-Centaur (COB/BA1) mean:							CA19-9 TOSOH (TOM/TO1 & 2) mean:						
mean	30.0	58.6	29.4	55.7	82.6		mean	16.1	32.0	21.4	41.6	37.5	
SD	2.8	3.3	2.5	5.1	4.8		SD	1.7	3.7	2.1	4.0	4.5	
%CV	9.2%	5.6%	8.5%	9.1%	5.8%		%CV	10.6%	11.6%	10.0%	9.7%	12.1%	
N	26	26	26	26	26		N	3	3	3	3	3	
mean+3SD	38.3	68.4	36.9	70.9	97.0		mean+3SD	21.2	43.2	27.8	53.6	51.2	
mean-3SD	21.7	48.7	21.9	40.4	68.2		mean-3SD	10.9	20.8	15.0	29.5	23.9	
kit median	29.7	58.8	29.2	55.3	83.2		kit median	16.9	34.0	22.5	42.4	39.9	
mean/all kit median	1.49	1.37	1.38	1.33	1.35	1.38	mean/all kit median	0.80	0.75	1.00	0.99	0.62	0.83
							CA19-9 kit average:						
							mean	23.9	47.4	25.3	48.6	66.1	
							SD	7.4	12.9	6.5	10.8	20.9	
							all kit median	20.2	42.8	21.4	42.0	61.0	

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	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias
CEA all lab mean:							CEA Abbott Asym (ABB/AB1) mean:						
mean	11.7	17.2	11.0	15.1	18.8		mean	11.1	16.2	10.5	14.2	18.8	
SD	1.2	1.8	1.2	1.7	1.8		SD	0.8	0.9	0.7	1.1	1.1	
%CV	10.5%	10.2%	11.1%	11.5%	9.8%		%CV	7.0%	5.4%	7.0%	7.8%	6.0%	
mean+3SD	15.3	22.5	14.7	20.3	24.4		mean+3SD	13.4	18.8	12.7	17.5	22.2	
mean-3SD	8.0	12.0	7.3	9.9	13.3		mean-3SD	8.8	13.6	8.3	10.8	15.4	
N	185	183	184	184	184		N	27	27	27	27	27	
mean/all kit median	1.05	1.05	1.05	1.04	1.00	1.04	kit median	11.0	16.2	10.5	14.3	18.7	
							mean/all kit median	0.99	0.99	1.00	0.98	1.00	0.99
CEA DPC Immulite (DPB/DP5) mean:							CEA Abbott IMx (ABM/AB1) mean:						
mean	13.2	19.9	12.1	16.9	21.0		mean	11.1	16.3	10.3	14.5	18.8	
SD	0.5	1.0	0.7	0.8	1.2		SD	0.4	0.5	0.5	0.7	1.0	
%CV	3.5%	5.0%	5.4%	4.7%	5.9%		%CV	3.8%	2.9%	4.5%	4.6%	5.1%	
mean+3SD	14.6	22.9	14.1	19.2	24.7		mean+3SD	12.4	17.7	11.7	16.5	21.7	
mean-3SD	11.8	16.9	10.2	14.5	17.3		mean-3SD	9.9	14.9	8.9	12.5	15.9	
N	7	7	7	7	7		N	6	6	6	6	6	
kit median	13.1	19.7	12.4	16.8	20.5		kit median	11.3	16.3	10.3	14.6	18.4	
mean/all kit median	1.19	1.22	1.16	1.16	1.12	1.17	mean/all kit median	1.00	0.99	0.98	1.00	1.00	0.99
CEA DPC Immulite 2000 (DPD/DP5) mean:							CEA Johnson & Johnson Vitros Eci (JJC/JJ1) mean:						
mean	13.4	20.1	12.2	17.1	21.4		mean	10.7	16.4	9.7	13.9	18.1	
SD	1.0	1.5	0.8	1.2	1.4		SD	0.4	0.5	0.3	0.4	0.5	
%CV	7.2%	7.5%	6.5%	6.9%	6.4%		%CV	3.6%	3.0%	3.4%	2.6%	2.6%	
mean+3SD	16.3	24.6	14.6	20.7	25.5		mean+3SD	11.9	17.9	10.7	15.0	19.5	
mean-3SD	10.5	15.5	9.8	13.6	17.3		mean-3SD	9.5	14.9	8.7	12.8	16.6	
N	15	15	15	15	15		N	10	10	10	10	10	
kit median	13.4	20.0	12.3	17.1	21.4		kit median	10.7	16.4	9.7	13.9	18.0	
mean/all kit median	1.20	1.22	1.16	1.18	1.14	1.18	mean/all kit median	0.96	1.00	0.93	0.96	0.96	0.96
CEA TOSOH AIA (TOM/TO1& 2) mean:							CEA Beckman Unicel (BCU/BC1) mean:						
mean	12.0	18.1	12.3	17.8	20.7		mean	11.0	15.9	10.2	14.1	17.2	
SD	0.9	1.4	1.0	1.4	1.6		SD	0.9	0.6	0.8	0.8	0.8	
%CV	7.2%	7.6%	8.2%	7.7%	7.6%		%CV	7.8%	3.8%	8.1%	5.8%	4.8%	
mean+3SD	14.6	22.2	15.3	21.9	25.4		mean+3SD	13.5	17.7	12.7	16.6	19.7	
mean-3SD	9.4	14.0	9.2	13.7	16.0		mean-3SD	8.4	14.1	7.7	11.7	14.7	
N	6	6	6	6	6		N	6	6	6	6	6	
kit median	11.6	17.8	11.9	17.6	20.6		kit median	10.5	15.7	10.0	13.8	17.1	
mean/all kit median	1.07	1.10	1.17	1.23	1.10	1.14	mean/all kit median	0.99	0.97	0.97	0.97	0.92	0.96

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CEA Bayer ADVIA-Centaur (COB/BA1) mean:							CEA Beckman Access (BCX/BC1) mean:						
mean	12.3	18.2	11.7	16.1	19.3		mean	10.4	15.7	9.8	13.7	16.5	
SD	0.7	1.1	0.8	1.0	1.1		SD	0.6	0.8	0.5	0.9	1.3	
%CV	5.9%	5.8%	7.1%	6.2%	5.6%		%CV	5.4%	4.9%	5.6%	6.5%	7.6%	
mean+3SD	14.5	21.3	14.2	19.1	22.5		mean+3SD	12.1	18.0	11.5	16.4	20.3	
mean-3SD	10.1	15.0	9.2	13.1	16.0		mean-3SD	8.8	13.3	8.2	11.0	12.7	
N	62	63	63	62	62		N	17	17	16	18	17	
kit median	12.4	18.2	11.7	16.1	19.2		kit median	10.4	15.6	9.7	13.6	16.6	
mean/all kit median	1.10	1.11	1.11	1.11	1.03	1.09	mean/all kit median	0.94	0.95	0.94	0.94	0.88	0.93
CEA Bayer ACS-180 (COS/BA1) mean:							CEA Roche Elecsys (BME & BMR/BM1) mean:						
mean	12.0	18.0	11.8	15.8	18.9		mean	10.3	15.0	9.4	12.6	16.8	
SD	0.7	0.9	0.4	0.5	0.6		SD	0.4	0.7	0.5	0.7	1.1	
%CV	5.5%	4.9%	3.3%	3.0%	3.1%		%CV	3.7%	4.8%	4.9%	5.6%	6.3%	
mean+3SD	14.0	20.7	13.0	17.2	20.6		mean+3SD	11.4	17.1	10.8	14.7	19.9	
mean-3SD	10.0	15.3	10.6	14.4	17.1		mean-3SD	9.1	12.8	8.0	10.5	13.6	
N	6	6	6	6	6		N	18	18	18	18	18	
kit median	12.0	18.1	11.9	15.9	19.1		kit median	10.4	15.2	9.4	12.8	16.8	
mean/all kit median	1.07	1.10	1.13	1.09	1.00	1.08	mean/all kit median	0.92	0.91	0.90	0.87	0.89	0.90
							CEA kit average:						
							mean	11.6	17.2	10.9	15.2	18.8	
							SD	1.1	1.7	1.1	1.7	1.7	
							all kit median	11.1	16.4	10.5	14.5	18.8	

	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias
AFP all lab mean:							AFP TOSOH AIA (TOM/TO1&2) mean:						
mean	4.6	8.4	13.0	16.7	43.0		mean	4.3	7.9	12.4	16.2	41.7	
SD	1.0	1.5	2.4	2.8	6.3		SD	0.3	0.6	0.5	0.9	1.4	
%CV	21.7%	18.0%	18.2%	16.7%	14.7%		%CV	5.9%	7.6%	3.8%	5.2%	3.3%	
mean+3SD	7.5	13.0	20.0	25.0	62.0		mean+3SD	5.0	9.7	13.8	18.8	45.8	
mean-3SD	1.6	3.9	5.9	8.3	24.1		mean-3SD	3.5	6.1	10.9	13.7	37.6	
N	99	99	100	100	99		N	3	3	3	3	3	
mean/target	1.34	1.15	1.08	1.06	1.03	1.13	kit median	4.3	8.0	12.2	16.2	41.2	
							mean/target	1.25	1.09	1.03	1.03	1.00	1.08
AFP Beckman Unicel (BCU/BC1) mean:							AFP Johnson & Johnson Vitros Eci (JJC/JJ1) mean:						
mean	5.1	9.9	15.9	21.2	52.9		mean	4.4	7.8	11.3	14.3	37.4	
SD	0.5	0.8	0.6	1.6	2.8		SD	0.1	0.3	0.3	0.3	0.4	
%CV	9.2%	8.0%	3.8%	7.5%	5.4%		%CV	2.6%	3.2%	2.5%	2.2%	1.0%	
mean+3SD	6.5	12.3	17.6	26.0	61.5		mean+3SD	4.8	8.6	12.2	15.3	38.6	
mean-3SD	3.7	7.5	14.1	16.4	44.4		mean-3SD	4.1	7.1	10.5	13.4	36.3	
N	4	4	4	4	4		N	3	3	3	3	3	
kit median	5.0	9.8	16.0	21.3	52.0		kit median	4.5	7.8	11.5	14.2	37.6	
mean/target	1.51	1.36	1.32	1.35	1.27	1.36	mean/target	1.30	1.07	0.94	0.91	0.90	1.03

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Summary of Results

	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias
AFP Beckman Access (BCX/BC1) mean:							AFP Roche Elecsys (BME/BM1) mean:						
mean	5.1	10.1	16.1	20.4	52.3		mean	4.1	7.9	12.2	16.0	45.0	
SD	0.5	1.1	1.8	1.7	5.1		SD	0.3	0.4	0.2	0.8	2.4	
%CV	10.3%	10.9%	11.2%	8.3%	9.8%		%CV	8.6%	4.5%	2.0%	5.1%	5.4%	
mean+3SD	6.7	13.4	21.5	25.4	67.6		mean+3SD	5.1	9.0	12.9	18.5	52.2	
mean-3SD	3.6	6.8	10.7	15.3	37.0		mean-3SD	3.0	6.8	11.4	13.6	37.7	
N	8	8	8	8	8		N	4	4	4	4	4	
kit median	5.3	10.1	15.4	19.7	51.6		kit median	4.1	7.9	12.2	16.2	45.6	
mean/target	1.51	1.38	1.34	1.30	1.25	1.36	mean/target	1.20	1.08	1.01	1.02	1.08	1.08
AFP Bayer ADVIDA Centaur (COB/BA1) mean:							AFP Immulite 2000 (DPD/DP5) mean:						
mean	5.8	9.9	15.0	18.6	47.3		mean	3.5	6.6	10.2	13.4	35.2	
SD	0.8	0.6	1.0	1.1	2.3		SD	0.3	0.5	0.8	0.8	2.5	
%CV	13.4%	5.9%	6.8%	5.8%	4.9%		%CV	8.0%	7.7%	7.8%	6.2%	7.1%	
mean+3SD	8.2	11.6	18.1	21.9	54.3		mean+3SD	4.4	8.2	12.6	15.9	42.7	
mean-3SD	3.5	8.1	11.9	15.4	40.3		mean-3SD	2.7	5.1	7.8	10.9	27.7	
N	25	24	25	25	25		N	23	23	23	23	23	
kit median	6.0	9.8	15.0	18.8	47.3		kit median	3.5	6.6	10.2	13.6	34.4	
mean/target	1.72	1.35	1.25	1.19	1.13	1.33	mean/target	1.03	0.91	0.85	0.85	0.84	0.90
AFP Bayer ACS 180 (COS/BA1) mean:							AFP Immulite or Immulite 1000 (DPB/DP5) mean:						
mean	5.2	9.8	14.8	19.1	46.0		mean	3.1	6.2	9.6	12.7	34.3	
N	2	2	2	2	2		SD	0.5	0.6	1.0	1.2	3.2	
mean/target	1.53	1.34	1.23	1.22	1.10	1.28	%CV	15.1%	9.5%	10.2%	9.8%	9.4%	
AFP Abbott Asxym (ABB/AB1) mean:							AFP kit average:						
mean	4.6	8.6	13.0	16.9	44.1		mean	4.3	7.9	12.2	15.9	41.0	
SD	0.3	0.7	0.9	1.5	3.5		SD	1.4	2.7	4.2	5.4	13.6	
%CV	7.1%	8.5%	7.0%	8.6%	8.0%		all kit median	4.4	8.2	12.7	16.9	45.0	
mean+3SD	5.6	10.8	15.8	21.2	54.7		AFP						
mean-3SD	3.6	6.4	10.3	12.5	33.5			TM141	TM142	TM143	TM144	TM145	
N	15	15	15	15	15		*IS target	3.4	7.3	12.0	15.7	41.7	
kit median	4.5	8.5	13.1	16.6	44.6		SD (+/-)	0.3	1.3	2.3	3.4	8.6	
mean/target	1.35	1.18	1.09	1.07	1.06	1.15	% CV	8.9%	17.9%	18.9%	21.5%	20.5%	
AFP Roche E170 (BMR/BM1) mean:							high (30%)						
mean	4.4	8.2	12.7	17.1	45.7		4.4	9.5	15.6	20.4	54.2		
SD	0.3	0.6	0.6	1.0	2.4		low (30%)	2.4	5.1	8.4	11.0	29.2	
%CV	6.1%	7.5%	4.6%	5.9%	5.4%		* target value from a traceable AFP standard						
mean+3SD	5.2	10.0	14.5	20.1	53.0								
mean-3SD	3.6	6.3	11.0	14.1	38.4								
N	6	6	6	6	6								
kit median	4.5	8.3	12.9	17.2	45.8								
mean/target	1.29	1.12	1.06	1.09	1.10	1.13							

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Summary of Results

	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias	
PSA all lab mean:							PSA TOSOH AIA (TOM/TO1&2) mean:							
mean	14.6	10.0	7.1	4.0	2.0		mean	14.5	10.0	7.0	4.0	2.0		
SD	1.4	1.0	0.7	0.4	0.2		SD	0.7	0.6	0.7	0.2	0.1		
%CV	9.7%	9.7%	9.6%	9.8%	10.0%		%CV	5.1%	6.4%	9.6%	4.7%	6.1%		
mean+3SD	18.9	12.9	9.1	5.2	2.6		mean+3SD	16.8	11.9	9.1	4.6	2.3		
mean-3SD	10.4	7.1	5.1	2.8	1.4		mean-3SD	12.3	8.1	5.0	3.5	1.6		
N	282	281	281	281	277		N	16	16	17	16	16		
mean/target	1.07	1.09	1.08	1.05	1.10	1.08	kit median	14.4	10.0	7.2	4.1	2.0		
							mean/target	1.06	1.09	1.07	1.06	1.10	1.08	
PSA Johnson & Johnson Vitros Eci (JJC/JJ1) mean:							PSA Dade Behring Dimension (DUD/DA1) mean:							
mean	16.5	11.5	8.2	4.9	2.6		mean	15.0	10.0	7.0	3.9	1.9		
SD	0.6	0.4	0.3	0.2	0.1		SD	0.6	0.6	0.3	0.2	0.1		
%CV	3.6%	3.4%	3.2%	4.0%	3.0%		%CV	4.2%	5.7%	4.6%	4.7%	5.0%		
mean+3SD	18.2	12.7	9.0	5.5	2.9		mean+3SD	16.9	11.7	7.9	4.5	2.2		
mean-3SD	14.7	10.3	7.4	4.3	2.4		mean-3SD	13.1	8.3	6.0	3.4	1.6		
N	10	10	10	10	10		N	24	24	24	24	24		
kit median	16.4	11.4	8.2	4.9	2.6		kit median	15.2	10.1	7.0	3.9	1.9		
mean/target	1.20	1.25	1.25	1.29	1.46	1.29	mean/target	1.10	1.08	1.06	1.03	1.08	1.07	
PSA Beckman Access (BCX/BC1) mean:							PSA DPC Immulite & 2000 3rd generation (DPB & D/DP6) mean:							
mean	16.4	11.2	7.9	4.4	2.2		mean	13.5	9.8	6.6	3.5	1.8		
SD	0.7	0.4	0.3	0.2	0.1		SD	1.0	1.3	0.7	0.2	0.1		
%CV	4.0%	3.3%	3.7%	3.7%	4.6%		%CV	7.4%	13.0%	10.1%	6.5%	3.1%		
mean+3SD	18.4	12.3	8.7	4.9	2.4		mean+3SD	16.5	13.6	8.6	4.2	2.0		
mean-3SD	14.5	10.0	7.0	3.9	1.9		mean-3SD	10.5	6.0	4.6	2.8	1.7		
N	51	51	51	51	52		N	3	3	3	3	3		
kit median	16.4	11.2	7.8	4.4	2.1		kit median	13.1	9.3	6.4	3.4	1.8		
mean/target	1.20	1.21	1.19	1.16	1.19	1.19	mean/target	0.98	1.06	0.99	0.93	1.02	1.00	
PSA Beckman Unicel (BCU/BC1) mean:							PSA Roche Elecsys (BME/BM1) mean:							
mean	15.9	10.9	7.6	4.3	2.1		mean	13.4	9.1	6.6	3.7	1.9		
SD	0.2	0.3	0.3	0.2	0.1		SD	0.5	0.4	0.4	0.2	0.1		
%CV	1.6%	3.1%	4.4%	4.3%	3.5%		%CV	3.7%	4.1%	5.4%	4.6%	5.9%		
mean+3SD	16.6	11.9	8.6	4.9	2.3		mean+3SD	14.9	10.2	7.7	4.2	2.2		
mean-3SD	15.1	9.8	6.6	3.8	1.9		mean-3SD	11.9	8.0	5.5	3.2	1.5		
N	10	10	10	10	10		N	15	15	15	15	15		
kit median	15.8	10.8	7.6	4.3	2.1		kit median	13.3	9.3	6.6	3.7	1.9		
mean/target	1.16	1.18	1.16	1.13	1.16	1.16	mean/target	0.98	0.99	1.00	0.97	1.04	1.00	
PSA Abbott IMX (ABM/AB1) mean:							PSA Roche E170 (BMR/BM1) mean:							
mean	15.2	10.4	7.6	4.3	2.1		mean	13.5	9.2	6.5	3.7	1.9		
SD	0.6	1.1	0.3	0.2	0.1		SD	0.6	0.3	0.2	0.1	0.1		
%CV	4.3%	10.5%	3.3%	4.0%	3.6%		%CV	4.1%	3.5%	3.1%	3.7%	2.8%		
mean+3SD	17.1	13.6	8.4	4.8	2.3		mean+3SD	15.2	10.2	7.1	4.1	2.0		
mean-3SD	13.2	7.1	6.8	3.8	1.9		mean-3SD	11.9	8.2	5.9	3.3	1.7		
N	6	6	6	6	6		N	12	12	12	12	12		
kit median	15.1	10.5	7.7	4.3	2.1		kit median	13.6	9.2	6.6	3.7	1.9		
mean/target	1.11	1.13	1.15	1.14	1.16	1.14	mean/target	0.99	1.00	0.99	0.98	1.03	1.00	

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Summary of Results

	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias	
free PSA all lab mean:							free PSA Roche Elecsys (BME/BM2) mean:							
mean	1.74	1.19	0.88	0.50	0.24		mean	1.44	0.99	0.72	0.41	0.19		
SD	0.31	0.21	0.19	0.09	0.05		SD	0.10	0.06	0.08	0.03	0.00		
%CV	17.7%	17.5%	21.6%	18.2%	19.2%		%CV	7.1%	5.7%	10.6%	7.9%	2.5%		
mean+3SD	2.66	1.81	1.44	0.77	0.38		mean+3SD	1.74	1.15	0.94	0.51	0.21		
mean-3SD	0.82	0.57	0.31	0.23	0.10		mean-3SD	1.13	0.82	0.49	0.31	0.18		
N	61	63	66	62	59		N	7	8	8	7	7		
mean/target	1.22	1.37	1.31	1.28	1.42	1.32	kit median	1.42	0.99	0.73	0.40	0.19		
							mean/target	1.01	1.13	1.07	1.05	1.13	1.08	
free PSA Beckman Access (BCX/BC1) mean:							free PSA Dade Behring Dimension (DUD/DA1) mean:							
mean	1.98	1.35	1.04	0.56	0.28		mean	1.33	0.96	0.65	0.41	0.20		
SD	0.13	0.07	0.11	0.04	0.02		SD	0.10	0.10	0.04	0.06	0.02		
%CV	6.5%	5.3%	10.7%	7.5%	6.4%		%CV	7.9%	10.2%	6.6%	14.1%	9.5%		
mean+3SD	2.37	1.57	1.37	0.69	0.33		mean+3SD	1.64	1.26	0.78	0.58	0.26		
mean-3SD	1.60	1.14	0.70	0.44	0.23		mean-3SD	1.01	0.67	0.52	0.24	0.14		
N	27	27	29	29	26		N	5	5	5	5	5		
kit median	1.97	1.34	1.09	0.57	0.28		kit median	1.36	0.99	0.65	0.44	0.20		
mean/target	1.40	1.56	1.55	1.44	1.64	1.52	mean/target	0.93	1.11	0.97	1.05	1.19	1.05	
free PSA Beckman Unicel (BCU/BC1) mean:							free PSA DPC Immulite 2000 (DPD/DP5) mean:							
mean	1.91	1.36	0.94	0.56	0.27		mean	1.28	0.90	0.72	0.36	0.17		
SD	0.16	0.09	0.11	0.04	0.02		SD	0.10	0.04	0.02	0.03	0.01		
%CV	8.5%	6.6%	12.1%	6.3%	6.1%		%CV	7.9%	4.2%	2.7%	8.4%	5.7%		
mean+3SD	2.40	1.63	1.28	0.67	0.32		mean+3SD	1.59	1.01	0.77	0.45	0.20		
mean-3SD	1.43	1.09	0.60	0.46	0.22		mean-3SD	0.98	0.78	0.66	0.27	0.14		
N	9	9	9	9	9		N	4	4	4	4	4		
kit median	1.97	1.40	0.90	0.58	0.27		kit median	1.32	0.88	0.72	0.36	0.17		
mean/target	1.35	1.56	1.40	1.44	1.61	1.47	mean/target	0.90	1.03	1.07	0.92	0.99	0.98	
free PSA Roche E170 (BMR/BM2) mean:							free PSA Abbott AxSYM (ABB/AB2) mean:							
mean	1.52	1.00	0.72	0.42	0.21		mean	1.40	0.98	0.62	0.38	0.18		
SD	0.07	0.07	0.08	0.03	0.01		N	1	1	2	1	1		
%CV	4.4%	7.0%	11.0%	7.7%	4.1%		mean/target	0.99	1.13	0.93	0.97	1.06	1.01	
mean+3SD	1.72	1.21	0.96	0.51	0.23									
mean-3SD	1.31	0.79	0.48	0.32	0.18									
N	7	8	8	6	6									
kit median	1.53	1.03	0.69	0.42	0.21									
mean/target	1.07	1.15	1.08	1.06	1.21	1.11								
free PSA kit average:							free PSA							
mean	1.75	1.20	0.87	0.50	0.24			TM141	TM142	TM143	TM144	TM145		
SD	0.25	0.19	0.15	0.08	0.04		* IS target	1.42	0.87	0.67	0.39	0.17		
all kit median	1.91	1.35	0.94	0.56	0.27		SD (+/-)	0.03	0.03	0.05	0.01	0.00		
							% CV	2.5%	3.1%	7.7%	2.8%	2.5%		
							high (30%)	1.85	1.13	0.87	0.51	0.21		
							low (30%)	0.99	0.61	0.47	0.27	0.12		
							* target value from a traceable PSA standard. See text for explanation.							

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	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias	
% free PSA all lab mean:							% free PSA DP5/DP5 mean:							
mean	11.1%	11.3%	11.8%	12.2%	11.8%		mean	10.3%	10.6%	11.5%	10.8%	10.5%		
SD	1.2%	1.2%	1.6%	1.5%	1.6%		SD	0.2%	0.4%	0.7%	0.9%	1.6%		
%CV	11.0%	11.0%	13.7%	12.4%	13.8%		%CV	2.0%	4.0%	6.0%	8.6%	14.8%		
mean+3SD	14.8%	15.0%	16.7%	16.7%	16.7%		mean+3SD	10.9%	11.9%	13.6%	13.6%	15.2%		
mean-3SD	7.5%	7.5%	7.0%	7.6%	6.9%		mean-3SD	9.6%	9.3%	9.4%	8.0%	5.8%		
N	39	43	60	55	41		N	3	4	4	4	3		
mean/target	1.07	1.17	1.15	1.16	1.30	1.17	kit median	10.2%	10.6%	11.4%	11.2%	10.6%		
							mean/target	0.99	1.10	1.12	1.03	1.15	1.08	
% free PSA BC1/BC1 mean:							% free PSA DA1/DA1 mean:							
mean	11.9%	12.3%	12.8%	12.9%	13.0%		mean	8.8%	9.6%	9.2%	10.0%	9.8%		
SD	1.0%	1.0%	1.3%	1.1%	1.1%		SD	0.6%	0.5%	0.4%	1.5%	0.7%		
%CV	8.0%	7.8%	9.9%	8.8%	8.6%		%CV	6.6%	4.7%	3.9%	15.0%	7.5%		
mean+3SD	14.8%	15.2%	16.6%	16.3%	16.3%		mean+3SD	10.5%	11.0%	10.3%	14.5%	12.0%		
mean-3SD	9.1%	9.4%	9.0%	9.5%	9.7%		mean-3SD	7.0%	8.2%	8.1%	5.5%	7.6%		
N	17	18	34	34	22		N	4	4	4	4	4		
kit median	11.9%	12.2%	13.0%	13.0%	13.0%		kit median	8.8%	9.7%	9.1%	10.4%	9.9%		
mean/target	1.15	1.28	1.24	1.23	1.43	1.27	mean/target	0.84	1.00	0.89	0.95	1.08	0.95	
% free PSA BM2/BM1 mean:							free PSA Abbott AxSYM (ABB/AB2) mean:							
mean	11.0%	10.7%	10.8%	11.3%	10.8%		mean	10.0%	9.0%	9.0%	10.0%	9.0%		
SD	0.5%	0.5%	0.8%	1.0%	0.5%		N	1	1	2	1	1		
%CV	4.6%	4.8%	7.2%	9.1%	5.0%		mean/target	0.96	0.94	0.87	0.95	0.99	0.94	
mean+3SD	12.5%	12.2%	13.1%	14.4%	12.4%									
mean-3SD	9.5%	9.2%	8.5%	8.2%	9.2%									
N	13	15	15	11	10									
kit median	11.0%	11.0%	10.5%	11.4%	10.6%									
mean/target	1.06	1.11	1.05	1.07	1.18	1.10								
% free PSA kit average:							% free PSA							
mean	10.4%	10.4%	10.7%	11.0%	10.6%			TM141	TM142	TM143	TM144	TM145		
SD	1.2%	1.3%	1.6%	1.2%	1.5%		IS target	10.4%	9.6%	10.3%	10.5%	9.1%		
all kit median	10.3%	10.6%	10.8%	10.8%	10.5%									

New York State Tumor Marker Proficiency Test September 2005
Summary of Results

	TM141	TM142	TM143	TM144	TM145	Average bias		TM141	TM142	TM143	TM144	TM145	Average bias
Complexed PSA all lab mean:							Complexed PSA COB/BA1 mean:						
mean	12.7	8.8	6.2	3.5	1.8		mean	12.7	8.9	6.3	3.5	1.8	
SD	1.5	0.7	0.6	0.3	0.2		SD	1.6	0.7	0.6	0.4	0.2	
%CV	11.9%	7.7%	9.9%	9.6%	10.9%		%CV	12.4%	7.9%	10.2%	9.9%	11.2%	
mean+3SD	17.3	10.9	8.1	4.6	2.3		mean+3SD	17.5	11.0	8.2	4.6	2.4	
mean-3SD	8.2	6.8	4.4	2.5	1.2		mean-3SD	8.0	6.8	4.3	2.5	1.2	
N	14	14	14	14	14		N	13	13	13	13	13	

	TM141	TM142	TM143	TM144	TM145		TM141	TM142	TM143	TM144	TM145	
% Complexed PSA all lab mean:							% Complexed PSA COB/BC1 mean:					
mean	91.0%	90.1%	89.5%	88.4%	85.6%		mean	79.1%	77.2%	79.4%	75.4%	77.1%
SD	9.0%	8.7%	9.6%	9.5%	9.8%		SD	4.9%	1.4%	5.3%	2.0%	8.8%
%CV	9.9%	9.6%	10.8%	10.8%	11.5%		%CV	6.1%	1.8%	6.7%	2.6%	11.4%
mean+3SD	117.9%	116.2%	118.5%	117.0%	115.1%		mean+3SD	93.6%	81.5%	95.4%	81.3%	103.3%
mean-3SD	64.1%	64.1%	60.6%	59.9%	56.1%		mean-3SD	64.5%	73.0%	63.4%	69.5%	50.8%
N	12	13	13	13	12		N	3	3	3	3	3

% Complexed PSA COB/BA1 or BA2 mean:					
mean	94.6%	93.4%	91.1%	91.2%	88.4%
SD	6.0%	5.1%	7.7%	6.1%	8.8%
%CV	6.3%	5.5%	8.4%	6.7%	10.0%
mean+3SD	112.5%	108.7%	114.1%	109.6%	114.9%
mean-3SD	76.6%	78.1%	68.1%	72.8%	62.0%
N	8	9	9	9	9