

<b>NHS Greater Glasgow &amp; Clyde Immunology and Neuroimmunology</b>		
<b>LI_SPEC_3</b>	<b>Measurement Uncertainty: Summary Table for Specialist Techniques</b>	<b>Version: 6</b>
<b>Author: Lauren Hennessy</b>	<b>Authoriser: Fran Henriquez</b>	<b>Date of Issue: 19/06/2026</b>

## Uncertainty of Measurement: Summary table for Specialist Techniques

Measurement Uncertainty (MU) is calculated using internal quality control (IQC)

The raw data and calculations can be found at the following location:

<\\xggc-fsrv-04\GGC Biochemistry\IMMUNOLOGY\QUALITY\Quality Control\Uncertainty of Measurement>

Analyte	<b>Acetylcholine receptor antibodies</b>
	Positive IQC
Mean (x)	10.05
Number of measurements (n)	44
Estimated Standard Deviation (s)	0.94
Coefficient of Variance (%CV)	9.32%
Coverage factor (k) to define a confidence level of 95%	2
<b>Relative standard expanded uncertainty (U)</b>	<b>± 18.6%</b>
Uncertainty of measurement <b>example</b> (using IQC)	10.05 ± 1.87 nmol/L (8.2– 11.9 nmol/L)

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Analyte	<b>GAD antibodies on the DS2</b>
	Positive IQC
Mean (x)	72.7
Number of measurements (n)	42
Estimated Standard Deviation (s)	5.23
Coefficient of Variance (%CV)	7.19%
Coverage factor (k) to define a confidence level of 95%	2
<b>Relative standard expanded uncertainty (U)</b>	<b>± 14.4%</b>
Uncertainty of measurement <b>example</b> (using IQC)	72.7 ± 10.5 U/mL (62.2 – 83.1 U/mL)

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Analyte	<b>Hib antibodies on DS2</b>	
	Low IQC	High IQC
Mean (x)	0.367	4.6
Number of measurements (n)	26	29
Estimated Standard Deviation (s)	0.05	0.23
Coefficient of Variance (%CV)	12.58%	5.04%
Coverage factor (k) to define a confidence level of 95%	2	2
<b>Relative standard expanded uncertainty (U)</b>	<b>± 25.2%</b>	<b>± 10.1%</b>
Uncertainty of measurement <b>example</b> (using IQC)	0.367 ± 0.092 mg/L (0.275 – 0.459 mg/L)	4.6 ± 0.47 mg/L (4.1 – 5.5 mg/L)

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Analyte	Intrinsic factor antibodies on DS2
	Positive IQC
Mean (x)	47.1
Number of measurements (n)	234
Estimated Standard Deviation (s)	4.2
Coefficient of Variance (%CV)	8.96%
Coverage factor (k) to define a confidence level of 95%	2
<b>Relative standard expanded uncertainty (U)</b>	<b>± 17.9%</b>
Uncertainty of measurement <b>example</b> (using IQC)	47.1 ± 8.4 units (38.7 – 55.5 units)

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Analyte	PCP antibodies on DS2	
	Low IQC	High IQC
Mean (x)	25.5	241
Number of measurements (n)	44	69
Estimated Standard Deviation (s)	1.32	41.2
Coefficient of Variance (%CV)	5.18%	17.1%
Coverage factor (k) to define a confidence level of 95%	2	2
<b>Relative standard expanded uncertainty (U)</b>	<b>± 10.4%</b>	<b>± 34.2%</b>
Uncertainty of measurement <b>example</b> (using IQC)	25.5 ± 2.64 mg/L (22.9 – 28.1 mg/L)	241 ± 82.4 mg/L (159 – 323 mg/L)

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Analyte	Tetanus toxoid antibodies on DS2	
	Low IQC	High IQC
Mean (x)	0.320	2.94
Number of measurements (n)	100	111
Estimated Standard Deviation (s)	0.02	0.27
Coefficient of Variance (%CV)	6.9%	9.06%
Coverage factor (k) to define a confidence level of 95%	2	2
<b>Relative standard expanded uncertainty (U)</b>	<b>± 13.8%</b>	<b>± 18.1%</b>
Uncertainty of measurement <b>example</b> (using IQC)	0.320 ± 0.044 IU/mL (0.276 – 0.364 IU/mL)	2.94 ± 0.53 IU/mL (2.4– 3.5 IU/mL)

For the details of the calculation and MU protocol please refer to document QP\_5: Measurement Uncertainty Protocol.