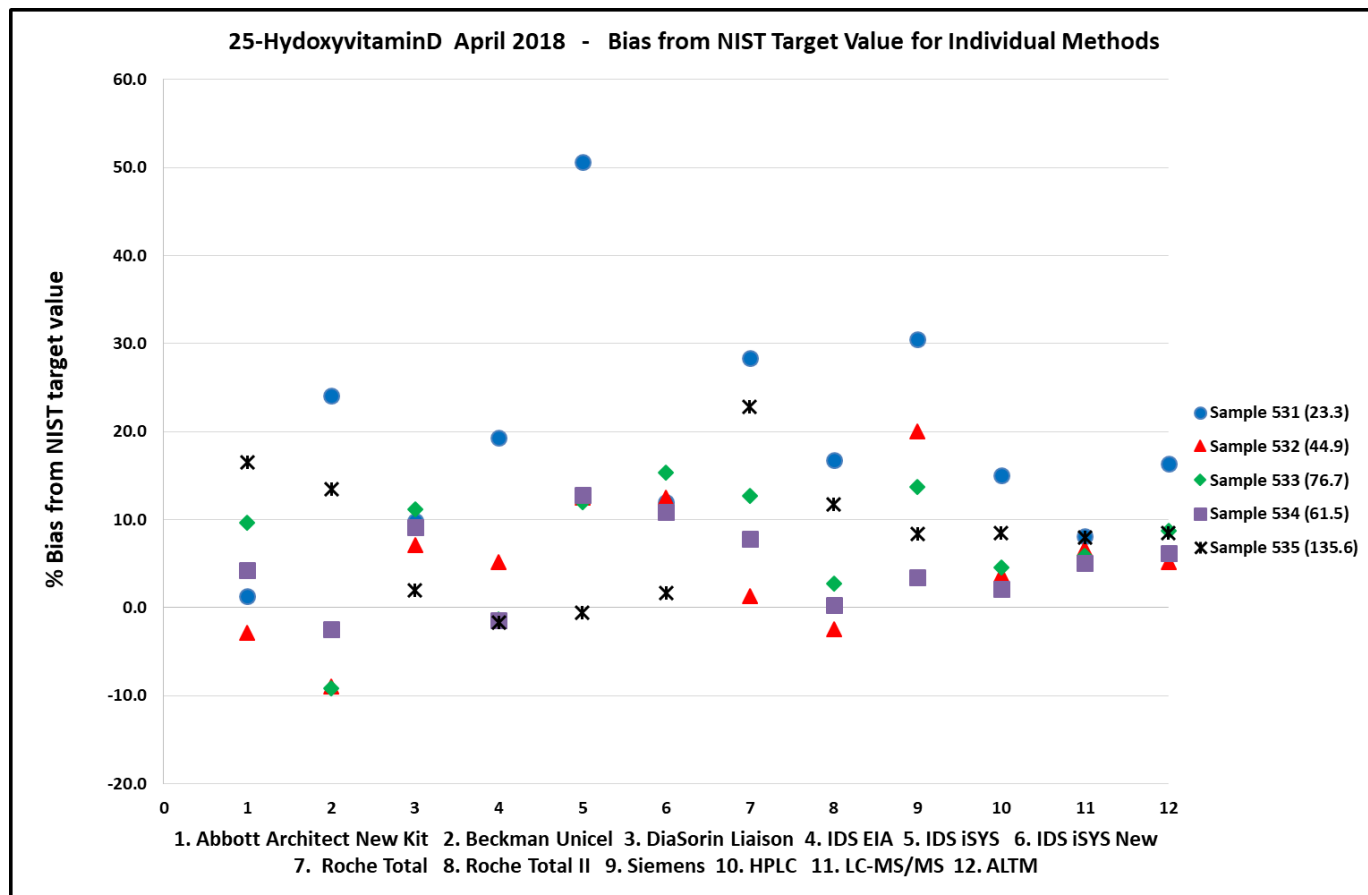


Chart showing between-sample variability of % bias from the target value



Legend; Sample numbers (target values nmol/L)

Sample 535

Sample 535 contained a high concentration of 25-OHD (NIST assigned value 135.6 nmol/L) and the means for the majority of methods for this sample were positively biased compared to the Target Value. Most of the major ligand binding assays were within 10% of the Target Value, the exceptions being the new Abbott Architect, Beckman Unicel and both Roche assays.

Samples with high levels of 25-OHD generally contain relatively high concentrations of 24,25(OH)2D. Since this metabolite cross reacts strongly in many ligand binding assays, its presence may contribute to any observed positive bias.

Similarly, the level of 3-epi-25-OHD3 was high in sample 535 (9.1 nmol/L) and will have contributed to the total 25-OHD in those HPLC/UV and LC-MS/MS assays unable to resolve the two metabolites. Immunoassays do not cross react with the 3-epimer.

3-epi-25-hydroxyvitamin D3 results for samples 531 – 535

DEQAS Lab No.	Method	Sample 531 3-epi-25OH-D3 nmol/L	Sample 532 3-epi-25OH-D3 nmol/L	Sample 533 3-epi-25OH-D3 nmol/L	Sample 534 3-epi-25OH-D3 nmol/L	Sample 535 3-epi-25OH-D3 nmol/L
189	LC-MS/MS					5.9
255	LC-MS/MS	1.2	3.4	5.2		11.8
528	LC-MS/MS	<3.75	<3.75	<3.75	<3.75	6.8
1479	LC-MS/MS	1.7	2.7	4.1	2.9	8.8
1864	LC-MS/MS	<2.7	<2.7	5.2	<2.7	8.2
1919	LC-MS/MS	<6.25	<6.25	<6.25	<6.25	<6.25
1921	LC-MS/MS			<6.0		9.4
1970	LC-MS/MS	<2.1	3.6	6.1	3.7	11.2
2004	LC-MS/MS	1.2	2.1	4.0	2.2	7.8
2017	LC-MS/MS	0.7	2.4	3.1	<3.0	7.0
2123	LC-MS/MS	1.6	2.7	5.0	2.7	9.4
2204	LC-MS/MS	<0.1	<0.1	5.2	3.2	9.5
2211	LC-MS/MS	1.4	2.3	4.3	2.5	9.0
Median		1.3	2.7	5.0	2.8	8.9
Mean		1.3	2.7	4.7	2.9	8.7
SD		0.36	0.56	0.89	0.53	1.73
CV%		27.5	20.5	19.0	18.5	19.8
n		6	7	9	6	12

Comment:

The statistics were calculated on the numeric results only and on untrimmed data. Clearly, with such a small number of results the summary statistics are very unreliable.

This data is for information purposes only.

24,25-dihydroxyvitamin D results for samples 531 – 535

DEQAS Lab No.	Method	Sample 531 24,25(OH)2-D3 nmol/L	Sample 532 24,25(OH)2-D3 nmol/L	Sample 533 24,25(OH)2-D3 nmol/L	Sample 534 24,25(OH)2-D3 nmol/L	Sample 535 24,25(OH)2-D3 nmol/L
52	LC-MS/MS	1.2	2.3	6.3	3.6	10.0
528	LC-MS/MS	1.2	2.2	7.4	3.8	10.8
1173	LC-MS/MS	1.7	3.5	8.8	5.0	13.2
1455	LC-MS/MS	1.4	2.7	6.4	4.2	10.8
1479	LC-MS/MS	1.6	4.7	7.5	4.2	13.4
1751	LC-MS/MS	1.2	2.7	4.8	3.3	8.4
1864	LC-MS/MS	1.5	2.8	4.8	3.4	6.6
2004	LC-MS/MS	1.4	2.9	7.4	4.7	10.9
2123	LC-MS/MS	1.5	3.0	7.7	4.2	11.7
2211	LC-MS/MS	1.4	2.8	6.8	4.1	10.6
Median		1.4	2.8	7.1	4.2	10.8
Mean		1.4	2.8	6.8	4.0	10.8
SD		0.14	0.34	0.96	0.41	1.36
CV%		10.1	11.9	14.1	10.2	12.6

Comment:

The statistics have been calculated on trimmed data. Clearly, with such a small number of results the summary statistics may be unreliable, however, the data for these samples show an improvement on previous distributions.

This data is for information purposes only.

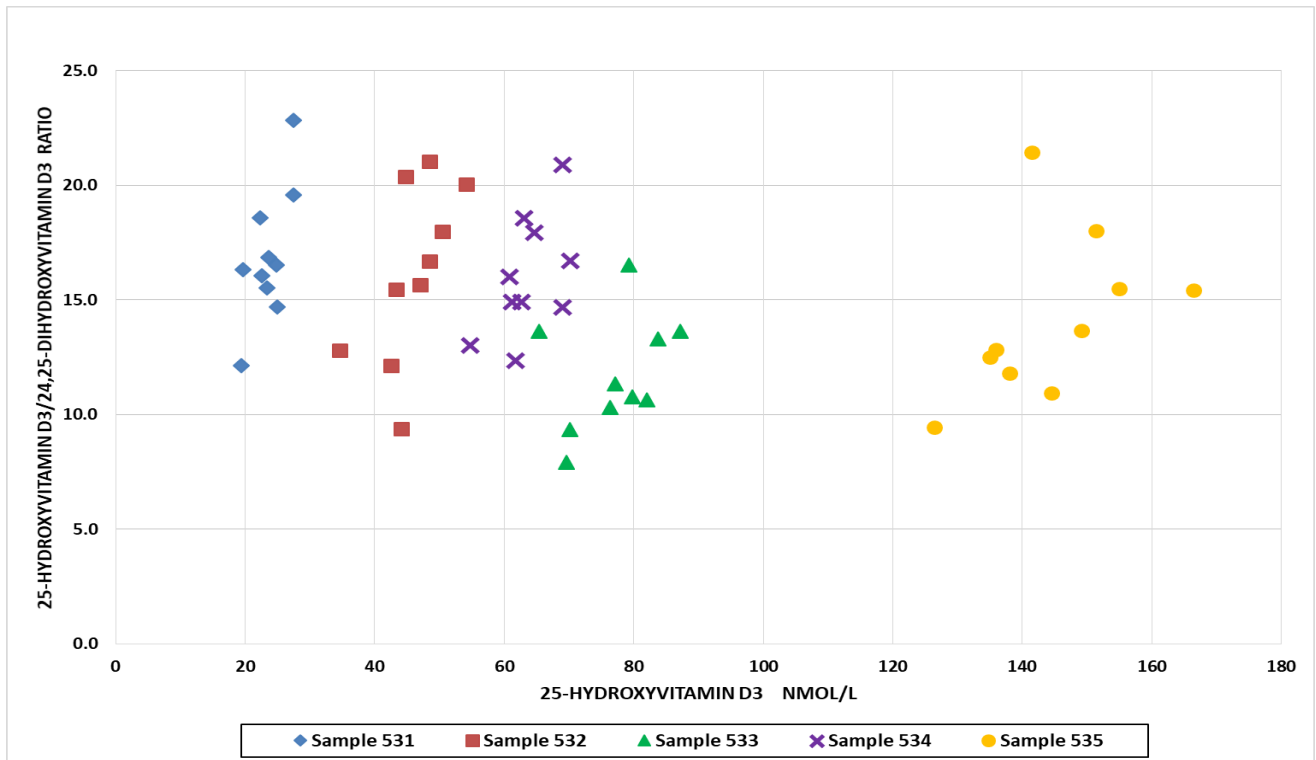
Lab Code	531	531	531	532	532	532	533	533	533	534	534	534	535	535	535
	25OH-D3	24,25-D3	Ratio	25OH-D3	24,25-D3	Ratio	25OH-D3	24,25-D3	Ratio	25OH-D3	24,25-D3	Ratio	25OH-D3	24,25-D3	Ratio
	nmol/L	nmol/L		nmol/L	nmol/L		nmol/L	nmol/L		nmol/L	nmol/L		nmol/L	nmol/L	
52	27.4	1.2	22.8	48.4	2.3	21.0	83.7	6.3	13.3	64.6	3.6	17.9	154.9	10.0	15.5
528	22.3	1.2	18.6	44.8	2.2	20.4	76.3	7.4	10.3	60.8	3.8	16.0	135.0	10.8	12.5
1173	25.0	1.7	14.7	42.5	3.5	12.1	69.6	8.8	7.9	61.7	5.0	12.3	144.5	13.2	10.9
1455	27.4	1.4	19.6	54.1	2.7	20.0	87.2	6.4	13.6	70.2	4.2	16.7	166.5	10.8	15.4
1479	19.4	1.6	12.1	44.1	4.7	9.4	70.1	7.5	9.3	54.7	4.2	13.0	126.4	13.4	9.4
1751	19.6	1.2	16.3	34.6	2.7	12.8	65.4	4.8	13.6	69.0	3.3	20.9	151.4	8.4	18.0
1864	23.3	1.5	15.5	50.4	2.8	18.0	79.3	4.8	16.5	63.1	3.4	18.6	141.5	6.6	21.4
2004	23.6	1.4	16.9	48.4	2.9	16.7	79.8	7.4	10.8	69.0	4.7	14.7	149.1	10.9	13.7
2123	24.8	1.5	16.5	47.0	3.0	15.7	82.0	7.7	10.6	62.7	4.2	14.9	138.1	11.7	11.8
2211	22.5	1.4	16.1	43.3	2.8	15.5	77.1	6.8	11.3	61.2	4.1	14.9	136.0	10.6	12.8
Median	23.5	1.4	16.2	45.9	2.8	16.2	78.2	7.1	11.1	62.9	4.2	15.5	143.0	10.8	13.2
Mean	23.6	1.4	15.8	46.1	2.8	16.4	77.2	6.8	11.6	64.0	4.0	15.8	143.8	10.8	13.8
SD	2.29	0.14	1.87	2.84	0.34	3.02	5.15	0.96	1.67	3.30	0.41	1.83	7.42	1.36	2.33
CV%	9.7	10.1	11.8	6.2	11.9	18.4	6.7	14.1	14.3	5.2	10.2	11.6	5.2	12.6	16.9

Comment:

The statistics have been calculated on trimmed data. Clearly, with such a small number of results the summary statistics may not be reliable.

This data is for information purposes only

Relationship between the ratio of 25OH-D3:24,25-D3 and 25OH-D3 for the results reported for each sample



Comment:

This chart shows the 25OH-D3/24,25(OH)2D3 ratio plotted against the 25OH-D3 value obtained by each participant. The significance of the ratio is discussed in Professor Glenville Jones’s abstract for the ACB Southern Region meeting held in July 2016. The abstract can be found on the DEQAS website (www.deqas.org) in the Document Library.

Free 25-hydroxyvitamin D results for samples 531 – 535 in pmol/L

DEQAS Lab No.	Method	Sample 531	Sample 532	Sample 533	Sample 534	Sample 535
368	DIAsource ELISA	15.6	17.3	20.4	16.5	44.6
2215	In-house ELISA	8.0	11.3	17.3	12.3	33.5
2262	DIAsource ELISA	11.5	14.0	20.0	15.1	39.6

Comment:

This data is for information purposes only.