**Supplemental Table 1.** Processing using the workflow described in Figure 2, the table below reports the quality control metrics including fraction of missing data, coefficient of variation (CV), and intraclass correlation coefficient (ICC) for each analyte.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **ADNI-1** | | | **ADNI-GO/2** | | |
| **Analyte** | **Fraction missing** | **CV** | **ICC** | **Fraction missing** | **CV** | **ICC** |
| **CA** | **1.84%** | **0.08** | **0.99** | **0.44%** | **0.09** | **1.00** |
| **CDCA** | **7.48%** | **0.15** | **1.00** | **6.64%** | **0.13** | **1.00** |
| **DCA** | **1.23%** | **0.08** | **0.99** | **1.44%** | **0.07** | **0.98** |
| **GCA** | **0.12%** | **0.09** | **0.97** | **0.00%** | **0.06** | **0.99** |
| **GCDCA** | **0.00%** | **0.07** | **0.98** | **0.00%** | **0.06** | **0.99** |
| **GDCA** | **1.35%** | **0.06** | **0.99** | **1.77%** | **0.07** | **0.98** |
| **GLCA** | **32.15%** | **0.10** | **0.98** | **23.34%** | **0.12** | **0.96** |
| **GUDCA** | **4.66%** | **0.10** | **0.96** | **3.54%** | **0.10** | **0.99** |
| **HDCA** | **96.93%** | **NA** | **NA** | **96.35%** | **NA** | **NA** |
| **LCA** | **36.81%** | **0.52** | **0.61** | **27.21%** | **0.35** | **0.82** |
| **MCA (a)** | **100.00%** | **NA** | **NA** | **100.00%** | **NA** | **NA** |
| **MCA (b)** | **100.00%** | **NA** | **NA** | **100.00%** | **NA** | **NA** |
| **MCA(o)** | **100.00%** | **NA** | **NA** | **99.89%** | **NA** | **NA** |
| **TCA** | **35.95%** | **0.10** | **0.97** | **22.12%** | **0.09** | **1.00** |
| **TCDCA** | **2.58%** | **0.08** | **0.97** | **2.21%** | **0.08** | **0.98** |
| **TDCA** | **2.70%** | **0.08** | **0.96** | **1.66%** | **0.13** | **0.96** |
| **TLCA** | **25.89%** | **0.17** | **0.90** | **33.30%** | **0.24** | **0.63** |
| **TMCA(a+b)** | **28.22%** | **0.13** | **0.96** | **15.38%** | **0.13** | **0.96** |
| **TUDCA** | **5.52%** | **0.22** | **0.90** | **6.64%** | **0.11** | **0.95** |
| **UDCA** | **39.75%** | **0.14** | **0.96** | **7.85%** | **0.15** | **1.00** |