

Results of CDC Newborn Screening Proficiency Testing

Neonatal Screening Centers in Taiwan

Year : 2019 ; Quarter : 1

I. Routine Screening Items in Taiwan

| Assay Item : TSH | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|-------|
| Lab | Sample 11961 | Sample 11962 | Sample 11963 | Sample 11964 | Sample 11965 | Cut-Off | Unit |
| Lab 652 | 9.2 | 66.7(P) | 7.2 | 7.0 | 13.0 | 18.0 | uU/ml |
| Lab 686 | 8.0 | 61.9(P) | 7.0 | 7.0 | 14.0 | 22 | uU/ml |
| Lab 687 | 8.9 | 66.5(P) | 7.6 | 7.1 | 15.0 | 20.0 | uU/ml |
| Expected value* | 11.3(P) | 85.2 | 10.4(P) | 10.8 | 17.6 | 30 | uU/ml |
| N for mean (not including outliers) | 338 | 332 | 334 | 330 | 335 | - | - |
| Outliers | 9 | 16 | 14 | 18 | 13 | - | - |
| Mean | 8.5 | 64.9 | 7.6 | 7.7 | 14.2 | - | uU/ml |
| Upper limit (95%) | 12.7 | 92.0 | 11.2 | 11.5 | 20.4 | - | uU/ml |
| Lower limit (95%) | 4.4 | 37.7 | 4.0 | 3.9 | 8.0 | - | uU/ml |
| No. of clinical assessment within normal limits | 346 | 4 | 349 | 345 | 307 | - | - |
| No. of clinical assessment outsides normal limits | 3 | 345 | 0 | 4 | 42 | - | - |

* : Expected values were determined by CDC.

(P) : The **positive** result assigned by the participants.

: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : 17-OHP | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|-------|
| Lab | Sample 11961 | Sample 11962 | Sample 11963 | Sample 11964 | Sample 11965 | Cut-Off | Unit |
| Lab 652 | 6.4 | 4.4 | 112.4(P) | 14.0 | 8.8 | 29 | ng/ml |
| Lab 686 | 5.7 | 4.2 | 91.5(P) | 6.7 | 4.9 | 33 | ng/ml |
| Lab 687 | 7.1 | 3.9 | 79.8(P) | 10.1 | 7.9 | 30.0 | ng/ml |
| Expected value* | 6.2 | 5.3 | 86.1 | 6.9 | 6.0(P) | 35 | ng/ml |
| N for mean (not including outliers) | 267 | 266 | 260 | 263 | 263 | - | - |
| Outliers | 9 | 9 | 19 | 16 | 14 | - | - |
| Mean | 5.2 | 3.9 | 81.7 | 7.4 | 5.4 | - | ng/ml |
| Upper limit (95%) | 8.3 | 6.4 | 112.4 | 12.0 | 8.6 | - | ng/ml |
| Lower limit (95%) | 2.0 | 1.4 | 51.0 | 2.9 | 2.1 | - | ng/ml |
| No. of clinical assessment within normal limits | 279 | 278 | 4 | 273 | 276 | - | - |
| No. of clinical assessment outsides normal limits | 0 | 1 | 275 | 6 | 3 | - | - |

* : Expected values were determined by CDC.

(P) : The **positive** result assigned by the participants.

: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : TGal | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|-------|
| Lab | Sample 11961 | Sample 11962 | Sample 11963 | Sample 11964 | Sample 11965 | Cut-Off | Unit |
| Lab 652 | 1.8 | 2.0 | 1.5 | 1.2 | 21.3(P) | 15.0 | mg/dL |
| Lab 686 | 0.6 | 2.7 | 0.0 | 0.0 | 22.0(P) | 8 | mg/dL |
| Lab 687 | 3.1 | 2.5 | 2.9 | 2.9 | 25.2(P) | 12.0 | mg/dL |
| Expected value* | 2.7 | 3.8 | 2.6 | 2.5 | 25.0(P) | 10 | mg/dL |
| N for mean (not including outliers) | 177 | 176 | 177 | 179 | 176 | - | - |
| Outliers | 7 | 7 | 6 | 5 | 7 | - | - |
| Mean | 2.7 | 2.8 | 2.4 | 2.4 | 23.9 | - | mg/dL |
| Upper limit (95%) | 5.0 | 5.2 | 4.9 | 5.0 | 35.2 | - | mg/dL |
| Lower limit (95%) | 0.4 | 0.5 | 0.0 | 0.0 | 12.7 | - | mg/dL |
| No. of clinical assessment within normal limits | 186 | 186 | 186 | 186 | 9 | - | - |
| No. of clinical assessment outsides normal limits | 0 | 0 | 0 | 0 | 177 | - | - |

* : Expected values were determined by CDC.

(P) : The **positive** result assigned by the participants.

: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : Phe | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 64.6 | 266.1(P) | 55.3 | 57.2 | 50.9 | 110 | umol/L |
| Lab 686 | 65.8 | 244.0(P) | 49.8 | 55.5 | 43.3 | 100 | umol/L |
| Lab 687 | 66.3 | 266.5(P) | 50.9 | 64.2 | 49.3 | 90.0 | umol/L |
| Expected value* | 124.7 | 311.4(P) | 92.2 | 113.1 | 79.6 | 150 | umol/L |
| N for mean (not including outliers) | 399 | 408 | 398 | 398 | 393 | - | - |
| Outliers | 20 | 14 | 21 | 22 | 27 | - | - |
| Mean | 73.62 | 293.19 | 59.78 | 67.83 | 52.91 | - | umol/L |
| Upper limit (95%) | 99.6 | 389.9 | 85.9 | 94.4 | 73.4 | - | umol/L |
| Lower limit (95%) | 47.7 | 196.5 | 33.6 | 41.2 | 32.4 | - | umol/L |
| No. of clinical assessment within normal limits | 416 | 10 | 418 | 417 | 420 | - | - |
| No. of clinical assessment outsides normal limits | 7 | 413 | 5 | 6 | 3 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : Leu | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 110.3 | 130.8 | 142.7 | 152.1 | 68.9 | 250 | umol/L |
| Lab 686 | 100.0 | 109.0 | 123.0 | 138.0 | 60.5 | 280 | umol/L |
| Lab 687 | 80.9 | 96.7 | 105.6 | 128.9 | 56.7 | 280.0 | umol/L |
| Expected value* | 147.4 | 190.9 | 217.9 | 267.3 | 73.5 | 290 | umol/L |
| N for mean (not including outliers) | 316 | 317 | 318 | 317 | 314 | - | - |
| Outliers | 9 | 8 | 7 | 8 | 11 | - | - |
| Mean | 96.27 | 114.27 | 123.52 | 143.24 | 63.53 | - | umol/L |
| Upper limit (95%) | 127.0 | 147.4 | 159.2 | 183.9 | 84.8 | - | umol/L |
| Lower limit (95%) | 65.5 | 81.2 | 87.8 | 102.6 | 42.3 | - | umol/L |
| No. of clinical assessment within normal limits | 326 | 327 | 326 | 326 | 326 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 0 | 1 | 1 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : Val | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 95.3 | 130.1 | 124.3 | 96.7 | 70.7 | 300 | umol/L |
| Lab 686 | 92.8 | 112.0 | 116.0 | 89.1 | 68.5 | 280 | umol/L |
| Lab 687 | 119.9 | 145.5 | 144.2 | 134.2 | 104.9 | 250.0 | umol/L |
| Expected value* | 79.6 | 117.8 | 119.9 | 91.8 | 63.8 | 300 | umol/L |
| N for mean (not including outliers) | 282 | 283 | 284 | 282 | 280 | - | - |
| Outliers | 10 | 9 | 8 | 10 | 12 | - | - |
| Mean | 91.51 | 117.40 | 116.04 | 94.69 | 72.65 | - | umol/L |
| Upper limit (95%) | 124.3 | 158.5 | 154.5 | 128.2 | 98.2 | - | umol/L |
| Lower limit (95%) | 58.7 | 76.3 | 77.6 | 61.2 | 47.1 | - | umol/L |
| No. of clinical assessment within normal limits | 292 | 292 | 293 | 293 | 293 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 0 | 0 | 0 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : Met | | | | | | | |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 34.1 | 35.6 | 26.2 | 42.8 | 117.9(P) | 46.6 | umol/L |
| Lab 686 | 34.0 | 30.1 | 23.5 | 37.5 | 93.6(P) | 50 | umol/L |
| Lab 687 | 35.7 | 35.2 | 26.4 | 46.4 | 108.7(P) | 60.0 | umol/L |
| Expected value* | 38.2 | 37.2 | 31.9 | 52.0 | 128.2(P) | 75 | umol/L |
| N for mean (not including outliers) | 299 | 301 | 298 | 301 | 301 | - | - |
| Outliers | 10 | 8 | 11 | 8 | 8 | - | - |
| Mean | 35.37 | 33.94 | 26.54 | 43.52 | 105.67 | - | umol/L |
| Upper limit (95%) | 46.4 | 44.4 | 34.9 | 57.2 | 138.5 | - | umol/L |

| | | | | | | | |
|---|------|------|------|------|------|---|--------|
| Lower limit (95%) | 24.3 | 23.5 | 18.2 | 29.9 | 72.9 | - | umol/L |
| No. of clinical assessment within normal limits | 298 | 298 | 310 | 263 | 13 | - | - |
| No. of clinical assessment outsides normal limits | 13 | 13 | 1 | 48 | 298 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
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| Assay Item : C3 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 2.0 | 0.8 | 1.8 | 7.2(P) | 0.6 | 4.74 | umol/L |
| Lab 686 | 2.23 | 1.03 | 1.97 | 9.11(P) | 0.7 | 6 | umol/L |
| Lab 687 | 2.31 | 1.04 | 2.17 | 8.62(P) | 0.67 | 6.00 | umol/L |
| Expected value* | 2.04 | 1.03 | 2.18 | 8.29(P) | 0.75 | 5.65 | umol/L |
| N for mean (not including outliers) | 307 | 307 | 305 | 302 | 304 | - | - |
| Outliers | 10 | 10 | 12 | 15 | 13 | - | - |
| Mean | 1.91 | 0.91 | 1.88 | 7.68 | 0.66 | - | umol/L |
| Upper limit (95%) | 2.59 | 1.28 | 2.58 | 10.23 | 0.93 | - | umol/L |
| Lower limit (95%) | 1.22 | 0.54 | 1.19 | 5.13 | 0.38 | - | umol/L |
| No. of clinical assessment within normal limits | 312 | 316 | 311 | 22 | 316 | - | - |
| No. of clinical assessment outsides normal limits | 5 | 1 | 6 | 295 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C5 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.04 | 0.04 | 0.04 | 0.28 | 0.04 | 0.57 | umol/L |
| Lab 686 | 0.04 | 0.04 | 0.03 | 0.31 | 0.04 | 0.6 | umol/L |
| Lab 687 | 0.11 | 0.12 | 0.11 | 0.41 | 0.10 | 0.60 | umol/L |
| Expected value* | 0.04 | 0.04 | 0.04 | 0.33 | 0.04 | 0.70 | umol/L |
| N for mean (not including outliers) | 311 | 311 | 307 | 308 | 312 | - | - |
| Outliers | 15 | 15 | 19 | 18 | 14 | - | - |
| Mean | 0.05 | 0.05 | 0.05 | 0.31 | 0.05 | - | umol/L |
| Upper limit (95%) | 0.09 | 0.09 | 0.09 | 0.41 | 0.10 | - | umol/L |
| Lower limit (95%) | 0.01 | 0.01 | 0.01 | 0.21 | 0.01 | - | umol/L |
| No. of clinical assessment within normal limits | 325 | 326 | 325 | 300 | 325 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 0 | 1 | 26 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C5DC | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 1.23(P) | 0.44(P) | 0.03 | 0.03 | 0.02 | 0.27 | umol/L |
| Lab 686 | 1.39(P) | 0.46(P) | 0.02 | 0.02 | 0.02 | 0.3 | umol/L |
| Lab 687 | 1.75(P) | 0.53(P) | 0.01 | 0.02 | 0.04 | 0.30 | umol/L |
| Expected value* | 1.25(P) | 0.40(P) | 0.01 | 0.01 | 0.01 | 0.35 | umol/L |
| N for mean (not including outliers) | 300 | 298 | 297 | 297 | 297 | - | - |
| Outliers | 8 | 10 | 11 | 11 | 11 | - | - |
| Mean | 1.50 | 0.50 | 0.03 | 0.03 | 0.04 | - | umol/L |
| Upper limit (95%) | 2.49 | 0.86 | 0.08 | 0.08 | 0.09 | - | umol/L |
| Lower limit (95%) | 0.50 | 0.14 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 4 | 61 | 306 | 307 | 307 | - | - |
| No. of clinical assessment outsides normal limits | 304 | 247 | 2 | 1 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C6 | | | | | | | |
|-----------------|--------------|--------------|--------------|--------------|--------------|---------|------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |

| | | | | | | | |
|--|------|------|------|------|------|------|--------|
| Lab 652 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.62 | umol/L |
| Lab 686 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | umol/L |
| Lab 687 | 0.08 | 0.08 | 0.08 | 0.06 | 0.07 | 0.50 | umol/L |
| Expected value* | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.40 | umol/L |
| N for mean (not including outliers) | 287 | 284 | 282 | 284 | 288 | - | - |
| Outliers | 14 | 17 | 19 | 17 | 13 | - | - |
| Mean | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | - | umol/L |
| Upper limit (95%) | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 299 | 301 | 300 | 299 | 299 | - | - |
| No. of clinical assessment outsides normal limits | 2 | 0 | 1 | 2 | 2 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C8 | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.02 | 0.58(P) | 0.03 | 0.02 | 0.03 | 0.56 | umol/L |
| Lab 686 | 0.04 | 0.75(P) | 0.04 | 0.04 | 0.05 | 0.5 | umol/L |
| Lab 687 | 0.01 | 0.66(P) | 0.05 | 0.02 | 0.06 | 0.50 | umol/L |
| Expected value* | 0.01 | 0.68(P) | 0.01 | 0.01 | 0.01 | 0.45 | umol/L |
| N for mean (not including outliers) | 317 | 304 | 313 | 314 | 309 | - | - |
| Outliers | 10 | 23 | 14 | 13 | 18 | - | - |
| Mean | 0.03 | 0.75 | 0.04 | 0.03 | 0.04 | - | umol/L |
| Upper limit (95%) | 0.07 | 0.96 | 0.07 | 0.07 | 0.08 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.54 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 326 | 11 | 326 | 326 | 327 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 316 | 1 | 1 | 0 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C10 | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.02 | 0.07 | 0.01 | 0.01 | 0.04 | 0.53 | umol/L |
| Lab 686 | 0.04 | 0.1 | 0.04 | 0.04 | 0.11 | 0.5 | umol/L |
| Lab 687 | 0.02 | 0.10 | 0.03 | 0.02 | 0.05 | 0.50 | umol/L |
| Expected value* | 0.01 | 0.08 | 0.01 | 0.01 | 0.01 | 0.45 | umol/L |
| N for mean (not including outliers) | 300 | 304 | 298 | 293 | 302 | - | - |
| Outliers | 14 | 10 | 16 | 21 | 12 | - | - |
| Mean | 0.03 | 0.09 | 0.03 | 0.02 | 0.07 | - | umol/L |
| Upper limit (95%) | 0.05 | 0.14 | 0.05 | 0.05 | 0.14 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 314 | 312 | 313 | 314 | 314 | - | - |
| No. of clinical assessment outsides normal limits | 0 | 2 | 1 | 0 | 0 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C10:1 | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.01 | 0.06 | 0.01 | 0.01 | 0.01 | 0.48 | umol/L |
| Lab 686 | | | | | | | umol/L |
| Lab 687 | 0.05 | 0.13 | 0.14 | 0.05 | 0.08 | 0.30 | umol/L |
| Expected value* | 0.01 | 0.09 | 0.01 | 0.01 | 0.01 | 0.30 | umol/L |
| N for mean (not including outliers) | 266 | 267 | 265 | 263 | 266 | - | - |
| Outliers | 15 | 14 | 16 | 18 | 15 | - | - |
| Mean | 0.02 | 0.09 | 0.03 | 0.02 | 0.02 | - | umol/L |
| Upper limit (95%) | 0.04 | 0.15 | 0.07 | 0.05 | 0.06 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 279 | 273 | 280 | 278 | 279 | - | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. of clinical assessment outsides normal limits | 2 | 8 | 1 | 3 | 2 | - | - |
|---|---|---|---|---|---|---|---|

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

II. Pilot Screening Items in Taiwan

| Assay Item : Tyr | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 96.0 | 42.8 | 140.1 | 110.6 | 57.0 | 300 | umol/L |
| Lab 686 | 97.8 | 39.8 | 146.0 | 112.0 | 59.7 | 280 | umol/L |
| Lab 687 | 92.3 | 38.6 | 138.8 | 119.1 | 60.7 | 250.0 | umol/L |
| Expected value* | 103.4 | 39.5 | 158.7 | 126.3 | 61.3 | 350 | umol/L |
| N for mean (not including outliers) | 303 | 305 | 305 | 308 | 307 | - | - |
| Outliers | 15 | 13 | 12 | 10 | 11 | - | - |
| Mean | 104.61 | 46.51 | 158.41 | 127.57 | 68.50 | - | umol/L |
| Upper limit (95%) | 132.3 | 61.6 | 203.5 | 164.5 | 88.3 | - | umol/L |
| Lower limit (95%) | 76.9 | 31.4 | 113.3 | 90.6 | 48.7 | - | umol/L |
| No. of clinical assessment within normal limits | 315 | 320 | 302 | 313 | 320 | - | - |
| No. of clinical assessment outsides normal limits | 5 | 0 | 18 | 7 | 0 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : Cit | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 171.5(P) | 21.2 | 16.4 | 15.1 | 19.3 | 29 | umol/L |
| Lab 686 | 180.0(P) | 18.5 | 15.7 | 16.0 | 16.6 | 35 | umol/L |
| Lab 687 | 175.0(P) | 19.0 | 16.7 | 15.8 | 17.9 | 20.0 | umol/L |
| Expected value* | 181.3(P) | 17.7 | 15.6 | 13.3 | 15.6 | 55 | umol/L |
| N for mean (not including outliers) | 283 | 286 | 286 | 284 | 283 | - | - |
| Outliers | 13 | 10 | 10 | 12 | 13 | - | - |
| Mean | 173.43 | 19.52 | 17.38 | 16.43 | 17.30 | - | umol/L |
| Upper limit (95%) | 223.7 | 26.7 | 23.2 | 22.8 | 23.0 | - | umol/L |
| Lower limit (95%) | 123.2 | 12.3 | 11.5 | 10.0 | 11.6 | - | umol/L |
| No. of clinical assessment within normal limits | 3 | 297 | 297 | 297 | 296 | - | - |
| No. of clinical assessment outsides normal limits | 294 | 0 | 0 | 0 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : Arg | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11951 | Sample 11952 | Sample 11953 | Sample 11954 | Sample 11955 | Cut-Off | Unit |
| Lab 652 | 12.8 | 10.2 | 16.4 | 101.5(P) | 8.5 | 60 | umol/L |
| Lab 686 | 17.5 | 13.0 | 20.4 | 115.0(P) | 11.2 | 50 | umol/L |
| Lab 687 | 15.2 | 11.4 | 17.9 | 108.6(P) | 12.6 | 40.0 | umol/L |
| Expected value* | 17.8 | 14.7 | 22.2 | 130.2(P) | 12.3 | 70 | umol/L |
| N for mean (not including outliers) | 259 | 261 | 259 | 265 | 258 | - | - |
| Outliers | 13 | 11 | 13 | 7 | 14 | - | - |
| Mean | 13.91 | 10.88 | 17.11 | 103.22 | 9.67 | - | umol/L |
| Upper limit (95%) | 21.9 | 16.6 | 25.3 | 154.1 | 15.3 | - | umol/L |
| Lower limit (95%) | 6.0 | 5.2 | 8.9 | 52.3 | 4.1 | - | umol/L |
| No. of clinical assessment within normal limits | 267 | 272 | 272 | 19 | 272 | - | - |
| No. of clinical assessment outsides normal limits | 6 | 1 | 1 | 254 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
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| Assay Item : C0(L) | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 23.1 | 29.2 | 32.9 | 22.4 | 14.8 | 8.5 | umol/L |
| Lab 686 | 23.7 | 34.6 | 35.1 | 26.6 | 19.3 | 10 | umol/L |
| Lab 687 | 26.14 | 32.39 | 36.96 | 27.75 | 19.98 | 13.00 | umol/L |
| Expected value* | 21.92 | 27.61 | 31.51 | 26.09 | 17.67 | 8.20 | umol/L |
| N for mean (not including outliers) | 310 | 311 | 307 | 310 | 309 | - | - |
| Outliers | 10 | 9 | 13 | 10 | 11 | - | - |
| Mean | 23.89 | 33.23 | 36.29 | 27.00 | 19.59 | - | umol/L |
| Upper limit (95%) | 32.40 | 44.01 | 46.87 | 36.05 | 26.82 | - | umol/L |
| Lower limit (95%) | 15.38 | 22.44 | 25.71 | 17.95 | 12.36 | - | umol/L |
| No. of clinical assessment within normal limits | 320 | 319 | 319 | 320 | 318 | - | - |
| No. of clinical assessment outsides normal limits | 0 | 1 | 1 | 0 | 2 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C4 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.05 | 0.04 | 0.04 | 0.15 | 0.04 | 1.4 | umol/L |
| Lab 686 | 0.05 | 0.06 | 0.05 | 0.18 | 0.05 | 0.8 | umol/L |
| Lab 687 | 0.08 | 0.12 | 0.09 | 0.19 | 0.08 | 1.20 | umol/L |
| Expected value* | 0.07 | 0.07 | 0.07 | 0.20 | 0.07 | 1.30 | umol/L |
| N for mean (not including outliers) | 277 | 276 | 279 | 283 | 277 | - | - |
| Outliers | 18 | 19 | 16 | 12 | 18 | - | - |
| Mean | 0.08 | 0.08 | 0.08 | 0.19 | 0.08 | - | umol/L |
| Upper limit (95%) | 0.13 | 0.13 | 0.13 | 0.27 | 0.13 | - | umol/L |
| Lower limit (95%) | 0.03 | 0.03 | 0.03 | 0.12 | 0.03 | - | umol/L |
| No. of clinical assessment within normal limits | 293 | 293 | 292 | 293 | 292 | - | - |
| No. of clinical assessment outsides normal limits | 2 | 2 | 3 | 2 | 3 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C5:1 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.02 | 0.01 | 0.02 | 0.02 | 0.01 | 0.25 | umol/L |
| Lab 686 | | | | | | | umol/L |
| Lab 687 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.25 | umol/L |
| Expected value* | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.25 | umol/L |
| N for mean (not including outliers) | 273 | 271 | 272 | 274 | 268 | - | - |
| Outliers | 17 | 19 | 18 | 16 | 22 | - | - |
| Mean | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | - | umol/L |
| Upper limit (95%) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 289 | 289 | 290 | 289 | 289 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 0 | 1 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C5OH | | | | | | | |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.35 | 0.30 | 0.27 | 0.31 | 0.28 | 0.78 | umol/L |
| Lab 686 | 0.62 | 0.62 | 0.53 | 0.6 | 0.62 | 0.8 | umol/L |
| Lab 687 | 0.50 | 0.48 | 0.45 | 0.44 | 0.42 | 0.75 | umol/L |
| Expected value* | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.80 | umol/L |
| N for mean (not including outliers) | 268 | 275 | 271 | 275 | 272 | - | - |
| Outliers | 13 | 6 | 10 | 6 | 9 | - | - |
| Mean | 0.40 | 0.40 | 0.40 | 0.41 | 0.40 | - | umol/L |
| Upper limit (95%) | 0.59 | 0.60 | 0.59 | 0.61 | 0.61 | - | umol/L |

| | | | | | | | |
|---|------|------|------|------|------|---|--------|
| Lower limit (95%) | 0.21 | 0.19 | 0.20 | 0.20 | 0.19 | - | umol/L |
| No. of clinical assessment within normal limits | 261 | 262 | 261 | 262 | 257 | - | - |
| No. of clinical assessment outsides normal limits | 20 | 19 | 20 | 19 | 24 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C10:2 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.48 | |
| Lab 686 | | | | | | | |
| Lab 687 | 0.03 | 0.03 | 0.05 | 0.02 | 0.04 | 0.15 | |
| Expected value* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.15 | |
| N for mean (not including outliers) | 190 | 190 | 192 | 190 | 189 | - | - |
| Outliers | 13 | 13 | 11 | 13 | 14 | - | - |
| Mean | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | - | |
| Upper limit (95%) | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | - | |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - | |
| No. of clinical assessment within normal limits | 203 | 203 | 203 | 203 | 201 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 1 | 1 | 3 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C14 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.04 | 0.04 | 0.13 | 0.04 | 0.18 | 0.83 | umol/L |
| Lab 686 | 0.05 | 0.04 | 0.13 | 0.04 | 0.23 | 0.75 | umol/L |
| Lab 687 | 0.07 | 0.07 | 0.18 | 0.06 | 0.33 | 0.60 | umol/L |
| Expected value* | 0.04 | 0.04 | 0.14 | 0.04 | 0.29 | 0.75 | umol/L |
| N for mean (not including outliers) | 281 | 283 | 280 | 280 | 281 | - | - |
| Outliers | 20 | 18 | 21 | 21 | 20 | - | - |
| Mean | 0.06 | 0.05 | 0.17 | 0.05 | 0.25 | - | umol/L |
| Upper limit (95%) | 0.09 | 0.08 | 0.24 | 0.09 | 0.36 | - | umol/L |
| Lower limit (95%) | 0.03 | 0.02 | 0.10 | 0.02 | 0.15 | - | umol/L |
| No. of clinical assessment within normal limits | 300 | 299 | 297 | 300 | 283 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 2 | 4 | 1 | 18 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C14:1 | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.02 | 0.02 | 0.97(P) | 0.02 | 0.33 | 0.44 | umol/L |
| Lab 686 | 0.02 | 0.02 | 1.04(P) | 0.02 | 0.42 | 0.7 | umol/L |
| Lab 687 | 0.06 | 0.06 | 1.06(P) | 0.05 | 0.53 | 0.60 | umol/L |
| Expected value* | 0.02 | 0.02 | 2.47(P) | 0.02 | 0.90(NE) | 0.60 | umol/L |
| N for mean (not including outliers) | 296 | 300 | 294 | 289 | 290 | - | - |
| Outliers | 15 | 11 | 17 | 22 | 21 | - | - |
| Mean | 0.03 | 0.03 | 1.17 | 0.03 | 0.44 | - | umol/L |
| Upper limit (95%) | 0.06 | 0.07 | 1.63 | 0.07 | 0.66 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.70 | 0.00 | 0.22 | - | umol/L |
| No. of clinical assessment within normal limits | 310 | 309 | 7 | 310 | 169 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 2 | 304 | 1 | 142 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C16 | | | | | | | |
|------------------|--------------|--------------|--------------|--------------|--------------|---------|------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |

| | | | | | | | |
|--|------|------|------|------|----------|------|--------|
| Lab 652 | 3.16 | 1.39 | 3.61 | 1.7 | 9.86(P) | 6.41 | umol/L |
| Lab 686 | 3.73 | 1.7 | 4.27 | 2.17 | 14.2(P) | 7.0 | umol/L |
| Lab 687 | 2.88 | 1.21 | 3.69 | 1.59 | 10.58(P) | 8.00 | umol/L |
| Expected value* | 3.10 | 1.42 | 4.08 | 1.93 | 12.82(P) | 7.50 | umol/L |
| N for mean (not including outliers) | 296 | 294 | 295 | 299 | 299 | - | - |
| Outliers | 14 | 16 | 15 | 11 | 11 | - | - |
| Mean | 2.91 | 1.35 | 3.89 | 1.77 | 11.62 | - | umol/L |
| Upper limit (95%) | 3.61 | 1.68 | 4.80 | 2.23 | 14.60 | - | umol/L |
| Lower limit (95%) | 2.22 | 1.02 | 2.97 | 1.31 | 8.64 | - | umol/L |
| No. of clinical assessment within normal limits | 299 | 310 | 289 | 309 | 10 | - | - |
| No. of clinical assessment outsides normal limits | 11 | 0 | 21 | 1 | 300 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C16OH | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.01 | 0.01 | 0.01 | 0.01 | 0.21(P) | 0.18 | umol/L |
| Lab 686 | 0.01 | 0.01 | 0.01 | 0.01 | 0.41(P) | 0.2 | umol/L |
| Lab 687 | 0.01 | 0.01 | 0.01 | 0.01 | 0.35(P) | 0.13 | umol/L |
| Expected value* | 0.01 | 0.01 | 0.01 | 0.01 | 1.06(NE) | 0.13 | umol/L |
| N for mean (not including outliers) | 287 | 288 | 293 | 287 | 294 | - | - |
| Outliers | 19 | 18 | 13 | 19 | 12 | - | - |
| Mean | 0.01 | 0.01 | 0.01 | 0.01 | 0.26 | - | umol/L |
| Upper limit (95%) | 0.03 | 0.02 | 0.03 | 0.03 | 0.38 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.14 | - | umol/L |
| No. of clinical assessment within normal limits | 306 | 306 | 305 | 305 | 17 | - | - |
| No. of clinical assessment outsides normal limits | 0 | 0 | 1 | 1 | 289 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C18 | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.43 | 0.39 | 0.40 | 0.40 | 2.60(P) | 1.78 | umol/L |
| Lab 686 | 0.46 | 0.46 | 0.39 | 0.45 | 3.45(P) | 2.3 | umol/L |
| Lab 687 | 0.47 | 0.44 | 0.45 | 0.43 | 3.12(P) | 3.00 | umol/L |
| Expected value* | 0.43 | 0.43 | 0.43 | 0.43 | 3.77(P) | 2.30 | umol/L |
| N for mean (not including outliers) | 275 | 276 | 276 | 280 | 280 | - | - |
| Outliers | 18 | 17 | 17 | 13 | 13 | - | - |
| Mean | 0.47 | 0.47 | 0.47 | 0.46 | 3.42 | - | umol/L |
| Upper limit (95%) | 0.60 | 0.59 | 0.59 | 0.59 | 4.26 | - | umol/L |
| Lower limit (95%) | 0.34 | 0.34 | 0.34 | 0.33 | 2.58 | - | umol/L |
| No. of clinical assessment within normal limits | 292 | 292 | 292 | 292 | 14 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 1 | 1 | 279 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C18:1 | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.85 | 0.74 | 0.73 | 0.75 | 4.40(P) | 2.75 | umol/L |
| Lab 686 | 0.83 | 0.8 | 0.69 | 0.79 | 5.53(P) | 3.2 | umol/L |
| Lab 687 | 0.76 | 0.70 | 0.72 | 0.69 | 4.60(P) | 3.00 | umol/L |
| Expected value* | 0.79 | 0.79 | 0.79 | 0.79 | 6.90(P) | 3.50 | umol/L |
| N for mean (not including outliers) | 261 | 270 | 260 | 266 | 260 | - | - |
| Outliers | 20 | 11 | 21 | 15 | 21 | - | - |
| Mean | 0.80 | 0.81 | 0.79 | 0.81 | 5.32 | - | umol/L |
| Upper limit (95%) | 1.05 | 1.12 | 1.06 | 1.10 | 6.86 | - | umol/L |
| Lower limit (95%) | 0.55 | 0.49 | 0.53 | 0.51 | 3.78 | - | umol/L |
| No. of clinical assessment within normal limits | 281 | 280 | 281 | 281 | 15 | - | - |

| | | | | | | | |
|---|---|---|---|---|-----|---|---|
| No. of clinical assessment outsides normal limits | 0 | 1 | 0 | 0 | 266 | - | - |
|---|---|---|---|---|-----|---|---|

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

III. Others

| Assay Item : C3DC | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | | | | | | | umol/L |
| Lab 686 | | | | | | | umol/L |
| Lab 687 | 0.04 | 0.03 | 0.04 | 0.04 | 0.04 | 0.30 | umol/L |
| Expected value* | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.25 | umol/L |
| N for mean (not including outliers) | 120 | 120 | 121 | 119 | 120 | - | - |
| Outliers | 6 | 6 | 5 | 7 | 6 | - | - |
| Mean | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | - | umol/L |
| Upper limit (95%) | 0.09 | 0.08 | 0.08 | 0.08 | 0.08 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 125 | 125 | 126 | 126 | 124 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 0 | 0 | 2 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C4OH | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | | | | | | | umol/L |
| Lab 686 | | | | | | | umol/L |
| Lab 687 | 0.06 | 0.07 | 0.07 | 0.07 | 0.06 | 0.66 | umol/L |
| Expected value* | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.65 | umol/L |
| N for mean (not including outliers) | 113 | 111 | 112 | 111 | 109 | - | - |
| Outliers | 4 | 6 | 5 | 6 | 8 | - | - |
| Mean | 0.05 | 0.05 | 0.05 | 0.06 | 0.05 | - | umol/L |
| Upper limit (95%) | 0.11 | 0.10 | 0.09 | 0.13 | 0.11 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 116 | 116 | 116 | 115 | 116 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 1 | 2 | 1 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.

| Assay Item : C18OH | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|---------|--------|
| Lab | Sample 11911 | Sample 11912 | Sample 11913 | Sample 11914 | Sample 11915 | Cut-Off | Unit |
| Lab 652 | 0.01 | 0.01 | 0.01 | 0.18(P) | 0.01 | 0.10 | umol/L |
| Lab 686 | 0.01 | 0.01 | 0.01 | 0.19(P) | 0.01 | 0.3 | umol/L |
| Lab 687 | 0.01 | 0.01 | 0.01 | 0.18(P) | 0.01 | 0.10 | umol/L |
| Expected value* | 0.00 | 0.00 | 0.00 | 0.31(P) | 0.00 | 0.10 | umol/L |
| N for mean (not including outliers) | 244 | 242 | 246 | 242 | 240 | - | - |
| Outliers | 14 | 16 | 12 | 16 | 18 | - | - |
| Mean | 0.01 | 0.01 | 0.01 | 0.18 | 0.01 | - | umol/L |
| Upper limit (95%) | 0.02 | 0.02 | 0.02 | 0.27 | 0.03 | - | umol/L |
| Lower limit (95%) | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | - | umol/L |
| No. of clinical assessment within normal limits | 257 | 257 | 256 | 26 | 254 | - | - |
| No. of clinical assessment outsides normal limits | 1 | 1 | 2 | 232 | 4 | - | - |

- * : Expected values were determined by CDC.
(P) : The **positive** result assigned by the participants.
: The data is out of 95% upper/lower limit, or decision is different from CDC.



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