| NHS Greater Glasgow & Clyde Immunology and Neuroimmunology | | |
|---|---|---|
| **LI_ICHEM_3** | **Measurement Uncertainty Summary Table for Optilite assays** | **Version: 5** |
| **Author: Lauren Hennessy** | **Authoriser: Sylvia Arthur** | **Date of Issue: 01/07/2026** |

# Measurement Uncertainty: Summary table for Optilite assays

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 | **C1 inhibitor concentration on Optilite** | |
|---|---|---|
| | C1 Inhibitor Low IQC | C1 Inhibitor High IQC |
| Mean (x) | 0.12 | 0.329 |
| Number of measurements (n) | 70 | 73 |
| Estimated Standard Deviation (s) | 0.01 | 0.02 |
| Coefficient of Variance (%CV) | 7.84% | 5.17% |
| Coverage factor (k) to define a confidence level of 95% | 2 | 2 |
| | | |
| **Relative standard expanded uncertainty (U)** | **± 15.7%** | **± 10.3%** |
| | | |
| Uncertainty of measurement **example** (using IQC**)** | 0.12 ± 0.019 g/L<br><br>(0.10 – 0.14 g/L) | 0.33 ± 0.034 g/L<br><br>(0.30 – 0.36 g/L) |
| | | |

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| Analyte | **Serum free light chains (Kappa) on Optilite** | |
|---|---|---|
| | Kappa low positive IQC | Kappa high positive IQC |
| Mean (x) | 39.6 | 393.5 |
| Number of measurements (n) | 191 | 383 |
| Estimated Standard Deviation (s) | 1.33 | 18.51 |
| Coefficient of Variance (%CV) | 3.35% | 4.70% |
| Coverage factor (k) to define a confidence level of 95% | 2 | 2 |
| | | |
| **Relative standard expanded uncertainty (U)** | **± 6.7%** | **± 9.4%** |
| | | |
| Uncertainty of measurement **example** (using IQC**)** | 39.6 ± 2.7 mg/L<br><br>(36.9 – 42.3 mg/L) | 393.5 ± 37.0 mg/L<br><br>(356.5– 430.5 mg/L) |
| | | |

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| Analyte | **Serum free light chains (Lambda) on Optilite** | |
|---|---|---|
| | Lambda low positive IQC | Lambda high positive IQC |
| Mean (x) | 33.1 | 311.5 |
| Number of measurements (n) | 406 | 152 |
| Estimated Standard Deviation (s) | 1.20 | 12.52 |
| Coefficient of Variance (%CV) | 3.64% | 4.02% |
| Coverage factor (k) to define a confidence level of 95% | 2 | 2 |
| | | |
| **Relative standard expanded uncertainty (U)** | **± 7.3%** | **± 8.0%** |
| | | |
| Uncertainty of measurement **example** (using IQC**)** | 33.1 ± 2.4 mg/L<br><br>(30.7 – 35.5 mg/L) | 311.5 ± 25.0 mg/L<br><br>(286.5 – 336.6 mg/L) |
| | | |

For the details of the calculation and MU protocol please refer to document QP_5: Measurement Uncertainty Protocol.