

**Supplementary table 1. The behavioral evaluation via FOB test in NOG mice 6 hours after initial administration of hUC-MSCs.**

| Parameter                            |                                                  |        | Control     | Low dose    | High dose   |
|--------------------------------------|--------------------------------------------------|--------|-------------|-------------|-------------|
| <b>General condition observation</b> | Feeding                                          | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Drinking                                         | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Vertical hair                                    | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Abnormal posture                                 | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Abnormal behavior                                | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Grooming behavior                                | Normal | 12/12       | 12/12       | 12/12       |
| <b>Awareness</b>                     | Awaken                                           | Normal | 12/12       | 12/12       | 12/12       |
|                                      |                                                  | 0      | 0/12        | 0/12        | 1/12        |
|                                      | The difficulty of removal                        | 1      | 7/12        | 1/12        | 0/12        |
|                                      |                                                  | 2      | 5/12        | 11/12       | 11/12       |
|                                      | Head contact                                     | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Visual positioning reflex                        | Normal | 12/12       | 12/12       | 12/12       |
| <b>Emotion</b>                       | Passive response                                 | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Abnormal vocalization and crowing                | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Aggressiveness towards cage-mates                | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Restless and restless                            | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Hairing (Times/2min)                             |        | 1 ± 2       | 1 ± 1       | 1 ± 1       |
|                                      |                                                  |        |             |             |             |
| <b>Motion &amp; Activity</b>         | Position                                         | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Autonomous activities                            | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Total length of the route (mm)                   |        | 5698 ± 1904 | 4565 ± 2065 | 6133 ± 2293 |
|                                      | The length of the route in the central area (mm) |        | 989 ± 474   | 756 ± 497   | 1129 ± 413  |
|                                      | Average speed inside the box (mm/s)              |        | 47 ± 16     | 38 ± 17     | 51 ± 19     |
|                                      | Standing (times/2 minutes)                       |        | 8 ± 5       | 5 ± 4       | 9 ± 5       |
| <b>Central stimulation</b>           | Ataxic gait                                      | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Convulsions, tremors, convulsions                | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Auditory startle reflex                          | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Pinch tail pain reflex                           | Normal | 12/12       | 12/12       | 12/12       |
| <b>Muscular tension</b>              | Hypotonic gait                                   | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Abdominal tension                                | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Limb tension                                     | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Grip                                             | Normal | 12/12       | 12/12       | 12/12       |
| <b>Reflex</b>                        | Ocular reflex                                    | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Auricular reflex                                 | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Planar righting reflection                       | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Spatial righting reflection                      | Normal | 12/12       | 12/12       | 12/12       |
| <b>Autonomous signs</b>              | Micturition                                      | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Defecation                                       | Normal | 12/12       | 12/12       | 12/12       |
|                                      | Shed tears                                       | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Drooling                                         | NA     | 12/12       | 12/12       | 12/12       |
|                                      | Pupillary response                               | Normal | 12/12       | 12/12       | 12/12       |
| <b>Others</b>                        | Body temperature (°C)                            |        | 37.9 ± 0.6  | 37.7 ± 0.6  | 38.1 ± 0.3  |
|                                      | Death                                            | NA     | 12/12       | 12/12       | 12/12       |

Note: The data were expressed as number of occurrences/total number of animals, or mean  $\pm$  SD. “NA” indicates that this behavior was not appeared.

**Supplementary table 2. The hematology analysis of NOG mice treated with hUC-MSCs in the examination at the end of the recovery period.**

| Parameter                     | Control     |       | Low dose    |       | High dose   |       |
|-------------------------------|-------------|-------|-------------|-------|-------------|-------|
| Number of animals             | 6           |       | 6           |       | 6           |       |
| WBC ( $10^3/\mu\text{L}$ )    | 0.82 $\pm$  | 0.44  | 0.94 $\pm$  | 0.74  | 0.63 $\pm$  | 0.17  |
| #NEUT ( $10^3/\mu\text{L}$ )  | 0.61 $\pm$  | 0.35  | 0.79 $\pm$  | 0.68  | 0.45 $\pm$  | 0.15  |
| #LYMPH ( $10^3/\mu\text{L}$ ) | 0.12 $\pm$  | 0.04  | 0.08 $\pm$  | 0.03  | 0.10 $\pm$  | 0.02  |
| #MONO ( $10^3/\mu\text{L}$ )  | 0.05 $\pm$  | 0.05  | 0.02 $\pm$  | 0.01  | 0.04 $\pm$  | 0.01  |
| #EOS ( $10^3/\mu\text{L}$ )   | 0.04 $\pm$  | 0.01  | 0.05 $\pm$  | 0.03  | 0.04 $\pm$  | 0.01  |
| #BASO ( $10^3/\mu\text{L}$ )  | 0.00 $\pm$  | 0.00  | 0.00 $\pm$  | 0.00  | 0.00 $\pm$  | 0.00  |
| #LUC ( $10^3/\mu\text{L}$ )   | 0.002 $\pm$ | 0.004 | 0.000 $\pm$ | 0.000 | 0.003 $\pm$ | 0.005 |
| %NEUT (%)                     | 73.9 $\pm$  | 6.0   | 79.2 $\pm$  | 7.7   | 70.7 $\pm$  | 6.0   |
| %LYMPH (%)                    | 15.8 $\pm$  | 5.4   | 10.9 $\pm$  | 5.0   | 16.3 $\pm$  | 4.2   |
| %MONO (%)                     | 4.9 $\pm$   | 2.3   | 2.8 $\pm$   | 1.3   | 5.5 $\pm$   | 1.8   |
| %EOS (%)                      | 4.9 $\pm$   | 1.6   | 6.6 $\pm$   | 2.5   | 6.5 $\pm$   | 2.7   |
| %BASO (%)                     | 0.2 $\pm$   | 0.3   | 0.2 $\pm$   | 0.3   | 0.4 $\pm$   | 0.2   |
| %LUC (%)                      | 0.2 $\pm$   | 0.3   | 0.4 $\pm$   | 0.3   | 0.7 $\pm$   | 0.8   |
| RBC ( $10^6/\mu\text{L}$ )    | 8.26 $\pm$  | 0.13  | 8.27 $\pm$  | 0.21  | 8.32 $\pm$  | 0.25  |
| HGB (g/dL)                    | 129 $\pm$   | 3     | 127 $\pm$   | 6     | 127 $\pm$   | 4     |
| HCT (%)                       | 45.1 $\pm$  | 1.0   | 44.3 $\pm$  | 1.5   | 43.9 $\pm$  | 1.2   |
| MCV (fL)                      | 54.6 $\pm$  | 0.7   | 53.6 $\pm$  | 0.5*  | 52.8 $\pm$  | 0.8** |
| MCH (Pg)                      | 15.6 $\pm$  | 0.3   | 15.4 $\pm$  | 0.4   | 15.3 $\pm$  | 0.3   |
| MCHC (g/L)                    | 286 $\pm$   | 3     | 288 $\pm$   | 5     | 290 $\pm$   | 3     |
| RDW (%)                       | 13.1 $\pm$  | 0.3   | 12.9 $\pm$  | 0.1   | 12.8 $\pm$  | 0.2   |
| PLT ( $10^3/\mu\text{L}$ )    | 1562 $\pm$  | 241   | 1562 $\pm$  | 133   | 1774 $\pm$  | 251   |
| MPV (fL)                      | 7.5 $\pm$   | 0.3   | 7.9 $\pm$   | 0.3   | 8.0 $\pm$   | 0.3   |
| %RETIC (%)                    | 2.86 $\pm$  | 0.60  | 2.79 $\pm$  | 0.27  | 2.14 $\pm$  | 0.32* |
| #RETIC ( $10^9/\text{L}$ )    | 235.9 $\pm$ | 48.0  | 230.4 $\pm$ | 23.6  | 177.7 $\pm$ | 26.6  |
| PT (s)                        | 7.1 $\pm$   | 0.3   | 7.2 $\pm$   | 0.5   | 7.2 $\pm$   | 0.3   |
| Fbg (g/L)                     | 2.260 $\pm$ | 0.802 | 2.308 $\pm$ | 0.278 | 2.492 $\pm$ | 0.705 |
| APTT (s)                      | 28.3 $\pm$  | 13.2  | 20.9 $\pm$  | 5.7   | 21.9 $\pm$  | 0.4   |

Note: The data were expressed as mean  $\pm$  SD. “\*”or“\*\*” indicates a statistically significant difference at  $p < 0.05$  and  $p < 0.01$  when compared to the control group; Abbreviation: WBC, white blood cell; RBC, red blood cell count; HGB, hemoglobin concentration; HCT, hematocrit; MCV, mean cell volume; MCH, mean cell hemoglobin; MCHC, mean cell hemoglobin concentration; RDW, Red blood Cell distribution width; PLT, platelets; MPV, Mean platelet volume; NEUT, neutrophils; LYMPH, lymphocytes; MONO, monocytes; EOS, eosinophils; BASO, basophiles; LUC, large unstained cells; RETIC, reticulocyte; PT, Prothrombin time; Fbg, fibrinogen; APTT, activated partial thromboplastin time.

**Supplementary table 3. The blood biochemistry analysis of NOG mice treated with hUC-MSCs in the examination of drug withdrawal.**

| Parameter                | Control         | Low dose       | High dose       |
|--------------------------|-----------------|----------------|-----------------|
| Number of animals        | 12              | 12             | 12              |
| ALT (IU/L)               | 25.69 ± 2.72    | 23.35 ± 2.95   | 24.22 ± 6.59    |
| AST (IU/L)               | 68.59 ± 6.21    | 67.44 ± 5.36   | 67.36 ± 16.00   |
| ALP (IU/L)               | 93.49 ± 24.06   | 92.50 ± 23.08  | 93.95 ± 26.88   |
| T.BIL (umol/L)           | 2.167 ± 0.637   | 2.167 ± 0.717  | 2.236 ± 0.716   |
| CK (IU/L)                | 191.89 ± 112.93 | 180.63 ± 81.80 | 198.17 ± 146.10 |
| T.P (g/L)                | 44.75 ± 1.73    | 44.32 ± 1.51   | 45.03 ± 2.00    |
| ALB (g/L)                | 29.58 ± 1.30    | 29.16 ± 1.35   | 29.48 ± 1.48    |
| GLO (g/L)                | 15.17 ± 0.79    | 15.16 ± 0.89   | 15.55 ± 1.03    |
| A/G                      | 1.95 ± 0.11     | 1.93 ± 0.15    | 1.90 ± 0.14     |
| GLU (mmol/L)             | 5.022 ± 1.190   | 5.266 ± 0.931  | 6.506 ± 1.082** |
| BUN (mmol/L)             | 11.416 ± 0.880  | 11.588 ± 0.864 | 12.147 ± 1.382  |
| Crea (umol/L)            | 34.13 ± 3.31    | 34.93 ± 2.29   | 34.97 ± 3.12    |
| T.CHO (mmol/L)           | 1.583 ± 0.254   | 1.620 ± 0.298  | 1.643 ± 0.220   |
| TG (mmol/L)              | 0.705 ± 0.185   | 0.580 ± 0.081* | 0.614 ± 0.065   |
| K <sup>+</sup> (mmol/L)  | 4.36 ± 0.34     | 4.56 ± 0.36    | 4.46 ± 0.40     |
| Na <sup>+</sup> (mmol/L) | 153.6 ± 1.3     | 154.2 ± 1.4    | 154.2 ± 0.9     |
| Cl <sup>-</sup> (mmol/L) | 124.6 ± 4.1     | 120.1 ± 1.6**  | 118.9 ± 1.7**   |
| Ca (mmol/L)              | 2.03 ± 0.08     | 2.01 ± 0.05    | 2.03 ± 0.05     |

Note: The data were expressed as mean ± SD. “\*”or“\*\*” indicates a statistically significant difference at  $p < 0.05$  and  $p < 0.01$  when compared to the control group; Abbreviation: ALT, alanine aminotransferase; AST, aspartate aminotransferase; TP, total protein; ALB, albumin; TBIL, total bilirubin; ALP, alkaline phosphatase; r-GT, r-Glutamyltransferase; GLU, glucose; BUN, Blood urea nitrogen; Crea, Creatinine; CHO, cholesterol; TG, triglyceride; CK, creatine phosphokinase; GLO, Globulin; A/G, albumin/globulin ratio

**Supplementary table 4. The Organ weight and coefficient of NOG mice treated with hUC-MSCs in the examination at the end of the recovery period.**

| Parameter                    |                         | Male mice     |                 |                 | Female mice   |                |              |
|------------------------------|-------------------------|---------------|-----------------|-----------------|---------------|----------------|--------------|
|                              |                         | Control       | Low dose        | High dose       | Control       | Low dose       | High dose    |
| Number of animals            |                         | 6             | 6               | 6               | 6             | 6              | 6            |
| Body weight (g)              |                         | 27.0 ± 1.7    | 25.3 ± 1.4      | 26.0 ± 1.3      | 22.0 ± 1.4    | 21.3 ± 0.9     | 20.7±2.1     |
| <b>Brain</b>                 | Weight (g)              | 0.486 ± 0.019 | 0.476 ± 0.015   | 0.495 ± 0.014   | 0.491 ± 0.026 | 0.499 ± 0.022  | 0.486±0.017  |
|                              | Organ coefficient (%)   | 1.804 ± 0.098 | 1.888 ± 0.113   | 1.905 ± 0.097   | 2.231 ± 0.089 | 2.347 ± 0.119  | 2.365±0.175  |
| <b>Heart</b>                 | Weight (g)              | 0.121 ± 0.013 | 0.108 ± 0.005   | 0.114 ± 0.006   | 0.102 ± 0.011 | 0.097 ± 0.007  | 0.096±0.009  |
|                              | Organ coefficient (%)   | 0.448 ± 0.044 | 0.428 ± 0.024   | 0.440 ± 0.039   | 0.461 ± 0.038 | 0.459 ± 0.043  | 0.466±0.033  |
|                              | Organ brain coefficient | 0.249 ± 0.024 | 0.227 ± 0.012   | 0.231 ± 0.012   | 0.207 ± 0.018 | 0.195 ± 0.016  | 0.197±0.016  |
| <b>Liver</b>                 | Weight (g)              | 1.286 ± 0.134 | 1.033 ± 0.056** | 1.005 ± 0.077** | 0.925 ± 0.095 | 0.825 ± 0.024  | 0.809±0.108  |
|                              | Organ coefficient (%)   | 4.751 ± 0.215 | 4.085 ± 0.060** | 3.860 ± 0.147** | 4.203 ± 0.388 | 3.884 ± 0.155  | 3.917±0.414  |
|                              | Organ brain coefficient | 2.645 ± 0.242 | 2.170 ± 0.126** | 2.033 ± 0.168** | 1.886 ± 0.176 | 1.657 ± 0.073* | 1.662±0.202* |
| <b>Spleen</b>                | Weight (g)              | 0.021 ± 0.002 | 0.024 ± 0.006   | 0.019 ± 0.005   | 0.027 ± 0.005 | 0.023 ± 0.004  | 0.023±0.005  |
|                              | Organ coefficient (%)   | 0.077 ± 0.006 | 0.095 ± 0.026   | 0.073 ± 0.016   | 0.121 ± 0.021 | 0.106 ± 0.019  | 0.109±0.017  |
|                              | Organ brain coefficient | 0.043 ± 0.004 | 0.050 ± 0.014   | 0.039 ± 0.010   | 0.054 ± 0.011 | 0.045 ± 0.008  | 0.047±0.010  |
| <b>Kidney</b>                | Weight (g)              | 0.357 ± 0.033 | 0.332 ± 0.036   | 0.343 ± 0.015   | 0.244 ± 0.020 | 0.237 ± 0.017  | 0.228±0.025  |
|                              | Organ coefficient (%)   | 1.321 ± 0.060 | 1.309 ± 0.088   | 1.319 ± 0.069   | 1.106 ± 0.043 | 1.114 ± 0.086  | 1.102±0.073  |
|                              | Organ brain coefficient | 0.734 ± 0.055 | 0.696 ± 0.069   | 0.693 ± 0.031   | 0.496 ± 0.018 | 0.474 ± 0.022  | 0.468±0.042  |
| <b>Adrenal gland</b>         | Weight (g)              | 0.008 ± 0.004 | 0.007 ± 0.002   | 0.007 ± 0.002   | 0.009 ± 0.002 | 0.008 ± 0.000  | 0.008±0.002  |
|                              | Organ coefficient (%)   | 0.029 ± 0.016 | 0.029 ± 0.008   | 0.026 ± 0.006   | 0.040 ± 0.012 | 0.037 ± 0.003  | 0.036±0.009  |
|                              | Organ brain coefficient | 0.016 ± 0.009 | 0.015 ± 0.005   | 0.014 ± 0.004   | 0.018 ± 0.005 | 0.016 ± 0.001  | 0.015±0.004  |
| <b>Testis/<br/>Uterus</b>    | Weight (g)              | 0.194 ± 0.018 | 0.187 ± 0.006   | 0.186 ± 0.009   | 0.140 ± 0.030 | 0.156 ± 0.042  | 0.110±0.031  |
|                              | Organ coefficient (%)   | 0.720 ± 0.090 | 0.739 ± 0.039   | 0.717 ± 0.050   | 0.637 ± 0.144 | 0.729 ± 0.181  | 0.535±0.158  |
|                              | Organ brain coefficient | 0.398 ± 0.036 | 0.392 ± 0.016   | 0.377 ± 0.024   | 0.286 ± 0.067 | 0.312 ± 0.080  | 0.227±0.067  |
| <b>Epididymis/<br/>Ovary</b> | Weight (g)              | 0.094 ± 0.018 | 0.080 ± 0.018   | 0.086 ± 0.012   | 0.024 ± 0.006 | 0.025 ± 0.004  | 0.024±0.006  |
|                              | Organ coefficient (%)   | 0.348 ± 0.068 | 0.319 ± 0.077   | 0.329 ± 0.042   | 0.111 ± 0.029 | 0.116 ± 0.019  | 0.114±0.028  |
|                              | Organ brain coefficient | 0.194 ± 0.040 | 0.169 ± 0.040   | 0.173 ± 0.025   | 0.050 ± 0.014 | 0.050 ± 0.010  | 0.049±0.013  |

Note: The data were expressed as mean ± SD. “\*”or“\*\*” indicates a statistically significant difference at  $p < 0.05$  and  $p < 0.01$  when compared to the control group;

Organ coefficient (%) = g organ weight/g body weight×100%; Organ brain coefficient= g organ weight/g brain weight.

**Supplementary table 5. Concentration of human SRY DNA in tissue of NOG mice treated with hUC-MSCs (copies/mg, n=6)**

| Group     | Gender | 24 hours after last administration |       |      |        |        |                   | 4w after last administration |       |                       |                       |                       |                   |
|-----------|--------|------------------------------------|-------|------|--------|--------|-------------------|------------------------------|-------|-----------------------|-----------------------|-----------------------|-------------------|
|           |        | Skin                               | Blood | Lung | Kidney | Muscle | Testis/<br>Uterus | Skin                         | Blood | Lung                  | Kidney                | muscle                | Testis/<br>Uterus |
| Low dose  | male   | B                                  | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
|           |        | 1.99×10 <sup>3</sup>               | B     | B    | B      | B      | B                 | 5.69×10 <sup>2</sup>         | B     | B                     | B                     | B                     | B                 |
|           |        | B                                  | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
|           | female | 7.46×10 <sup>2</sup>               | B     | B    | B      | B      | B                 | B                            | B     | 5.61×10 <sup>4#</sup> | B                     | B                     | B                 |
|           |        | B                                  | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
|           |        | B                                  | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
| High dose | male   | B                                  | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
|           |        | 1.80×10 <sup>5</sup>               | B     | B    | B      | B      | B                 | 1.10×10 <sup>3</sup>         | B     | B                     | B                     | B                     | B                 |
|           |        | 1.10×10 <sup>4</sup>               | B     | B    | B      | B      | B                 | B                            | B     | B                     | 2.81×10 <sup>3#</sup> | B                     | B                 |
|           | female | 1.09×10 <sup>5</sup>               | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
|           |        | 4.07×10 <sup>3</sup>               | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | B                     | B                 |
|           |        | 2.13×10 <sup>5</sup>               | B     | B    | B      | B      | B                 | B                            | B     | B                     | B                     | 3.95×10 <sup>4#</sup> | B                 |

Note: “B” represents below the lower limit of quantification, which is 100 copies in this methodology/μL. “#” indicates that the data is suspected to be abnormal for the first time, and the data in the table are the results of two retests.

**Supplementary table 6. Summary of main reagent information**

| <b>Reagent Name</b>                                           | <b>Batch Number</b>            | <b>Manufacturer</b>                          | <b>Application</b> |
|---------------------------------------------------------------|--------------------------------|----------------------------------------------|--------------------|
| <b>Diff Timpac Reagent</b>                                    | 61801                          | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Whole Blood Cell Count Reagent</b>                         | 75863                          | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Rinse Sheath Fluid</b>                                     | 67287                          | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Quality Control (High Value)</b>                           | TP223095                       | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Quality Control (Medium Value)</b>                         | TP222095                       | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Quality Control (Low Value)</b>                            | TP221095                       | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Reticulocyte Staining Reagent</b>                          | 61749                          | Siemens Healthcare Diagnostics               | Hematology         |
| <b>EZ Dedicated Cleaning Solution/Agent</b>                   | 49972                          | Siemens Healthcare Diagnostics               | Hematology         |
| <b>Cleaning Solution I</b>                                    | A2069                          | SYSMAX CORPORATION                           | Coagulation        |
| <b>Quality Control I</b>                                      | 564848                         | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Quality Control P</b>                                      | 556730B                        | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Buffer Solution</b>                                        | 569915                         | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Calcium Chloride Solution</b>                              | 563892A                        | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Activated Partial Thromboplastin Time (APTT) Assay Kit</b> | 557663A                        | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Fibrinogen (Fbg) Assay Kit</b>                             | 565131                         | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Prothrombin Time (PT) Assay Kit</b>                        | 568060                         | Siemens Healthcare Diagnostics Products Gmbh | Coagulation        |
| <b>Alanine Aminotransferase Assay Kit</b>                     | 31923/60149796, 32875/60153348 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Aspartate Aminotransferase Assay Kit</b>                   | 32139/60151655                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Total Protein Liquid Reagent Kit</b>                       | 231090/50006356                | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Albumin Assay Kit</b>                                      | 022082/50006424                | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Total Bilirubin Assay Kit</b>                              | R1:DK880, R2:DK881             | Wako Pure Chemical Industries, Ltd           | Biochemistry       |
| <b>Alkaline Phosphatase Assay Kit</b>                         | 32489/60153352                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Gamma-Glutamyl Transferase Assay Kit</b>                   | 31798/60149794                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Glucose Assay Kit</b>                                      | 31232/60148201                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Urea Assay Kit</b>                                         | 31408/60148198                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Creatinine Liquid Reagent Kit</b>                          | 171046/50006230                | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Total Cholesterol Assay Kit</b>                            | 30908/60148226                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Triglyceride Assay Kit</b>                                 | 31069/60148173                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Creatine Kinase Assay Kit</b>                              | 31303/60148180                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Calcium Assay Kit</b>                                      | 30706/60148170                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>ISE Reference Electrode Solution</b>                       | L1607                          | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |
| <b>ISE Internal Calibration Solution</b>                      | J4478                          | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |
| <b>ISE Diluent</b>                                            | K2295                          | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |
| <b>ISE Cleaning Agent</b>                                     | H1323                          | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |
| <b>Normal Value Composite Control</b>                         | 31257/50273043                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Pathological Value Composite Control</b>                   | 29696/50275578                 | DiaSys Diagnostic Systems GmbH, Germany      | Biochemistry       |
| <b>Alkaline Cleaning Solution</b>                             | F6748                          | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |
| <b>Acid Cleaning Solution</b>                                 | E2067                          | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |
| <b>Antibacterial Phosphorus-Free Cleaning Agent</b>           | C1683, C1705                   | Hitachi Instruments (Suzhou) Co., Ltd        | Biochemistry       |

**Supplementary table 7. Hematological test items**

| Indicator Name                            | Abbreviation | Unit                | Detection Method                             | Detection Instrument |
|-------------------------------------------|--------------|---------------------|----------------------------------------------|----------------------|
| Red Blood Cell Count                      | RBC          | 10 <sup>6</sup> /μL | Laser Scattering                             | ADVIA2120            |
| White Blood Cell Count                    | WBC          | 10 <sup>3</sup> /μL | Laser Scattering                             | ADVIA2120            |
| Hemoglobin                                | HGB          | g/L                 | Cyanmethemoglobin Colorimetry                | ADVIA2120            |
| Platelet Count                            | PLT          | 10 <sup>3</sup> /μL | Two-Dimensional Laser Scattering             | ADVIA2120            |
| Hematocrit                                | HCT          | %                   | $HCT=(MCV \times RBC) \div 10$               | ADVIA2120            |
| Mean Corpuscular Volume                   | MCV          | fL                  | Laser Scattering                             | ADVIA2120            |
| Mean Corpuscular Hemoglobin               | MCH          | pg                  | $MCH=HGB \div RBC$                           | ADVIA2120            |
| Mean Corpuscular Hemoglobin Concentration | MCHC         | g/L                 | $MCHC=HGB \div (MCV \times RBC) \times 1000$ | ADVIA2120            |
| Mean Platelet Volume                      | MPV          | fL                  | Two-Dimensional Laser Scattering             | ADVIA2120            |
| Red Cell Distribution Width               | RDW          | %                   | Laser Scattering                             | ADVIA2120            |
| Neutrophil Count                          | #NEUT        | 10 <sup>3</sup> /μL | $\#NEUT=(\%NEUT \times WBC) \div 100$        | ADVIA2120            |
| Neutrophil Percentage                     | %NEUT        | %                   | Peroxidase Staining                          | ADVIA2120            |
| Lymphocyte Count                          | #LYMPH       | 10 <sup>3</sup> /μL | $\#LYMPH=(\%LYMPH \times WBC) \div 100$      | ADVIA2120            |
| Lymphocyte Percentage                     | %LYMPH       | %                   | Peroxidase Staining                          | ADVIA2120            |
| Monocyte Count                            | #MONO        | 10 <sup>3</sup> /μL | $\#MONO=(\%MONO \times WBC) \div 100$        | ADVIA2120            |
| Monocyte Percentage                       | %MONO        | %                   | Peroxidase Staining                          | ADVIA2120            |
| Eosinophil Count                          | #EOS         | 10 <sup>3</sup> /μL | $\#EOS=(\%EOS \times WBC) \div 100$          | ADVIA2120            |
| Eosinophil Percentage                     | %EOS         | %                   | Peroxidase Staining                          | ADVIA2120            |
| Basophil Count                            | #BASO        | 10 <sup>3</sup> /μL | $\#BASO=(\%BASO \times WBC) \div 100$        | ADVIA2120            |
| Basophil Percentage                       | %BASO        | %                   | Peroxidase Staining                          | ADVIA2120            |
| Large Unstained Cell Count                | #LUC         | 10 <sup>3</sup> /μL | $\#LUC=(\%LUC \times WBC) \div 100$          | ADVIA2120            |
| Large Unstained Cell Percentage           | %LUC         | %                   | Peroxidase Staining                          | ADVIA2120            |
| Reticulocyte Count                        | #RETIC       | 10 <sup>9</sup> /L  | Erythrocyte Spheroidization and RNA Staining | ADVIA2120            |
| Reticulocyte Percentage                   | %RETIC       | %                   | $\%RETIC=(\#RETIC \div RBC) \div 10$         | ADVIA2120            |
| Prothrombin Time                          | PT           | s                   | Agglutination Method                         | CA-1500              |
| Activated Partial Thromboplastin Time     | APTT         | s                   | Agglutination Method                         | CA-1500              |
| Fibrinogen                                | Fbg          | g/L                 | Agglutination Method                         | CA-1500              |

**Supplementary table 8. Serum biochemical test items**

| Indicator Name             | Abbreviation    | Unit   | Detection Method                  | Detection Instrument |
|----------------------------|-----------------|--------|-----------------------------------|----------------------|
| Aspartate Aminotransferase | AST             | IU/L   | UV Continuous Monitoring Method   | Hitachi 7180         |
| Alanine Aminotransferase   | ALT             | IU/L   | UV Continuous Monitoring Method   | Hitachi 7180         |
| Alkaline Phosphatase       | ALP             | IU/L   | Rate Method                       | Hitachi 7180         |
| Creatine Phosphokinase     | CK              | IU/L   | IFCC Continuous Monitoring Method | Hitachi 7180         |
| Blood Urea Nitrogen        | BUN             | mmol/L | Glutamate Dehydrogenase Method    | Hitachi 7180         |
| Creatinine                 | Crea            | μmol/L | Picric Acid Method                | Hitachi 7180         |
| Total Protein              | T.P             | g/L    | Biuret Method                     | Hitachi 7180         |
| Albumin                    | ALB             | g/L    | Bromocresol Green Method          | Hitachi 7180         |
| Globulin                   | GLO             | g/L    | GLO=T.P-ALB                       | Hitachi 7180         |
| Albumin/Globulin Ratio     | A/G             | /      | A/G=ALB÷(T.P-ALB)                 | Hitachi 7180         |
| Blood Glucose              | GLU             | mmol/L | Hexokinase Method                 | Hitachi 7180         |
| Total Bilirubin            | T.BIL           | μmol/L | Vanadate Oxidation Method         | Hitachi 7180         |
| Total Cholesterol          | T.CHO           | mmol/L | Enzyme Reagent Method             | Hitachi 7180         |
| Triglyceride               | TG              | mmol/L | Enzyme Reagent Method             | Hitachi 7180         |
| Calcium                    | Ca              | mmol/L | Arsenazo III Method               | Hitachi 7180         |
| Potassium Ion              | K <sup>+</sup>  | mmol/L | Electrode Method                  | Hitachi 7180         |
| Sodium Ion                 | Na <sup>+</sup> | mmol/L | Electrode Method                  | Hitachi 7180         |
| Chloride Ion               | Cl <sup>-</sup> | mmol/L | Electrode Method                  | Hitachi 7180         |