

## **Supplementary information**

### **Genome-wide association studies for 30 haematological and blood clinical-biochemical traits in Large White pigs reveal genomic regions affecting intermediate phenotypes**

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**Supplementary Table S1.** Descriptive statistics of the 30 blood traits analyzed in the Italian Large White pig population.

| Parameters (units)                               | Abbreviation | Formula  | Mean      | Standard deviation | Genomic heritability (Standard Error) |
|--|--------------|--|-----------|--------------------|---------------------------------------|
| <b>Haematological parameters</b>                 |              |  |           |                    |                                       |
| <i>Erythrocyte traits</i>                        |              |  |           |                    |                                       |
| Red blood cell count (cells/ $\mu$ L)            | RBC          | -  | 8,363,333 | 709,858            | 0.357 (0.066)                         |
| Hemoglobin (g/dL)                                | HGB          | -  | 14.3      | 1.4                | 0.361 (0.064)                         |
| Hematocrit (%)                                   | HCT          | -  | 49.0      | 4.3                | 0.274 (0.061)                         |
| Mean corpuscular volume (fL)                     | MCV          | $\frac{HCT(\%) \times 10}{RBC (\times 10^{12}/L)}$   | 58.7      | 4                  | 0.393 (0.066)                         |
| Mean corpuscular hemoglobin (pg)                 | MCH          | $\frac{HGB(g/dL) \times 10}{RBC (\times 10^{12}/L)}$ | 17.1      | 1.5                | 0.399 (0.064)                         |
| Mean corpuscular hemoglobin concentration (g/dL) | MCHC         | $\frac{HGB(g/dL) \times 100}{HCT (\%)}$              | 29.1      | 1.2                | 0.244 (0.056)                         |
| Red cell distribution width (%)                  | RDW          | -  | 16.9      | 2.1                | 0.387 (0.064)                         |
| <i>Leukocyte traits</i>                          |              |  |           |                    |                                       |
| White blood cell count (cells/ $\mu$ L)          | WBC          | -  | 23,299    | 5,728              | 0.311 (0.071)                         |
| Lymphocyte count (cells/ $\mu$ L)                | LYMPHO       | -  | 8,230     | 2,019              | 0.313 (0.061)                         |
| Neutrophil count (cells/ $\mu$ L)                | NEUTRO       | -  | 14,008    | 5,646              | 0.244 (0.071)                         |
| Eosinophil count (cells/ $\mu$ L)                | EOSINO       | -  | 149       | 97                 | 0.137 (0.059)                         |
| Basophil count (cells/ $\mu$ L)                  | BASO         | -  | 139       | 54                 | 0.193 (0.055)                         |
| Monocyte count (cells/ $\mu$ L)                  | MONO         | -  | 577       | 259                | 0.147 (0.044)                         |
| <i>Platelet traits</i>                           |              |  |           |                    |                                       |
| Platelet count (cells/ $\mu$ L)                  | PLT          | -  | 340,632   | 99,473             | 0.307 (0.059)                         |
| Mean platelet volume (fL)                        | MPV          | -  | 9.6       | 1.4                | 0.367 (0.063)                         |
| <b>Clinical-biochemical parameters</b>           |              |  |           |                    |                                       |
| <i>Lipid related traits</i>                      |              |  |           |                    |                                       |
| Total cholesterol (mg/dL)                        | T-Chol       | -  | 98        | 14                 | 0.380 (0.060)                         |
| High-density lipoprotein cholesterol             | HDL-Chol     | -  | 38.9      | 9.5                | 0.354 (0.061)                         |

|  |                |   |       |        |               |
|--|----------------|---|-------|--------|---------------|
| Low-density lipoprotein cholesterol          | LDL-Chol       | - | 55    | 10     | 0.381 (0.060) |
| Triglycerides (mg/dL)                        | TG             | - | 46    | 16     | 0.288 (0.067) |
| Non-esterified fatty acids (mmol/L)          | NEFA           | - | 0.18  | 0.11   | 0.128 (0.056) |
| <i>Metabolism and protein related traits</i> |                |   |       |        |               |
| Glucose (mg/dL)                              | Glu            | - | 121   | 31     | 0.087 (0.044) |
| Urea (mg/dL)                                 | UA             | - | 31.93 | 6.78   | 0.367 (0.060) |
| Total bilirubin (mg/dL)                      | T-Bil          | - | 0.14  | 0.04   | 0.004 (0.028) |
| Total proteins (g/dL)                        | T-Prot         | - | 7.73  | 0.53   | 0.303 (0.067) |
| Albumin (g/dL)                               | Alb            | - | 4.04  | 0.35   | 0.248 (0.056) |
| Albumin/Globulines ratio                     | Alb-Glob-ratio | - | 1.12  | 0.22   | 0.294 (0.068) |
| <i>Enzyme traits</i>                         |                |   |       |        |               |
| Alkaline phosphatase (u/L)                   | ALP            | - | 269   | 221    | 0.219 (0.062) |
| Creatine kinase (u/dL)                       | CK             | - | 8,149 | 10,699 | 0.338 (0.062) |
| Alanine aminotransferase (u/dL)              | ALT            | - | 51    | 11     | 0.433 (0.062) |
| Aspartate aminotransferase (u/dL)            | AST            | - | 90    | 71     | 0.441 (0.061) |

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**Supplementary Table S2.** Whole set of single nucleotide polymorphisms identified in the single marker genome wide association studies for the 30 blood parameters.

| Trait <sup>1</sup> | SSC <sup>2</sup> | Marker      | Position (bp) <sup>3</sup> | m/M alleles <sup>4</sup> | MAF <sup>5</sup> | p-value  | PVE(%) <sup>6</sup> |
|--------------------|------------------|-------------|----------------------------|--------------------------|------------------|----------|---------------------|
| Alb                | 6                | H3GA0052531 | 88193827                   | A/G                      | 0.4603           | 4.37E-05 | 3.85                |
| Alb-Glob-ratio     | 5                | H3GA0015245 | 5996798                    | A/G                      | 0.3875           | 1.59E-05 | 4.29                |
| ALT                | 4                | H3GA0053919 | 586320                     | G/A                      | 0.1376           | 4.59E-05 | 3.83                |
| ALT                | 4                | ASGA0023643 | 1007973                    | A/G                      | 0.1732           | 1.78E-05 | 4.23                |
| ALT                | 4                | M1GA0007042 | 1035397                    | A/G                      | 0.1631           | 2.67E-05 | 4.06                |
| ALT                | 4                | ALGA0029783 | 1175147                    | G/A                      | 0.1305           | 4.99E-06 | 4.77                |
| ALT                | 18               | ALGA0098672 | 48131574                   | A/G                      | 0.2307           | 1.11E-05 | 4.43                |
| ALT                | NW_018084979.1   | ASGA0037264 | 2390114                    | A/G                      | 0.4520           | 2.38E-05 | 4.11                |
| ALT                | NW_018084979.1   | ASGA0037274 | 2493881                    | A/G                      | 0.4609           | 4.70E-05 | 3.87                |
| ALT                | NW_018084979.1   | M1GA0026306 | 2683385                    | G/A                      | 0.3772           | 2.64E-05 | 4.07                |
| ALT                | NW_018084979.1   | ALGA0110485 | 2700480                    | A/G                      | 0.3515           | 2.06E-05 | 4.17                |
| ALT                | NW_018084979.1   | H3GA0055095 | 2704835                    | G/A                      | 0.3854           | 6.77E-06 | 4.65                |
| ALT                | NW_018084979.1   | ASGA0100304 | 2731684                    | G/A                      | 0.3582           | 1.97E-05 | 4.19                |
| ALT                | NW_018084979.1   | ASGA0096862 | 2817806                    | A/G                      | 0.3790           | 1.70E-05 | 4.25                |
| ALT                | NW_018084979.1   | H3GA0023887 | 3163232                    | G/A                      | 0.3725           | 3.88E-06 | 4.88                |
| ALT                | NW_018084979.1   | M1GA0011476 | 3221013                    | G/A                      | 0.3805           | 1.83E-05 | 4.25                |
| ALT                | NW_018084979.1   | ASGA0037291 | 3252230                    | G/A                      | 0.3511           | 4.21E-05 | 3.87                |
| ALT                | NW_018084979.1   | ASGA0037279 | 3287126                    | A/G                      | 0.3511           | 4.21E-05 | 3.87                |
| ALT                | NW_018084979.1   | ASGA0037286 | 3301399                    | A/C                      | 0.4790           | 7.93E-06 | 4.76                |
| AST                | 14               | ASGA0066070 | 1.1E+08                    | A/G                      | 0.3238           | 3.07E-05 | 4.00                |
| AST                | 14               | H3GA0042029 | 1.1E+08                    | A/G                      | 0.3238           | 3.07E-05 | 4.00                |
| AST                | 14               | ALGA0081018 | 1.1E+08                    | G/A                      | 0.3233           | 2.92E-05 | 4.02                |
| AST                | 14               | ALGA0081020 | 1.1E+08                    | G/A                      | 0.3238           | 3.07E-05 | 4.00                |
| AST                | 14               | INRA0046629 | 1.1E+08                    | A/G                      | 0.3203           | 1.15E-05 | 4.42                |
| AST                | 14               | ALGA0081025 | 1.11E+08                   | A/C                      | 0.3996           | 2.04E-05 | 4.23                |
| BASO               | 14               | ALGA0078342 | 63301421                   | A/C                      | 0.4247           | 2.57E-05 | 4.08                |
| BASO               | 14               | INRA0044634 | 66411511                   | A/G                      | 0.1299           | 4.72E-06 | 4.79                |
| BASO               | 14               | ALGA0078500 | 66463802                   | G/A                      | 0.1418           | 1.47E-06 | 5.29                |

|      |    |             |          |     |        |          |      |
|------|----|-------------|----------|-----|--------|----------|------|
| BASO | 14 | ASGA0064195 | 66511894 | C/A | 0.1295 | 4.14E-06 | 4.86 |
| BASO | 14 | ASGA0064196 | 66543901 | G/A | 0.1280 | 2.70E-06 | 5.07 |
| BASO | 14 | MARC0069902 | 66601592 | A/G | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | DIAS0002104 | 66650724 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | INRA0044651 | 66713900 | A/G | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | INRA0044654 | 66739480 | C/A | 0.1407 | 2.03E-06 | 5.15 |
| BASO | 14 | ASGA0064202 | 66774513 | A/G | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | ASGA0064204 | 66813618 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | ALGA0078520 | 66952063 | A/G | 0.1453 | 2.83E-06 | 5.01 |
| BASO | 14 | ALGA0078523 | 67039033 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | DRGA0014010 | 67093823 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | DRGA0014012 | 67147013 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | MARC0013889 | 67164506 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | ASGA0064211 | 67179643 | G/A | 0.3529 | 5.42E-07 | 5.71 |
| BASO | 14 | MARC0095482 | 67221608 | A/G | 0.1335 | 9.15E-06 | 4.51 |
| BASO | 14 | H3GA0040774 | 67243311 | G/A | 0.3571 | 9.16E-07 | 5.48 |
| BASO | 14 | ASGA0064218 | 67269867 | G/A | 0.3612 | 1.11E-06 | 5.40 |
| BASO | 14 | ALGA0078532 | 67334411 | G/A | 0.3612 | 1.11E-06 | 5.40 |
| BASO | 14 | ALGA0078534 | 67342053 | G/A | 0.3612 | 1.11E-06 | 5.40 |
| BASO | 14 | ALGA0078541 | 67409552 | G/A | 0.3499 | 2.75E-06 | 5.02 |
| BASO | 14 | DRGA0014018 | 67429030 | A/G | 0.1376 | 1.12E-05 | 4.43 |
| BASO | 14 | ALGA0078548 | 67443330 | G/A | 0.1453 | 2.83E-06 | 5.01 |
| BASO | 14 | H3GA0052373 | 67551686 | A/G | 0.3600 | 9.49E-07 | 5.47 |
| BASO | 14 | INRA0044677 | 67556019 | A/G | 0.3600 | 9.49E-07 | 5.47 |
| BASO | 14 | ASGA0064234 | 67864215 | G/A | 0.1453 | 2.83E-06 | 5.01 |
| BASO | 14 | ALGA0078557 | 67944945 | G/A | 0.1435 | 2.61E-06 | 5.04 |
| BASO | 14 | MARC0109364 | 67985525 | A/G | 0.1453 | 2.83E-06 | 5.01 |
| BASO | 14 | DRGA0014039 | 68444298 | C/A | 0.1443 | 4.12E-06 | 4.86 |
| BASO | 14 | DRGA0014049 | 68924011 | G/A | 0.1425 | 2.27E-06 | 5.15 |
| BASO | 14 | CASI0008086 | 68966102 | A/G | 0.1530 | 1.73E-06 | 5.22 |
| BASO | 14 | DRGA0014060 | 69076616 | A/G | 0.1554 | 2.24E-06 | 5.11 |
| BASO | 14 | DRGA0014062 | 69112868 | A/G | 0.1554 | 2.24E-06 | 5.11 |
| BASO | 14 | DRGA0014064 | 69217969 | A/G | 0.1483 | 9.62E-07 | 5.46 |
| BASO | 14 | ALGA0078618 | 69290179 | G/A | 0.1412 | 2.30E-06 | 5.10 |
| BASO | 14 | DRGA0014066 | 69323867 | A/G | 0.1483 | 9.62E-07 | 5.46 |

|      |    |             |          |     |        |          |      |
|------|----|-------------|----------|-----|--------|----------|------|
| BASO | 14 | ALGA0078633 | 69589926 | C/A | 0.1613 | 4.69E-05 | 3.82 |
| BASO | 14 | H3GA0040804 | 69721367 | G/A | 0.1717 | 4.76E-05 | 3.91 |
| BASO | 14 | ASGA0064288 | 69743473 | A/G | 0.1601 | 4.57E-05 | 3.83 |
| BASO | 14 | ALGA0078642 | 69814326 | A/C | 0.1489 | 7.87E-07 | 5.55 |
| BASO | 14 | MARC0092344 | 69865089 | A/G | 0.1489 | 7.87E-07 | 5.55 |
| BASO | 14 | ALGA0078645 | 69888948 | G/A | 0.1489 | 7.87E-07 | 5.55 |
| BASO | 14 | MARC0006045 | 69943312 | G/A | 0.1340 | 7.74E-06 | 4.59 |
| BASO | 14 | MARC0007983 | 69965414 | A/G | 0.1388 | 1.63E-05 | 4.27 |
| BASO | 14 | ASGA0064298 | 70036197 | A/G | 0.1536 | 1.68E-06 | 5.23 |
| BASO | 14 | ASGA0064299 | 70068946 | A/G | 0.1661 | 8.52E-06 | 4.54 |
| BASO | 14 | ALGA0078660 | 70099607 | G/A | 0.1661 | 8.52E-06 | 4.54 |
| BASO | 14 | ALGA0078667 | 70216594 | G/A | 0.1524 | 7.01E-07 | 5.60 |
| BASO | 14 | ASGA0064303 | 70250940 | G/A | 0.1524 | 7.01E-07 | 5.60 |
| BASO | 14 | CASI0008356 | 70268234 | A/G | 0.1607 | 3.81E-07 | 5.85 |
| BASO | 14 | DRGA0014086 | 70282756 | G/A | 0.1655 | 7.99E-07 | 5.54 |
| BASO | 14 | DRGA0014089 | 70316991 | G/A | 0.1655 | 7.99E-07 | 5.54 |
| BASO | 14 | MARC0003944 | 70334131 | A/G | 0.1530 | 1.40E-06 | 5.31 |
| BASO | 14 | ALGA0078676 | 70360906 | A/G | 0.1655 | 7.99E-07 | 5.54 |
| BASO | 14 | ASGA0099631 | 70394534 | C/A | 0.1453 | 1.76E-06 | 5.21 |
| BASO | 14 | ASGA0064307 | 70444514 | G/A | 0.1524 | 7.01E-07 | 5.60 |
| BASO | 14 | ALGA0078688 | 70502037 | G/A | 0.1524 | 7.01E-07 | 5.60 |
| BASO | 14 | ALGA0078691 | 70524003 | G/A | 0.1329 | 3.21E-06 | 4.96 |
| BASO | 14 | ALGA0078692 | 70535908 | A/G | 0.1329 | 3.21E-06 | 4.96 |
| BASO | 14 | DRGA0014093 | 70607575 | G/A | 0.1317 | 3.70E-06 | 4.90 |
| BASO | 14 | MARC0104070 | 70974541 | A/G | 0.1228 | 7.12E-08 | 6.55 |
| BASO | 14 | H3GA0040825 | 71051046 | G/A | 0.1851 | 2.22E-06 | 5.11 |
| BASO | 14 | MARC0019955 | 71087715 | A/C | 0.1228 | 7.12E-08 | 6.55 |
| BASO | 14 | INRA0044866 | 71116678 | A/G | 0.1358 | 2.31E-07 | 6.06 |
| BASO | 14 | CASI0009762 | 71171960 | G/A | 0.1358 | 2.31E-07 | 6.06 |
| BASO | 14 | ALGA0113073 | 71377302 | A/G | 0.1346 | 1.70E-07 | 6.19 |
| BASO | 14 | MARC0084716 | 71463045 | A/G | 0.1346 | 1.70E-07 | 6.19 |
| BASO | 14 | MARC0046932 | 71515970 | A/C | 0.1346 | 1.70E-07 | 6.19 |
| BASO | 14 | MARC0064193 | 71530810 | G/A | 0.1346 | 1.70E-07 | 6.19 |
| BASO | 14 | ALGA0079514 | 71575626 | G/A | 0.1318 | 1.25E-07 | 6.33 |
| BASO | 14 | MARC0065976 | 71578222 | G/A | 0.1323 | 1.45E-07 | 6.26 |

|        |    |             |          |     |        |          |      |
|--------|----|-------------|----------|-----|--------|----------|------|
| BASO   | 14 | ALGA0079525 | 71604272 | G/A | 0.1103 | 6.77E-08 | 6.57 |
| BASO   | 14 | ASGA0064974 | 71926501 | A/G | 0.1346 | 1.70E-07 | 6.19 |
| BASO   | 14 | ALGA0079529 | 71958965 | A/G | 0.1139 | 6.53E-09 | 7.54 |
| BASO   | 14 | ALGA0079530 | 71996220 | A/G | 0.1174 | 1.84E-07 | 6.16 |
| BASO   | 14 | DIAS0001667 | 72025065 | G/A | 0.1281 | 2.19E-08 | 7.04 |
| BASO   | 14 | ASGA0064979 | 72070115 | A/G | 0.1281 | 2.19E-08 | 7.04 |
| BASO   | 14 | ALGA0079538 | 72086976 | G/A | 0.1240 | 3.16E-08 | 6.89 |
| BASO   | 14 | MARC0030485 | 72230609 | G/A | 0.1002 | 7.10E-08 | 6.55 |
| BASO   | 14 | INRA0045518 | 72254375 | A/G | 0.1026 | 1.41E-07 | 6.27 |
| BASO   | 14 | H3GA0041322 | 72418293 | G/A | 0.1329 | 6.54E-08 | 6.59 |
| BASO   | 14 | ALGA0079580 | 72454977 | G/A | 0.1281 | 2.19E-08 | 7.04 |
| BASO   | 14 | ALGA0079583 | 72478930 | G/A | 0.1435 | 2.15E-06 | 5.13 |
| BASO   | 14 | DIAS0001570 | 72544071 | G/A | 0.1281 | 2.19E-08 | 7.04 |
| BASO   | 14 | ALGA0079602 | 72571424 | G/A | 0.1115 | 7.66E-07 | 5.62 |
| BASO   | 14 | MARC0057405 | 72691300 | A/G | 0.1269 | 1.86E-08 | 7.11 |
| BASO   | 14 | MARC0090899 | 72704456 | A/G | 0.1133 | 3.07E-09 | 7.85 |
| BASO   | 14 | ALGA0078726 | 72824472 | G/A | 0.1305 | 2.44E-08 | 7.00 |
| BASO   | 14 | H3GA0040831 | 72876839 | A/G | 0.1234 | 3.17E-07 | 5.93 |
| BASO   | 14 | M1GA0018799 | 72901799 | A/G | 0.1241 | 1.40E-07 | 6.28 |
| BASO   | 14 | ASGA0064326 | 72965155 | G/A | 0.1103 | 2.74E-08 | 6.95 |
| BASO   | 14 | ALGA0078729 | 73118420 | G/A | 0.1103 | 7.89E-07 | 5.55 |
| BASO   | 14 | ALGA0078757 | 73396066 | G/A | 0.1275 | 5.68E-06 | 4.72 |
| BASO   | 14 | ALGA0078765 | 73434714 | A/G | 0.1097 | 1.36E-05 | 4.35 |
| BASO   | 14 | ASGA0064370 | 73455311 | G/A | 0.1097 | 1.36E-05 | 4.35 |
| BASO   | 14 | ALGA0078783 | 73476027 | A/G | 0.1275 | 5.68E-06 | 4.72 |
| BASO   | 14 | MARC0033060 | 91341310 | G/A | 0.1406 | 1.97E-05 | 4.19 |
| BASO   | 14 | ALGA0079922 | 91363743 | A/C | 0.1477 | 5.49E-06 | 4.73 |
| BASO   | 14 | ALGA0079939 | 91504896 | G/A | 0.3599 | 3.75E-05 | 3.92 |
| EOSINO | 3  | H3GA0009277 | 35094559 | C/A | 0.2254 | 3.69E-05 | 3.92 |
| EOSINO | 3  | H3GA0010692 | 1.17E+08 | A/C | 0.2503 | 4.28E-05 | 3.86 |
| EOSINO | 7  | H3GA0021970 | 61362991 | C/A | 0.2805 | 2.60E-05 | 4.07 |
| EOSINO | 7  | INRA0028736 | 1.18E+08 | G/A | 0.0990 | 6.47E-06 | 4.66 |
| EOSINO | 10 | H3GA0030197 | 46331882 | G/A | 0.1940 | 2.42E-05 | 4.10 |
| Glu    | 7  | ALGA0110857 | 1.01E+08 | A/G | 0.4081 | 2.08E-05 | 4.16 |
| HCT    | 18 | MARC0020251 | 36745365 | G/A | 0.3897 | 3.11E-05 | 3.99 |

|          |    |             |          |     |        |          |      |
|----------|----|-------------|----------|-----|--------|----------|------|
| HCT      | 18 | DRGA0017710 | 36749906 | G/A | 0.4015 | 2.37E-05 | 4.11 |
| HGB      | 13 | CASI0007727 | 1.77E+08 | G/A | 0.0706 | 2.16E-06 | 5.12 |
| HGB      | 18 | MARC0020251 | 36745365 | G/A | 0.3897 | 2.65E-05 | 4.06 |
| HGB      | 18 | DRGA0017710 | 36749906 | G/A | 0.4015 | 2.12E-05 | 4.16 |
| LDL-Chol | 1  | ALGA0004272 | 72306533 | G/A | 0.1100 | 5.14E-06 | 4.80 |
| LDL-Chol | 1  | ALGA0004279 | 72428453 | A/G | 0.1305 | 4.22E-05 | 3.87 |
| LDL-Chol | 1  | ALGA0008284 | 2.29E+08 | A/G | 0.4727 | 6.05E-06 | 4.69 |
| LDL-Chol | 1  | MARC0052175 | 2.34E+08 | G/A | 0.3665 | 1.31E-05 | 4.56 |
| LDL-Chol | 3  | ASGA0013487 | 12471350 | A/G | 0.4649 | 2.24E-05 | 4.14 |
| LDL-Chol | 3  | ASGA0016309 | 1.17E+08 | A/G | 0.3090 | 6.12E-06 | 4.68 |
| LDL-Chol | 3  | ASGA0016313 | 1.17E+08 | G/A | 0.1449 | 1.18E-07 | 6.35 |
| LDL-Chol | 3  | DIAS0000055 | 1.17E+08 | A/G | 0.4732 | 1.71E-10 | 9.05 |
| LDL-Chol | 14 | ALGA0077250 | 43459397 | A/G | 0.4822 | 2.58E-05 | 4.08 |
| LIMPHO   | 2  | DIAS0001270 | 3257622  | A/G | 0.1702 | 4.10E-05 | 3.88 |
| MCH      | 5  | MARC0069472 | 14820993 | C/A | 0.0765 | 3.86E-06 | 4.88 |
| MCH      | 14 | H3GA0038580 | 6432121  | A/G | 0.0759 | 3.45E-06 | 4.93 |
| MCHC     | 5  | MARC0044114 | 85947536 | G/A | 0.2331 | 9.05E-06 | 4.52 |
| MCHC     | 14 | ALGA0074674 | 6409504  | G/A | 0.3416 | 4.45E-05 | 3.84 |
| MCHC     | 14 | H3GA0038597 | 6641352  | G/A | 0.3511 | 3.56E-05 | 3.94 |
| MCV      | 5  | MARC0069472 | 14820993 | C/A | 0.0765 | 1.63E-05 | 4.27 |
| MCV      | 8  | DRGA0008367 | 17423203 | G/A | 0.3286 | 2.97E-05 | 4.01 |
| MONO     | 15 | ALGA0084320 | 19853411 | A/G | 0.1453 | 6.58E-06 | 4.65 |
| MONO     | 15 | ALGA0084354 | 20487669 | A/C | 0.0605 | 3.20E-05 | 3.98 |
| MPV      | 12 | ASGA0053310 | 13483964 | A/G | 0.2817 | 3.54E-05 | 3.94 |
| NEFA     | 2  | ALGA0015164 | 1.15E+08 | G/A | 0.3381 | 2.25E-05 | 4.13 |
| NEFA     | 9  | ASGA0041146 | 5738251  | G/A | 0.1459 | 2.37E-05 | 4.11 |
| NEFA     | 14 | MARC0068396 | 63488234 | A/C | 0.1097 | 3.09E-05 | 4.00 |
| NEFA     | 14 | ALGA0078353 | 63515463 | C/A | 0.1097 | 3.09E-05 | 4.00 |
| NEFA     | 14 | MARC0033238 | 63574364 | A/G | 0.1103 | 4.23E-05 | 3.86 |
| NEFA     | 14 | ASGA0064107 | 63629712 | A/G | 0.1121 | 3.64E-05 | 3.93 |
| NEFA     | 14 | MARC0047133 | 63934099 | A/G | 0.0807 | 1.76E-05 | 4.24 |
| NEFA     | 14 | ASGA0064132 | 64162795 | A/G | 0.0848 | 1.97E-05 | 4.19 |
| NEFA     | 14 | DRGA0013970 | 64191357 | A/C | 0.0794 | 8.83E-06 | 4.56 |
| NEFA     | 14 | ALGA0078392 | 64221190 | A/G | 0.1070 | 4.76E-05 | 3.82 |
| NEFA     | 14 | ASGA0064154 | 64593845 | G/A | 0.0753 | 1.69E-05 | 4.25 |



|        |    |             |          |     |        |          |      |
|--------|----|-------------|----------|-----|--------|----------|------|
| NEFA   | 14 | ASGA0064161 | 64856186 | C/A | 0.1056 | 4.66E-05 | 3.82 |
| NEUTRO | 4  | MARC0052177 | 77597154 | G/A | 0.4152 | 4.27E-05 | 3.86 |
| PLT    | 1  | ALGA0001781 | 24412234 | A/G | 0.4032 | 1.73E-05 | 4.30 |
| PLT    | 1  | CASI0009793 | 24473717 | A/G | 0.3482 | 2.76E-05 | 4.05 |
| PLT    | 4  | MARC0047043 | 94795752 | G/A | 0.2550 | 1.77E-05 | 4.24 |
| RBC    | 5  | M1GA0007649 | 15060402 | G/A | 0.1222 | 3.33E-05 | 3.97 |
| RDW    | 12 | DIAS0000242 | 40010805 | A/G | 0.2838 | 3.65E-05 | 3.93 |
| RDW    | 16 | ASGA0072968 | 33184787 | A/C | 0.3108 | 4.79E-05 | 3.81 |
| RDW    | 16 | ALGA0090171 | 33206877 | G/A | 0.3671 | 3.69E-06 | 4.90 |
| RDW    | 16 | ALGA0091410 | 67367349 | A/G | 0.0866 | 1.51E-05 | 4.30 |
| T-Bil  | 14 | ASGA0067171 | 1.3E+08  | G/A | 0.4875 | 2.61E-05 | 4.07 |
| T-Bil  | 17 | ALGA0094849 | 37006714 | A/G | 0.1996 | 2.09E-05 | 4.21 |
| T-Chol | 3  | DIAS0000055 | 1.17E+08 | A/G | 0.4732 | 8.03E-09 | 7.48 |
| T-Chol | 4  | ALGA0022970 | 9713080  | C/A | 0.4899 | 2.11E-05 | 4.16 |
| T-Chol | 5  | ASGA0104003 | 80770124 | C/A | 0.2357 | 1.18E-05 | 4.41 |
| T-Chol | 7  | MARC0003814 | 17166311 | A/C | 0.2023 | 3.94E-05 | 3.89 |
| TG     | 16 | ASGA0073326 | 47077521 | A/G | 0.4680 | 3.53E-05 | 3.94 |
| T-Prot | 17 | M1GA0022271 | 52958671 | A/G | 0.2633 | 2.62E-05 | 4.07 |
| UA     | 5  | ALGA0031618 | 31257070 | A/G | 0.3037 | 3.07E-05 | 4.00 |
| UA     | 5  | ALGA0031630 | 31476339 | C/A | 0.3037 | 3.07E-05 | 4.00 |
| UA     | 9  | ALGA0051311 | 10886506 | A/G | 0.3001 | 3.33E-05 | 3.97 |
| WBC    | 6  | DIAS0004496 | 97994715 | A/G | 0.0617 | 4.27E-05 | 3.86 |

<sup>1</sup>Full names are reported in Additional File 1: Table S1.

<sup>2</sup>SSC = *Sus scrofa* chromosome; NW\_018084979.1 is an unassembled scaffold.

<sup>3</sup>Position (bp): position based on the Sscrofa11.1 reference genome;

<sup>4</sup>m/M Allele = minor/major allele;

<sup>5</sup>MAF = Minor Allele Frequency;

<sup>6</sup>PVE(%): proportion of variance in phenotype explained by the SNP.

**Supplementary Table S3.** Whole set of single nucleotide polymorphisms identified in the multivariate genome wide association studies for the six medium/high ( $|r| > 0.6$ ) correlated sets of blood parameters.

| Groups of traits   | SSC <sup>1</sup> | Marker      | Position (bp) <sup>2</sup> | m/M allele <sup>3</sup> | MAF <sup>4</sup> | p-value <sup>5</sup> | Identified <sup>6</sup> |
|--------------------|------------------|-------------|----------------------------|-------------------------|------------------|----------------------|-------------------------|
| Alb–Alb-Glob-ratio | 7                | INRA0025193 | 38259165                   | A/G                     | 0.406            | 2.80E-05             | Alb-Glob-ratio          |
| CK–AST             | 2                | ALGA0112586 | 8371601                    | G/A                     | 0.483            | 4.21E-05             | **                      |
|                    | 2                | MARC0016794 | 8393235                    | C/A                     | 0.488            | 2.24E-05             | **                      |
|                    | 2                | MARC0056808 | 8401366                    | G/A                     | 0.469            | 4.55E-05             | **                      |
|                    | 14               | MARC0026910 | 107584405                  | G/A                     | 0.457            | 1.61E-05             | **                      |
|                    | 14               | ALGA0080896 | 108134979                  | G/A                     | 0.487            | 2.77E-05             | **                      |
|                    | 14               | ALGA0080935 | 108956441                  | A/G                     | 0.324            | 2.87E-06             | **                      |
|                    | 14               | ASGA0066004 | 109011557                  | A/G                     | 0.302            | 9.93E-07             | **                      |
|                    | 14               | ALGA0080940 | 109048435                  | A/G                     | 0.302            | 9.93E-07             | **                      |
|                    | 14               | ALGA0080944 | 109071267                  | A/G                     | 0.301            | 6.35E-07             | **                      |
|                    | 14               | ALGA0038327 | 109305728                  | A/C                     | 0.335            | 8.11E-10             | **                      |
|                    | 14               | ASGA0093112 | 109329518                  | A/G                     | 0.337            | 8.82E-10             | **                      |
|                    | 14               | ALGA0080958 | 109444557                  | G/A                     | 0.337            | 7.61E-10             | **                      |
|                    | 14               | ASGA0066039 | 109497913                  | G/A                     | 0.447            | 1.50E-10             | **                      |
|                    | 14               | ASGA0066041 | 109537669                  | A/G                     | 0.447            | 1.50E-10             | **                      |
|                    | 14               | H3GA0042007 | 109554549                  | A/G                     | 0.447            | 1.50E-10             | **                      |
|                    | 14               | ALGA0080984 | 109576733                  | A/G                     | 0.448            | 1.07E-10             | **                      |
|                    | 14               | ASGA0066048 | 109599604                  | A/G                     | 0.223            | 8.67E-06             | **                      |
|                    | 14               | ALGA0080999 | 109616495                  | A/G                     | 0.415            | 3.71E-07             | **                      |
|                    | 14               | CASI0009983 | 109688469                  | A/G                     | 0.339            | 2.08E-09             | **                      |
|                    | 14               | ASGA0066070 | 109742247                  | A/G                     | 0.324            | 1.28E-12             | AST                     |
|                    | 14               | H3GA0042029 | 109774665                  | A/G                     | 0.324            | 1.28E-12             | AST                     |
|                    | 14               | ALGA0081018 | 109823787                  | G/A                     | 0.323            | 4.55E-13             | AST                     |
|                    | 14               | ALGA0081020 | 109884548                  | G/A                     | 0.324            | 1.28E-12             | AST                     |
|                    | 14               | CASI0007888 | 110150467                  | A/G                     | 0.473            | 7.77E-06             | **                      |
|                    | 14               | INRA0046629 | 110424327                  | A/G                     | 0.320            | 1.39E-13             | AST                     |
|                    | 14               | INRA0046630 | 110536742                  | G/A                     | 0.082            | 3.20E-05             | **                      |
|                    | 14               | ALGA0081025 | 110570159                  | A/C                     | 0.400            | 2.54E-05             | AST                     |

|                          |    |             |           |     |       |          |                  |
|--------------------------|----|-------------|-----------|-----|-------|----------|------------------|
|                          | 14 | ASGA0066077 | 110656834 | A/G | 0.428 | 9.53E-11 | **               |
|                          | 14 | ALGA0081039 | 110742109 | G/A | 0.339 | 2.35E-08 | **               |
|                          | 14 | ASGA0066087 | 110784465 | C/A | 0.333 | 6.15E-09 | **               |
|                          | 14 | MARC0043866 | 110837017 | A/G | 0.340 | 1.46E-07 | **               |
|                          | 14 | H3GA0042042 | 110891845 | A/G | 0.332 | 2.63E-09 | **               |
|                          | 14 | MARC0015087 | 111922361 | G/A | 0.291 | 3.09E-07 | **               |
| MCH-MCHC-MCV-RDW         | 5  | MARC0069472 | 14820993  | C/A | 0.077 | 1.73E-06 | MCH, MCV         |
|                          | 7  | ASGA0036974 | 120968439 | G/A | 0.082 | 5.50E-07 | **               |
|                          | 7  | ASGA0037027 | 121152195 | A/G | 0.077 | 1.24E-06 | **               |
|                          | 14 | ASGA0060510 | 2891771   | A/C | 0.464 | 4.73E-05 | MCH              |
|                          | 14 | H3GA0038580 | 6432121   | A/G | 0.076 | 3.33E-05 | MCH              |
| RBC-HGB-HCT              | 5  | MARC0069472 | 14820993  | C/A | 0.077 | 1.68E-05 | **               |
|                          | 13 | CASI0007727 | 177262726 | G/A | 0.071 | 3.47E-05 | HGB              |
|                          | 14 | H3GA0038580 | 6432121   | A/G | 0.076 | 3.29E-05 | **               |
| T-Chol-LDL-Chol-HDL-Chol | 1  | ALGA0004272 | 72306533  | G/A | 0.110 | 3.75E-05 | LDL-Chol         |
|                          | 2  | ALGA0013564 | 43603656  | C/A | 0.406 | 5.00E-05 | **               |
|                          | 3  | ASGA0016309 | 116576491 | A/G | 0.309 | 3.65E-05 | LDL-Chol         |
|                          | 3  | ASGA0016313 | 116718459 | G/A | 0.145 | 5.24E-12 | LDL-Chol         |
|                          | 3  | DRGA0004246 | 117086029 | C/A | 0.098 | 1.74E-05 | **               |
|                          | 3  | DIAS0000055 | 117295071 | A/G | 0.473 | 8.55E-12 | LDL-Chol, T-Chol |
|                          | 4  | ALGA0022970 | 9713080   | C/A | 0.490 | 4.77E-05 | T-Chol, HDL-Chol |

<sup>1</sup>Full names are reported in Supplementary Table S1. No significant markers were reported for the [NEUTRO-WBC] cluster.

<sup>2</sup>SSC = *Sus scrofa* chromosome.

<sup>3</sup>Position (bp): position based on the Sscrofa11.1 reference genome.

<sup>4</sup>m/M Allele = minor/major allele.

<sup>5</sup>MAF = Minor Allele Frequency.

<sup>6</sup>The double star symbol (\*\*) indicates SNPs that were not reported to be associated in the single marker single trait approach and in the Bayesian method. Single nucleotide polymorphisms indicated in red were not located in any QTL regions identified with the other two approaches. Single nucleotide polymorphisms indicated in black were already reported to be in QTL regions identified with the other two approaches. When SNPs were already reported to be associated with investigated traits, this information is indicated (full names are reported in Supplementary Table S1). Detailed information of the QTL regions is reported in Additional File 4: Table S4.

**Table S4. Full list of QTLs regions (based on tag single nucleotide polymorphisms) associated to the 30 blood parameters.**

| Class                      | Trait(s) <sup>1</sup>                | SSC <sup>2</sup> | Marker(s)                   | Position(bp) <sup>3</sup> | QTL progressive number |
|----------------------------|--------------------------------------|------------------|-----------------------------|---------------------------|------------------------|
| Haematological trait       | PLT                                  | 1                | MARC0028659-<br>DRGA0000307 | 24020779-<br>24830003     | 1                      |
| Haematological trait       | PLT                                  | 1                | ALGA0001781                 | 24412234                  | 1                      |
| Clinical-biochemical trait | LDL-Chol<br>T-Chol–LDL-Chol–HDL-Chol | 1                | ALGA0004272                 | 72306533                  | 2                      |
| Clinical-biochemical trait | LDL-Chol                             | 1                | ALGA0008261-<br>ASGA0005957 | 228174388-<br>228987611   | 3                      |
| Clinical-biochemical trait | LDL-Chol                             | 1                | ALGA0008284                 | 228918979                 | 3                      |
| Clinical-biochemical trait | LDL-Chol                             | 1                | MARC0052175                 | 233651896                 | 3                      |
| Haematological trait       | LIMPHO                               | 2                | DIAS0001270                 | 3257622                   | 4                      |
| Clinical-biochemical trait | CK–AST                               | 2                | MARC0016794                 | 8393235                   | 5                      |
| Clinical-biochemical trait | T-Chol–LDL-Chol–HDL-Chol             | 2                | ALGA0013564                 | 43603656                  | 6                      |
| Clinical-biochemical trait | NEFA                                 | 2                | ALGA0015164                 | 115449913                 | 7                      |
| Clinical-biochemical trait | LDL-Chol                             | 3                | ALGA0017541-<br>ALGA0017674 | 12025480-<br>12941569     | 8                      |
| Clinical-biochemical trait | LDL-Chol                             | 3                | ASGA0013487                 | 12471350                  | 8                      |
| Haematological trait       | EOSINO                               | 3                | H3GA0009277                 | 35094559                  | 9                      |
| Clinical-biochemical trait | T-Chol–LDL-Chol–HDL-Chol             | 3                | ASGA0016313                 | 116718459                 | 10                     |
| Clinical-biochemical trait | LDL-Chol<br>T-Chol                   | 3                | ASGA0016334-<br>MARC0034240 | 117016694-<br>117989682   | 10                     |
| Haematological trait       | EOSINO                               | 3                | H3GA0010692                 | 117043080                 | 10                     |
| Clinical-biochemical trait | LDL-Chol<br>T-Chol                   | 3                | DIAS0000055                 | 117295071                 | 10                     |
| Clinical-biochemical trait | ALT                                  | 4                | ALGA0029783                 | 1175147                   | 11                     |
| Clinical-biochemical trait | HDL-Chol                             | 4                | ALGA0022933-<br>ALGA0023014 | 9035765-<br>9963475       | 12                     |
| Clinical-biochemical trait | T-Chol<br>T-Chol–LDL-Chol–HDL-Chol   | 4                | ALGA0022970                 | 9713080                   | 12                     |
| Haematological trait       | NEUTRO                               | 4                | MARC0052177                 | 77597154                  | 13                     |

|                            |   |   |                             |                         |    |
|----------------------------|---|---|-----------------------------|-------------------------|----|
| Haematological trait       | PLT   | 4 | MARC0047043                 | 94795752                | 14 |
| Clinical-biochemical trait | Alb-Glob-ratio                                | 5 | H3GA0015245                 | 5996798                 | 15 |
| Haematological trait       | MCH<br>MCV<br>MCH-MCHC-MCV-RDW<br>RBC-HGB-HCT | 5 | MARC0069472                 | 14820993                | 16 |
| Haematological trait       | RBC   | 5 | M1GA0007649                 | 15060402                | 16 |
| Clinical-biochemical trait | UA  | 5 | ALGA0031583-<br>MARC0036874 | 31022891-<br>31954627   | 17 |
| Clinical-biochemical trait | UA  | 5 | ALGA0031618                 | 31257070                | 17 |
| Clinical-biochemical trait | UA  | 5 | ALGA0031630                 | 31476339                | 17 |
| Clinical-biochemical trait | T-Chol  | 5 | ASGA0104003                 | 80770124                | 18 |
| Haematological trait       | MCHC  | 5 | MARC0044114                 | 85947536                | 19 |
| Haematological trait       | RBC   | 5 | ALGA0034012-<br>DIAS0000757 | 100071672-<br>100955310 | 20 |
| Clinical-biochemical trait | Alb   | 6 | MARC0028659-<br>DRGA0000307 | 88007685-<br>88895391   | 21 |
| Clinical-biochemical trait | Alb   | 6 | H3GA0052531                 | 88193827                | 21 |
| Haematological trait       | WBC   | 6 | DIAS0004496                 | 97994715                | 22 |
| Clinical-biochemical trait | T-Chol  | 7 | MARC0003814                 | 17166311                | 23 |
| Clinical-biochemical trait | Alb-Alb-Glob-ratio                            | 7 | INRA0025193                 | 38259165                | 24 |
| Haematological trait       | HGB<br>HCT                                    | 7 | MARC0028659-<br>DRGA0000307 | 50022514-<br>50996708   | 25 |
| Haematological trait       | HGB   | 7 | M1GA0010414-<br>ASGA0085536 | 52033314-<br>52890898   | 25 |
| Haematological trait       | EOSINO  | 7 | H3GA0021970                 | 61362991                | 26 |
| Clinical-biochemical trait | Glu   | 7 | ALGA0110857                 | 101154686               | 27 |
| Haematological trait       | EOSINO  | 7 | INRA0028736                 | 118053616               | 28 |
| Haematological trait       | MCH-MCHC-MCV-RDW                              | 7 | ASGA0036974                 | 120968439               | 29 |
| Haematological trait       | MCV   | 8 | DRGA0008367                 | 17423203                | 30 |
| Haematological trait       | MCV   | 8 | ALGA0046671-<br>MARC0000247 | 17019764-<br>17986937   | 30 |
| Clinical-biochemical trait | NEFA  | 9 | ASGA0041146                 | 5738251                 | 31 |
| Clinical-biochemical trait | UA  | 9 | ALGA0051311                 | 10886506                | 32 |

|                            |  |    |                             |                       |    |
|----------------------------|--|----|-----------------------------|-----------------------|----|
| Clinical-biochemical trait | HDL-Chol                               | 9  |                             | 42015102-42977109     | 33 |
| Haematological trait       | EOSINO                                 | 10 | H3GA0030197                 | 46331882              | 34 |
| Haematological trait       | MPV                                    | 12 | ASGA0053310                 | 13483964              | 35 |
| Haematological trait       | RDW                                    | 12 | DIAS0000242                 | 40010805              | 36 |
| Haematological trait       | HGB<br>RBC-HGB-HCT                     | 13 | CASI0007727                 | 177262726             | 37 |
| Haematological trait       | MCH-MCHC-MCV-RDW                       | 14 | ASGA0060510                 | 2891771               | 38 |
| Haematological trait       | MCH                                    | 14 | M1GA0018108-<br>ASGA0060872 | 6142147-<br>6991699   | 38 |
| Haematological trait       | MCH<br>MCH-MCHC-MCV-RDW<br>RBC-HGB-HCT | 14 | H3GA0038580                 | 6432121               | 38 |
| Haematological trait       | MCHC                                   | 14 | H3GA0038597                 | 6641352               | 38 |
| Haematological trait       | MCH                                    | 14 | DRGA0013486-<br>DIAS0002359 | 8004489-<br>8994023   | 38 |
| Clinical-biochemical trait | LDL-Chol                               | 14 | ALGA0077232-<br>ASGA0063118 | 43074710-<br>43957703 | 39 |
| Clinical-biochemical trait | LDL-Chol                               | 14 | ALGA0077250                 | 43459397              | 39 |
| Clinical-biochemical trait | NEFA                                   | 14 | DRGA0013970                 | 64191357              | 40 |
| Haematological trait       | BASO                                   | 14 | ALGA0078523-<br>MARC0109364 | 67039033-<br>67985525 | 41 |
| Haematological trait       | BASO                                   | 14 | INRA0044634                 | 66411511              | 41 |
| Haematological trait       | BASO                                   | 14 | DIAS0002104                 | 66650724              | 41 |
| Haematological trait       | BASO                                   | 14 | ASGA0064211                 | 67179643              | 41 |
| Haematological trait       | BASO                                   | 14 | MARC0095482                 | 67221608              | 41 |
| Haematological trait       | BASO                                   | 14 | DRGA0014018                 | 67429030              | 41 |
| Haematological trait       | BASO                                   | 14 | H3GA0052373                 | 67551686              | 41 |
| Haematological trait       | BASO                                   | 14 | CASI0008086                 | 68966102              | 41 |
| Haematological trait       | BASO                                   | 14 | DRGA0014066                 | 69323867              | 41 |
| Haematological trait       | BASO                                   | 14 | ALGA0078633                 | 69589926              | 41 |
| Haematological trait       | BASO                                   | 14 | MARC0092344                 | 69865089              | 41 |
| Haematological trait       | BASO                                   | 14 | MARC0006045                 | 69943312              | 41 |
| Haematological trait       | BASO                                   | 14 | CASI0008356                 | 70268234              | 41 |
| Haematological trait       | BASO                                   | 14 | MARC0019955                 | 71087715              | 41 |

|                            |               |                |                             |                       |    |
|----------------------------|---------------|----------------|-----------------------------|-----------------------|----|
| Haematological trait       | BASO          | 14             | INRA0044866                 | 71116678              | 41 |
| Haematological trait       | BASO          | 14             | ALGA0079529                 | 71958965              | 41 |
| Haematological trait       | BASO          | 14             | ALGA0079530                 | 71996220              | 41 |
| Haematological trait       | BASO          | 14             | ALGA0079583                 | 72478930              | 41 |
| Haematological trait       | BASO          | 14             | DIAS0001570                 | 72544071              | 41 |
| Haematological trait       | BASO          | 14             | MARC0090899                 | 72704456              | 41 |
| Haematological trait       | BASO          | 14             | ALGA0078729                 | 73118420              | 41 |
| Haematological trait       | BASO          | 14             | ALGA0078757                 | 73396066              | 41 |
| Clinical-biochemical trait | AST<br>CK-AST | 14             | INRA0046629                 | 110424327             | 42 |
| Clinical-biochemical trait | T-Bil         | 14             | ASGA0067171                 | 130438475             | 43 |
| Haematological trait       | MONO          | 15             | ALGA0084320                 | 19853411              | 44 |
| Haematological trait       | RDW           | 16             | ALGA0090171                 | 33206877              | 45 |
| Clinical-biochemical trait | TG            | 16             | ASGA0073326                 | 47077521              | 46 |
| Haematological trait       | RDW           | 16             | ALGA0091410                 | 67367349              | 47 |
| Clinical-biochemical trait | T-Bil         | 17             | ALGA0094849                 | 37006714              | 48 |
| Clinical-biochemical trait | T-Prot        | 17             | M1GA0022271                 | 52958671              | 49 |
| Haematological trait       | HGB           | 18             | MARC0005874-<br>MARC0014887 | 36020050-<br>36959194 | 50 |
| Haematological trait       | HCT<br>HGB    | 18             | DRGA0017710                 | 36749906              | 50 |
| Clinical-biochemical trait | ALT           | 18             | DRGA0017057-<br>MARC0055353 | 48008832-<br>48983680 | 51 |
| Clinical-biochemical trait | ALT           | 18             | ALGA0098672                 | 48131574              | 51 |
| Clinical-biochemical trait | ALT           | NW_018084979.1 | ASGA0101473-<br>ALGA0124558 | 2062221-<br>2846867   | 52 |
| Clinical-biochemical trait | ALT           | NW_018084979.1 | H3GA0055255-<br>ASGA0037286 | 3094869-<br>3301399   | 52 |
| Clinical-biochemical trait | ALT           | NW_018084979.1 | H3GA0023887                 | 3163232               | 52 |

<sup>1</sup>Full names are reported in Supplementary Table S1.

<sup>2</sup>SSC = *Sus scrofa* chromosome. NW\_018084979.1 is an unassembled scaffold.

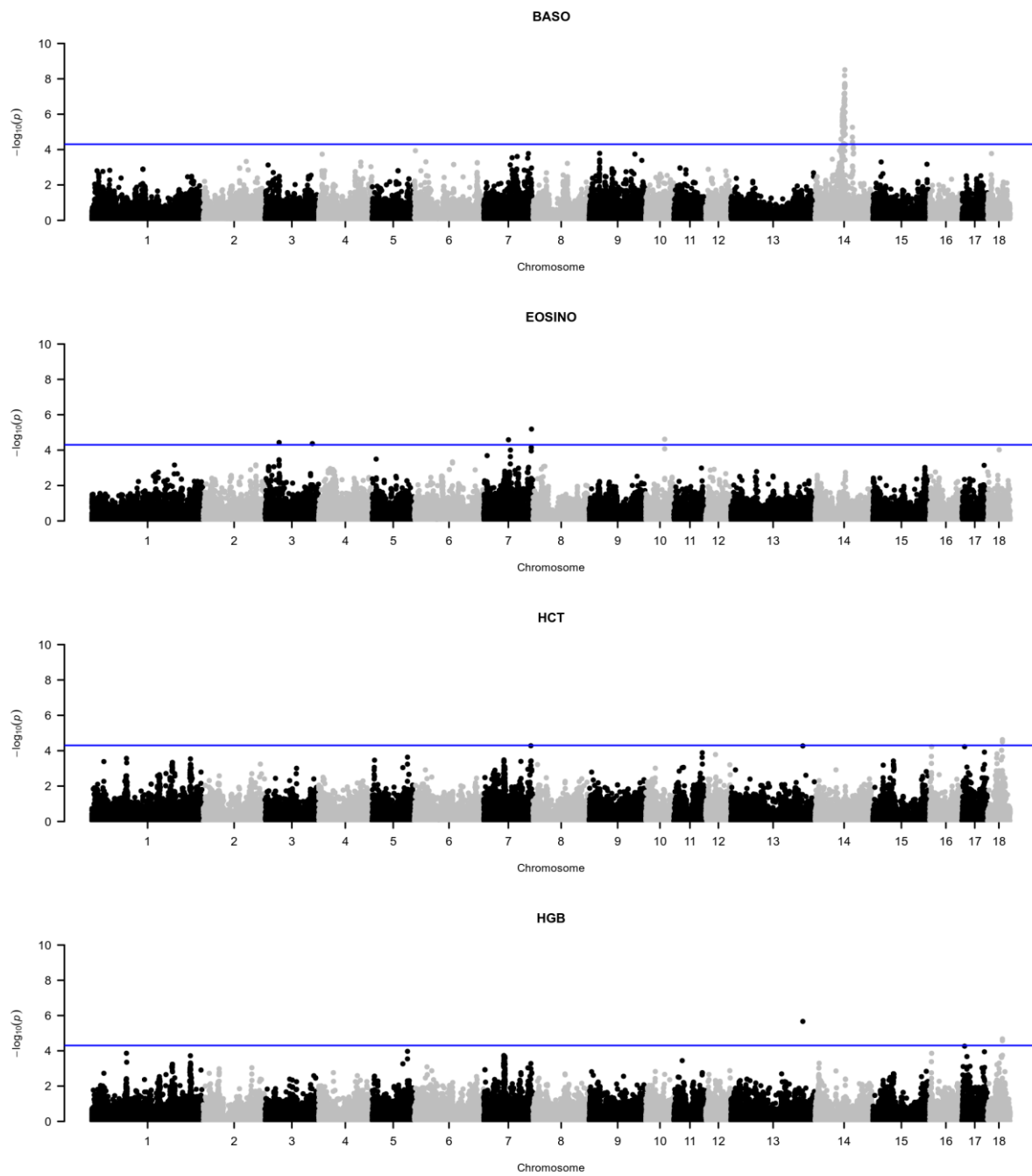
<sup>3</sup>Position (bp): position based on the Sscrofa11.1 reference genome.

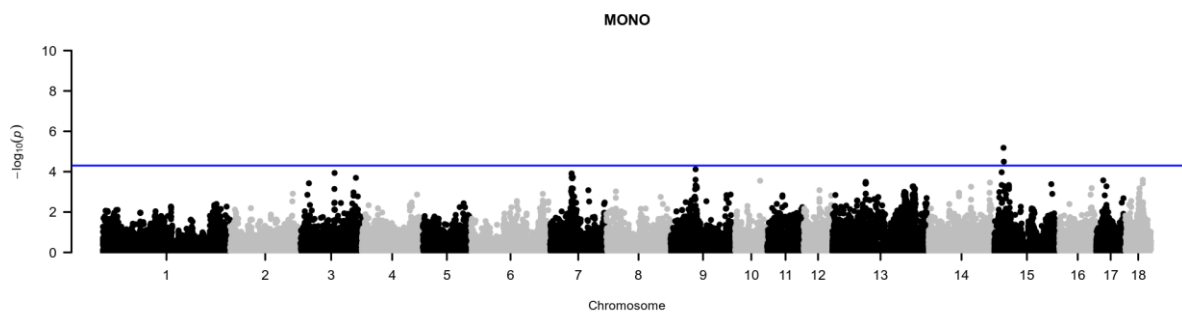
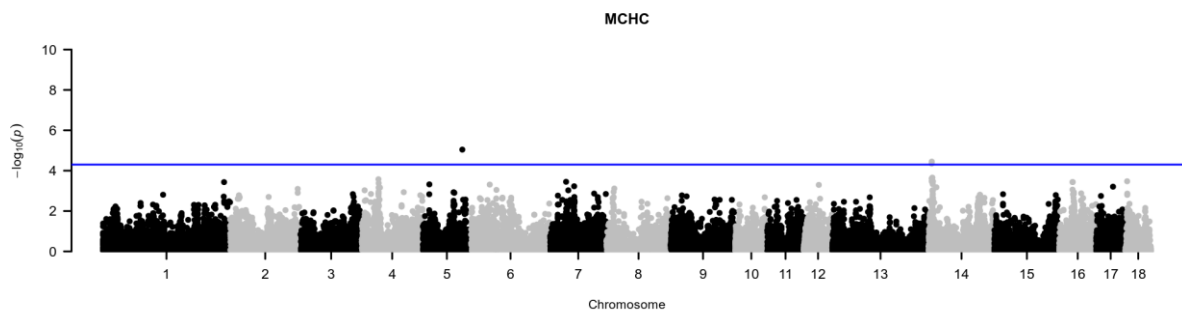
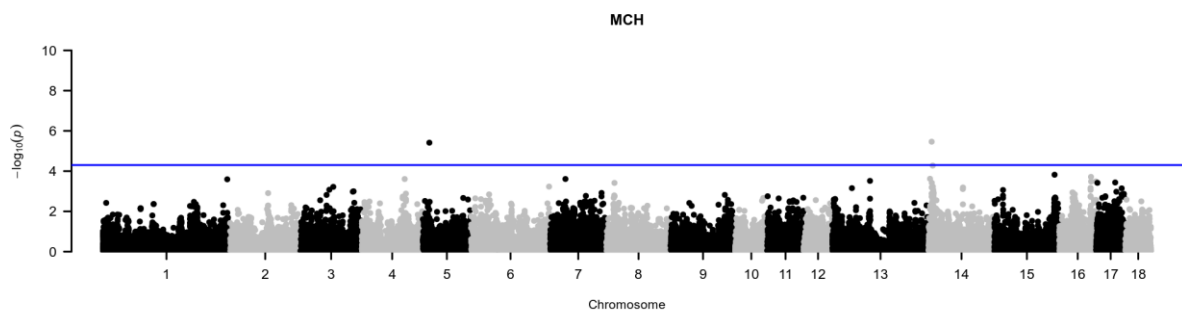
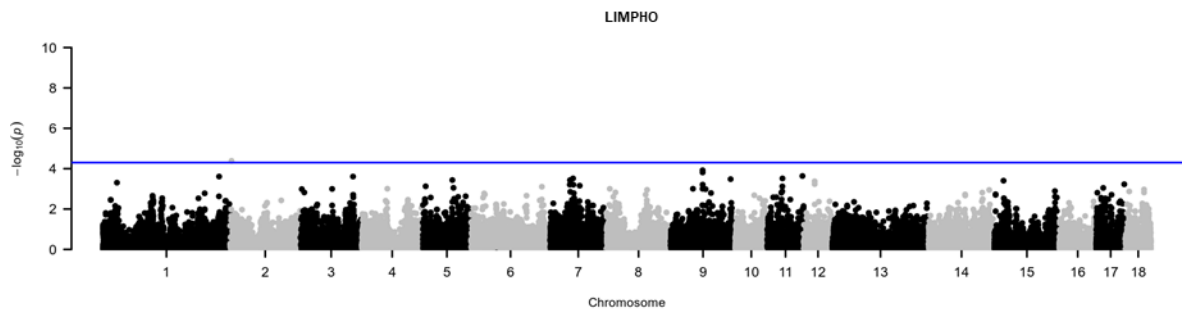
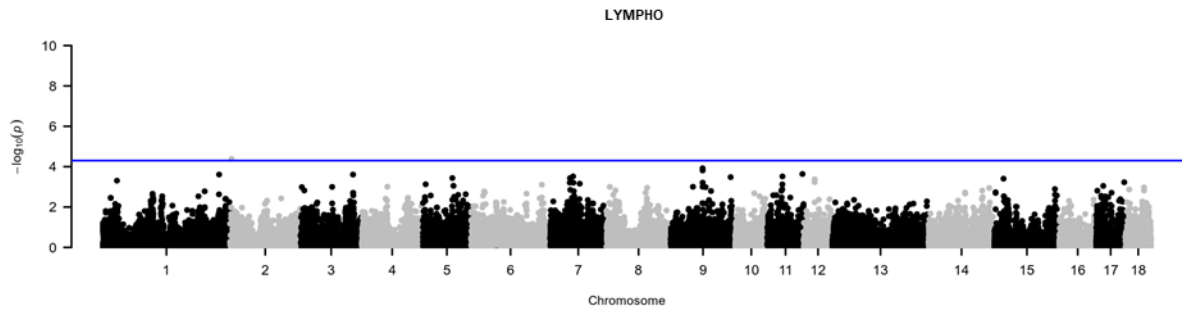
**Supplementary Table S5.** Genomic inflation factor ( $\lambda$ ) retrieved from the single marker single trait genome-wide association scans.

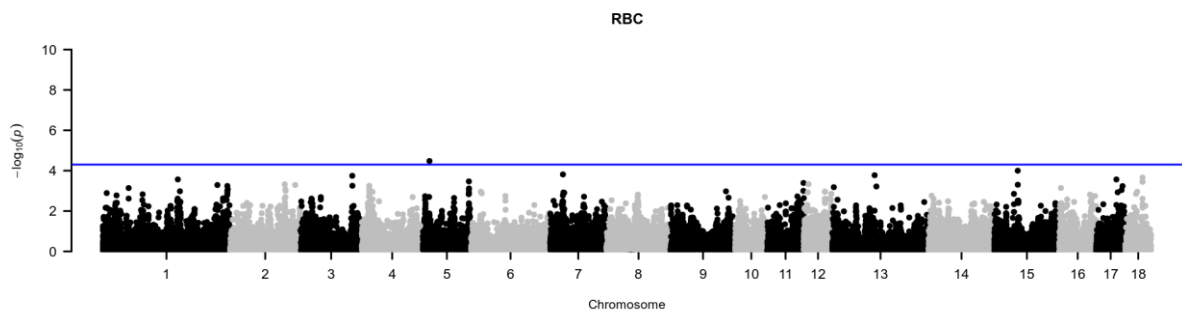
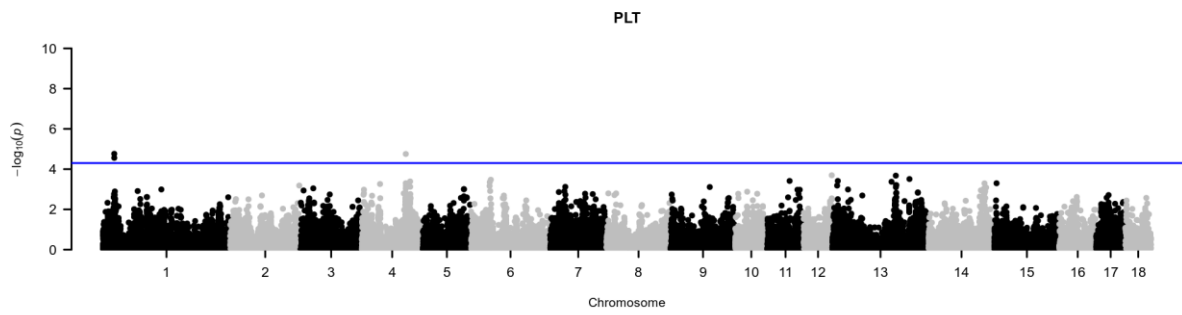
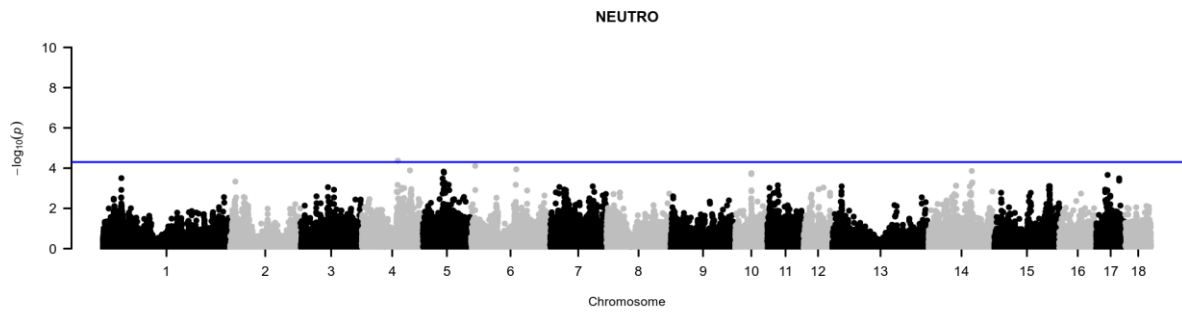
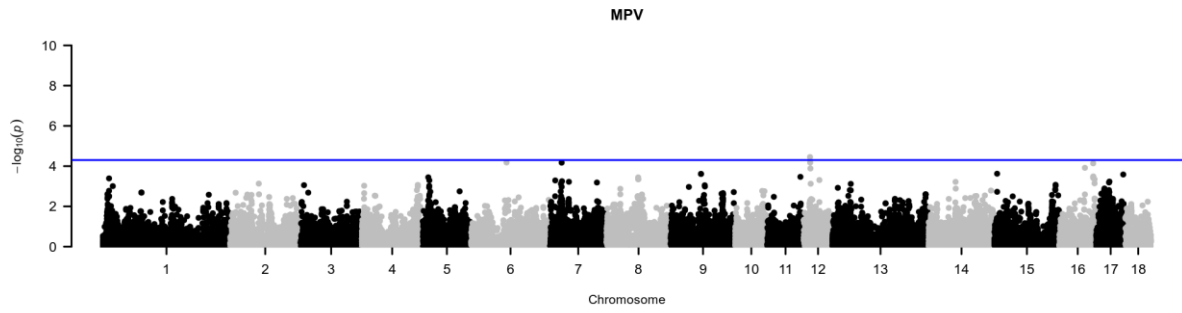
| Parameters (units)                           | Abbreviation   | Genomic inflation factor ( $\lambda$ ) |
|--|----------------|--|
| <b>Haematological parameters</b>             |                |  |
| <i>Erythrocyte traits</i>                    |                |  |
| Red blood cell count (cells/ $\mu$ L)        | RBC            | 1.00899                                |
| Hemoglobin (g/dL)                            | HGB            | 0.98373                                |
| Hematocrit (%)                               | HCT            | 0.97911                                |
| Mean corpuscular volume (fL)                 | MCV            | 1.00011                                |
| Mean corpuscular hemoglobin (pg)             | MCH            | 0.99392                                |
| Mean corpuscular hemoglobin                  | MCHC           | 0.99264                                |
| Red cell distribution width (%)              | RDW            | 1.04305                                |
| <i>Leukocyte traits</i>                      |                |  |
| White blood cell count (cells/ $\mu$ L)      | WBC            | 1.01203                                |
| Lymphocyte count (cells/ $\mu$ L)            | LYMPHO         | 1.00922                                |
| Neutrophil count (cells/ $\mu$ L)            | NEUTRO         | 0.99688                                |
| Eosinophil count (cells/ $\mu$ L)            | EOSINO         | 1.02923                                |
| Basophil count (cells/ $\mu$ L)              | BASO           | 0.99029                                |
| Monocyte count (cells/ $\mu$ L)              | MONO           | 0.99101                                |
| <i>Platelet traits</i>                       |                |  |
| Platelet count (cells/ $\mu$ L)              | PLT            | 0.99589                                |
| Mean platelet volume (fL)                    | MPV            | 0.99940                                |
| <b>Clinical-biochemical parameters</b>       |                |  |
| <i>Lipid related traits</i>                  |                |  |
| Total cholesterol (mg/dL)                    | T-Chol         | 1.01309                                |
| High-density lipoprotein cholesterol (mg/dL) | HDL-Chol       | 1.00721                                |
| Low-density lipoprotein cholesterol (mg/dL)  | LDL-Chol       | 1.00948                                |
| Triglycerides (mg/dL)                        | TG             | 0.98329                                |
| Non-esterified fatty acids (mmol/L)          | NEFA           | 1.00507                                |
| <i>Metabolism and protein related traits</i> |                |  |
| Glucose (mg/dL)                              | Glu            | 1.01359                                |
| Urea (mg/dL)                                 | UA             | 1.01742                                |
| Total bilirubin (mg/dL)                      | T-Bil          | 1.05034                                |
| Total proteins (g/dL)                        | T-Prot         | 1.00939                                |
| Albumin (g/dL)                               | Alb            | 0.99293                                |
| Albumin/Globulines ratio                     | Alb-Glob-ratio | 1.00591                                |
| <i>Enzyme traits</i>                         |                |  |
| Alkaline phosphatase (u/L)                   | ALP            | 1.00305                                |
| Creatine kinase (u/dL)                       | CK             | 1.00325                                |
| Alanine aminotransferase (u/dL)              | ALT            | 0.98242                                |
| Aspartate aminotransferase (u/dL)            | AST            | 0.99965                                |

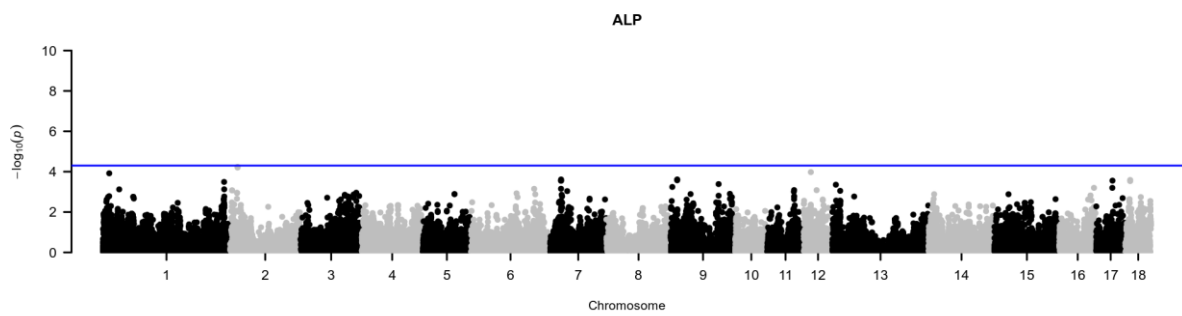
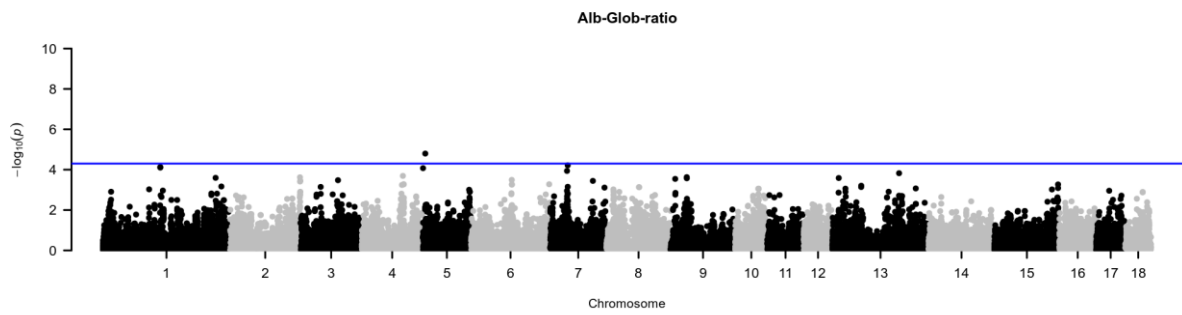
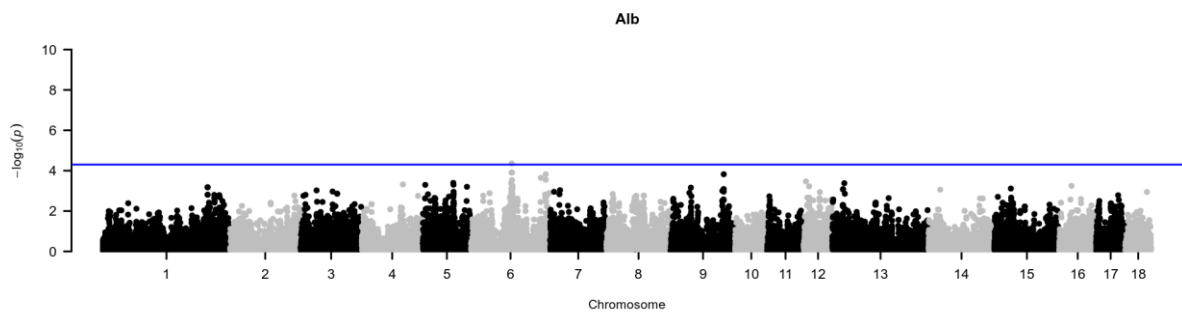
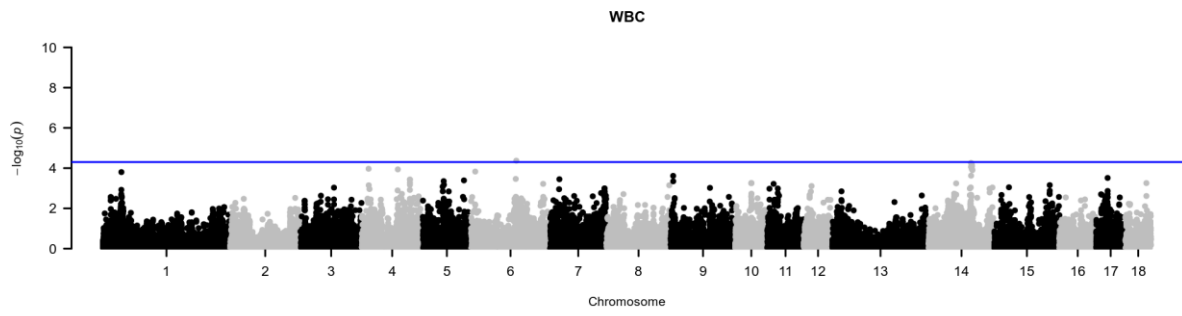
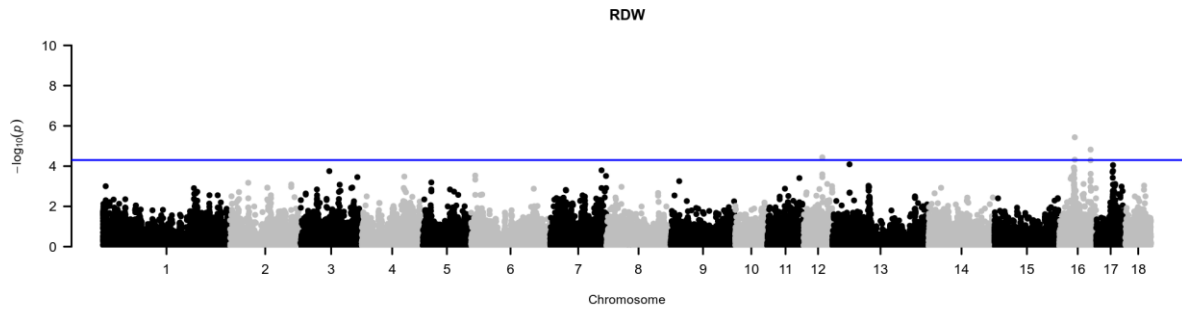


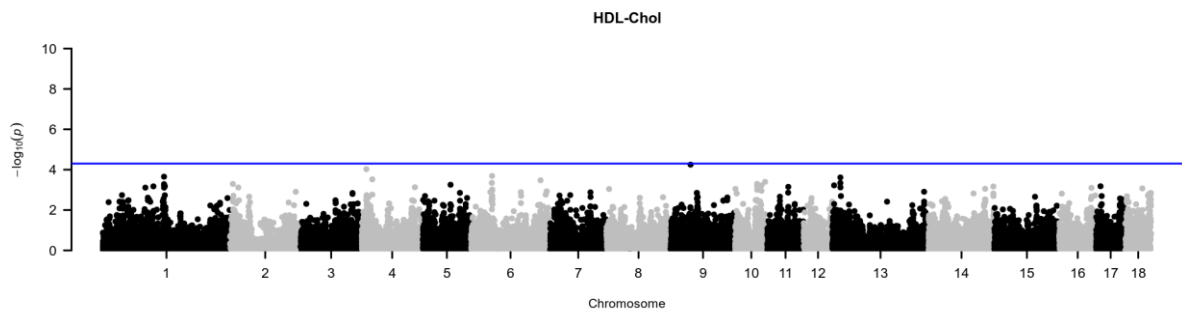
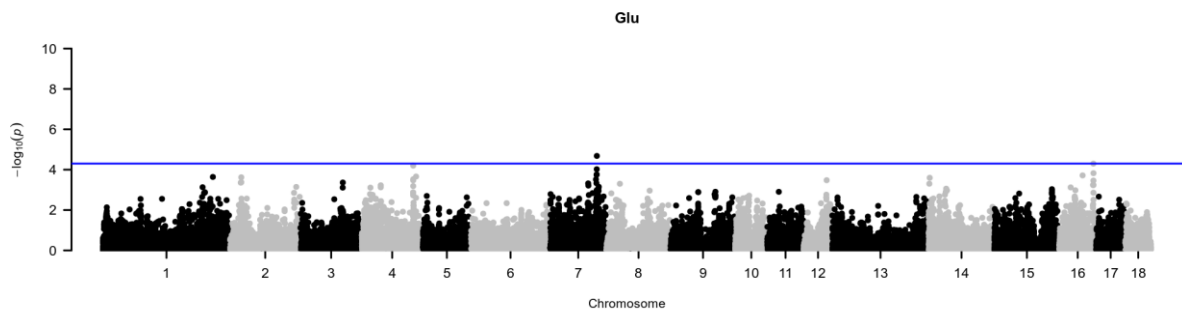
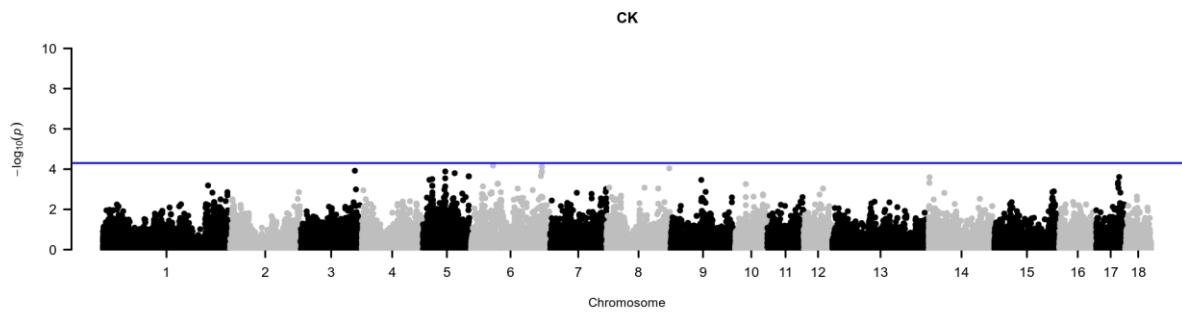
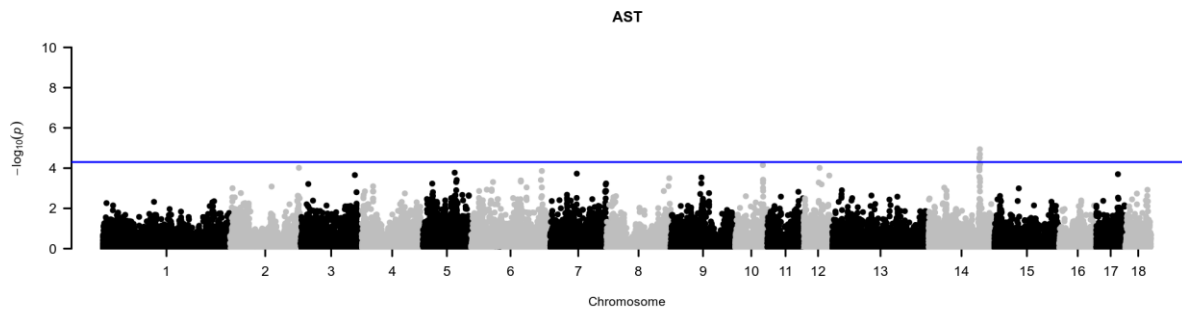
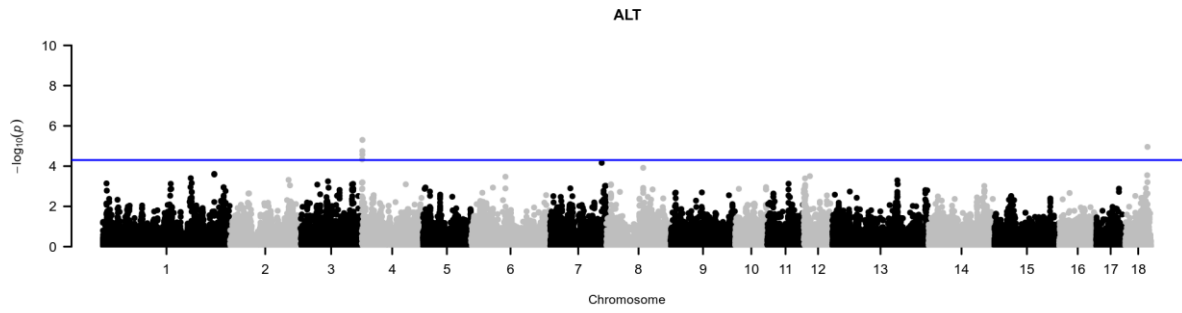
**Supplementary Figure S1.** Manhattan plots displaying the results of the single marker genome wide association studies for the 30 blood parameters. Trait abbreviations are defined in Supplementary Table S1.

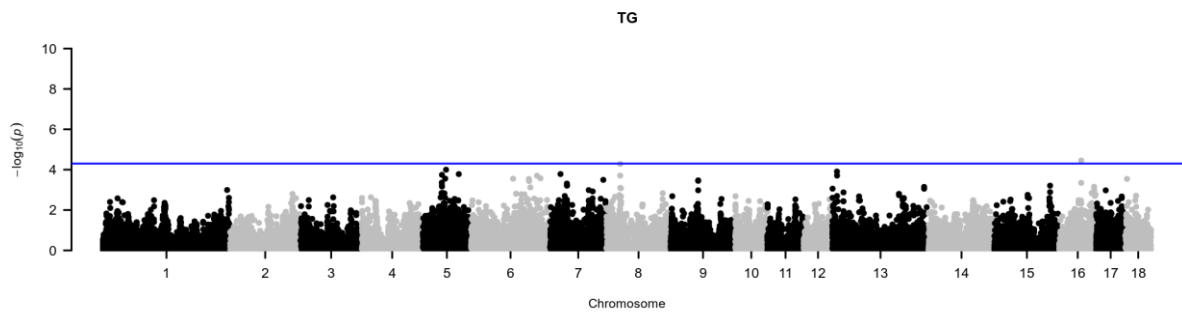
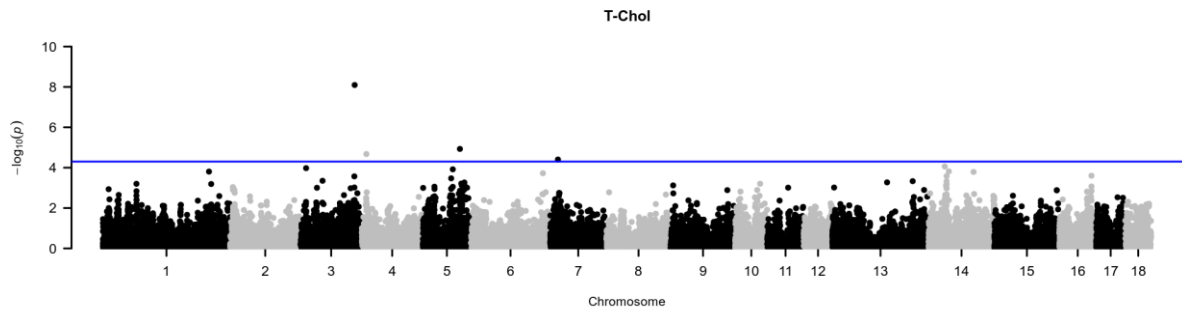
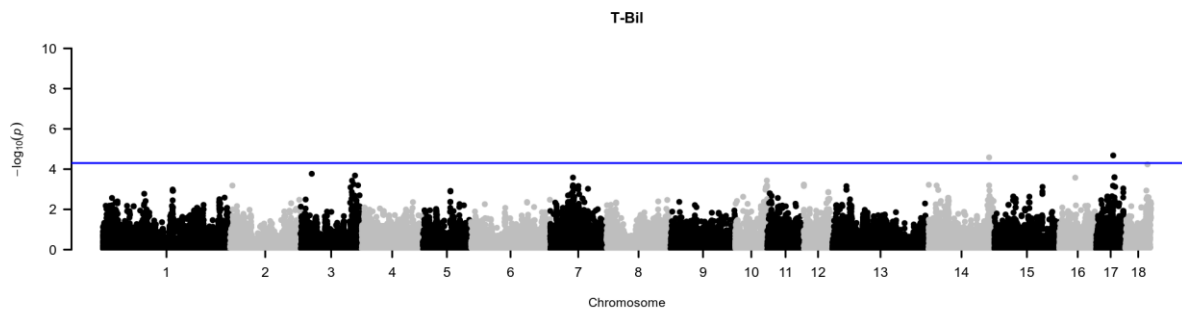
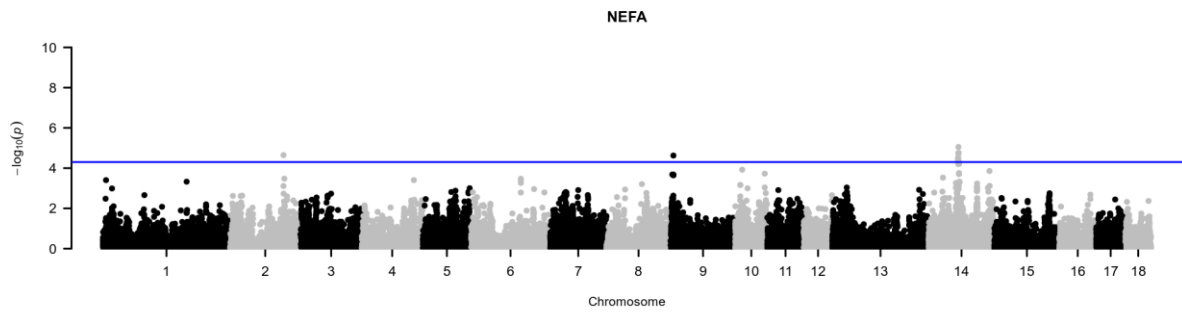
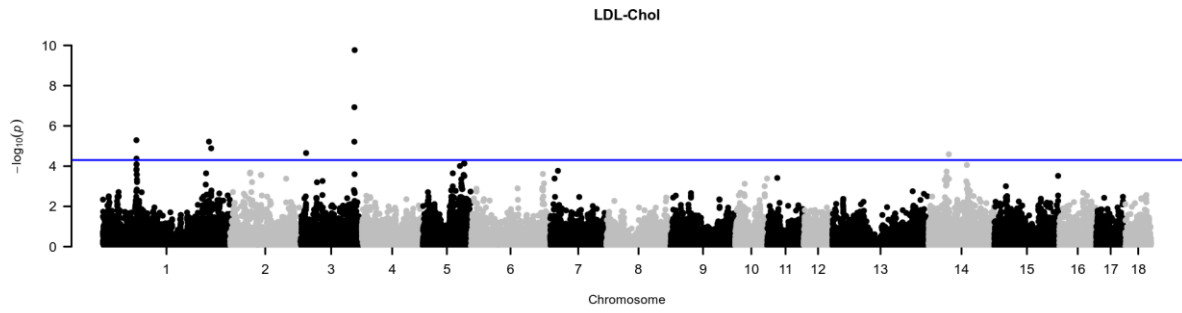


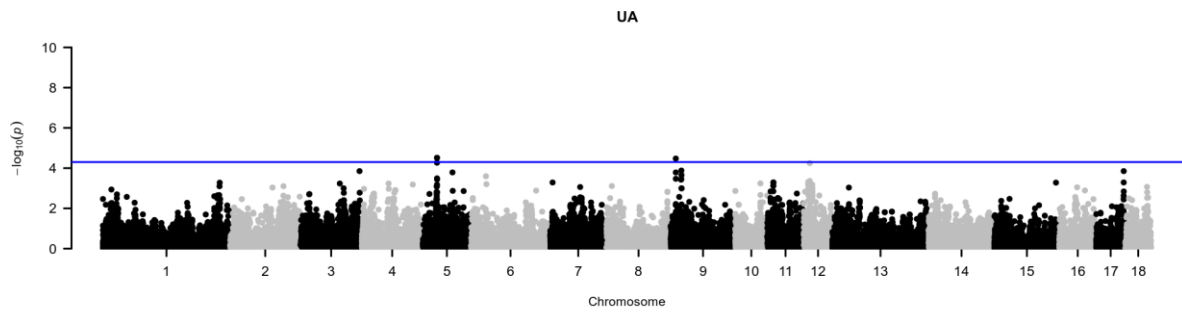
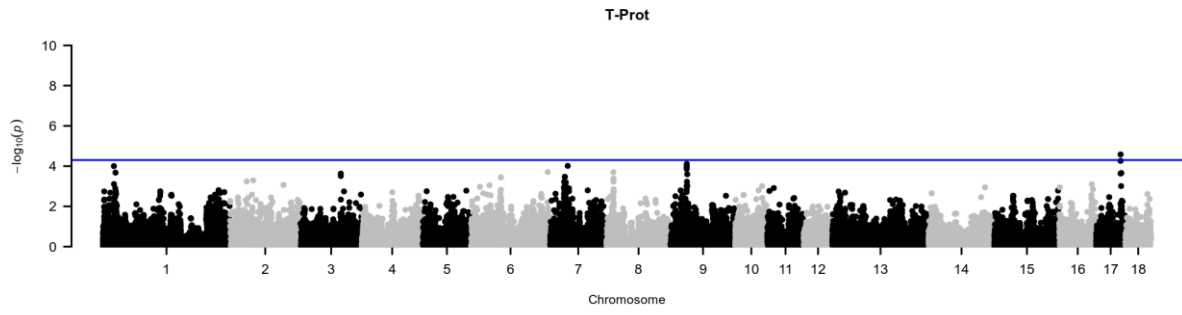




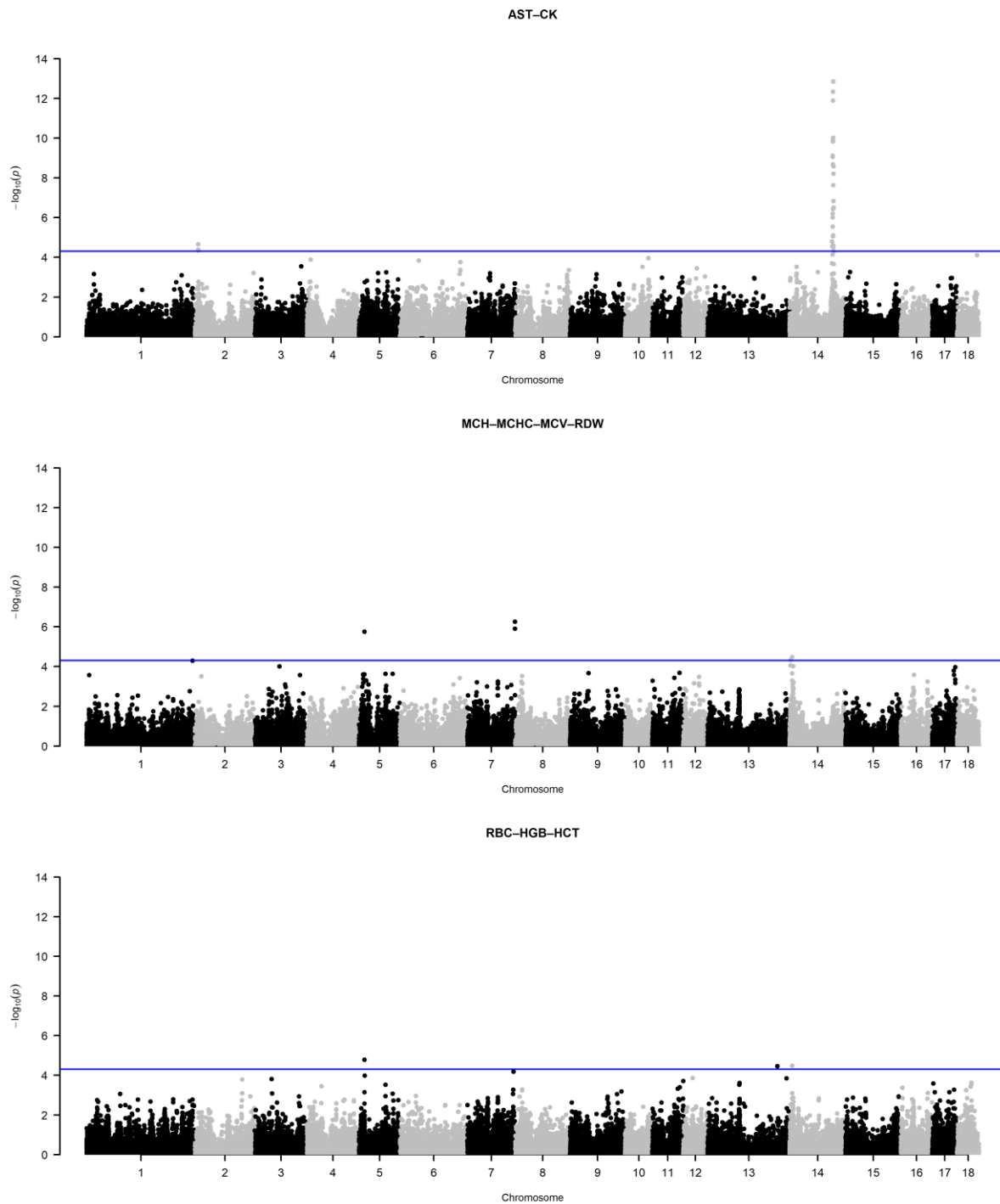






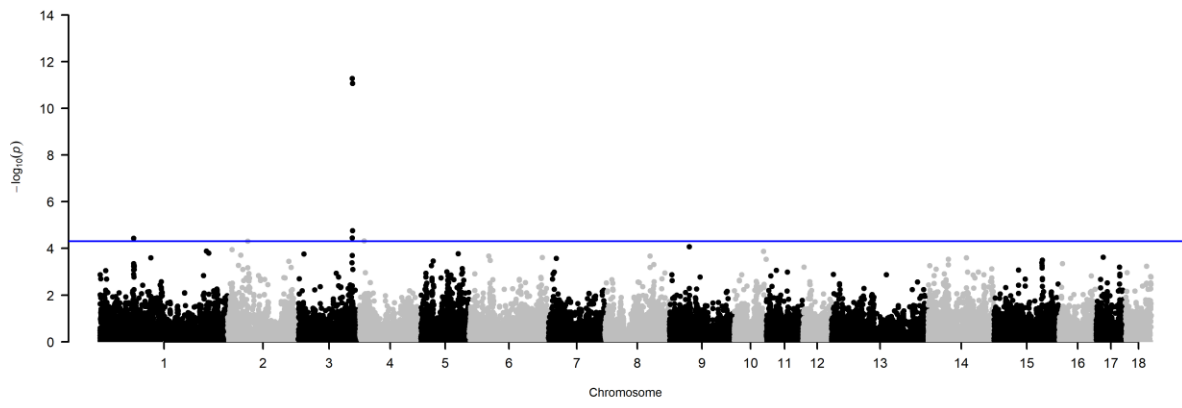


**Supplementary Figure S2.** Manhattan plots displaying the results of the multivariate genome wide association studies for the six sets of blood parameters. Trait abbreviations are defined in Supplementary Table S1.

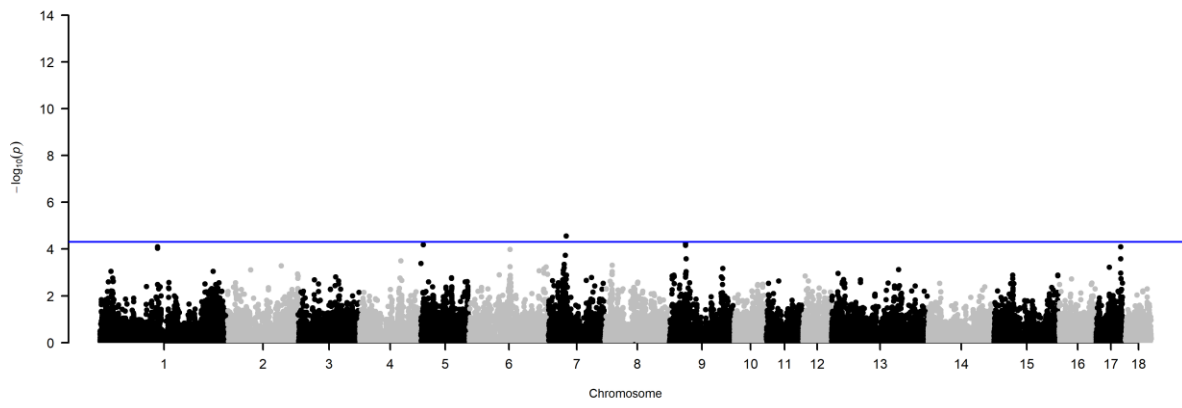




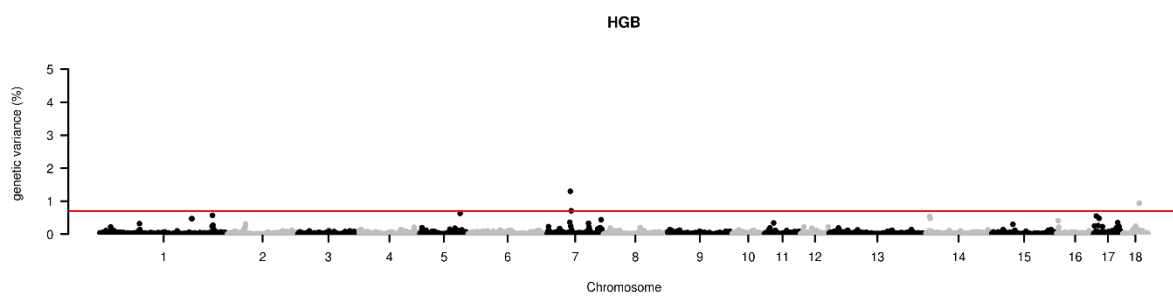
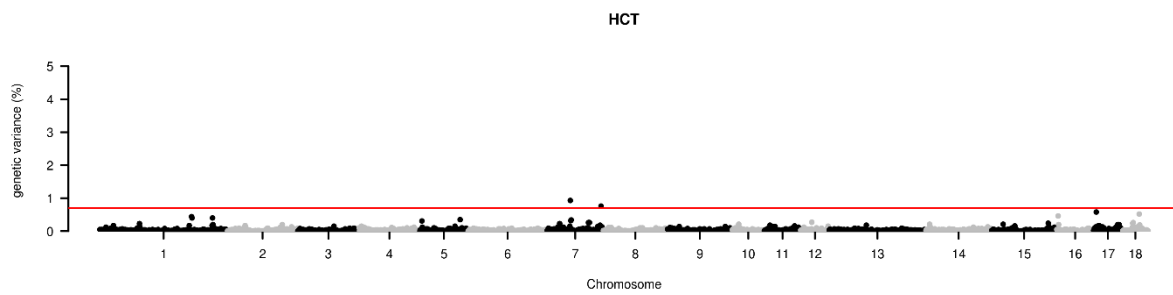
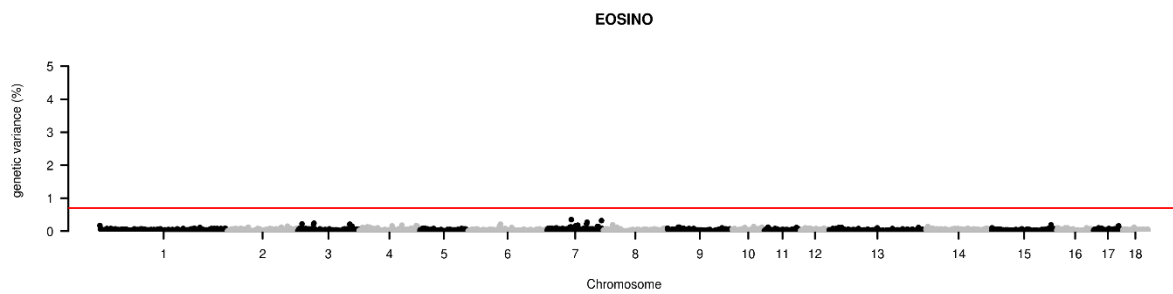
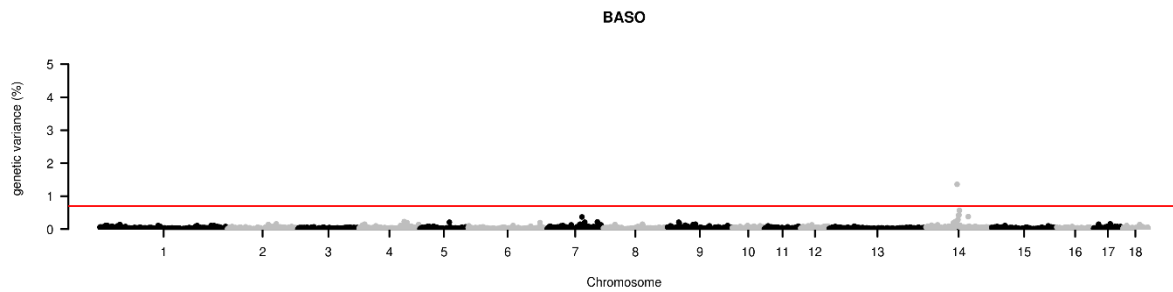
T-Chol-LDL-Chol-HDL-Chol

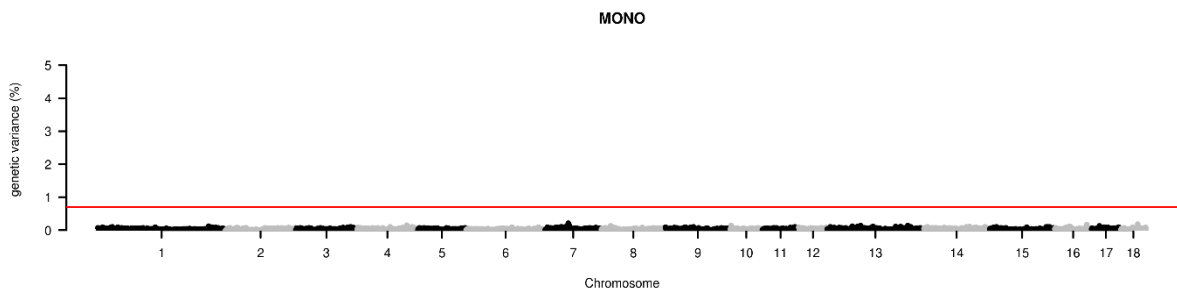
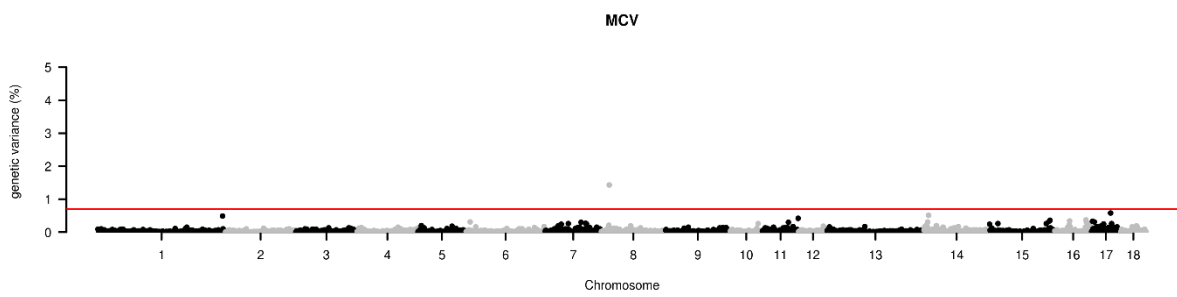
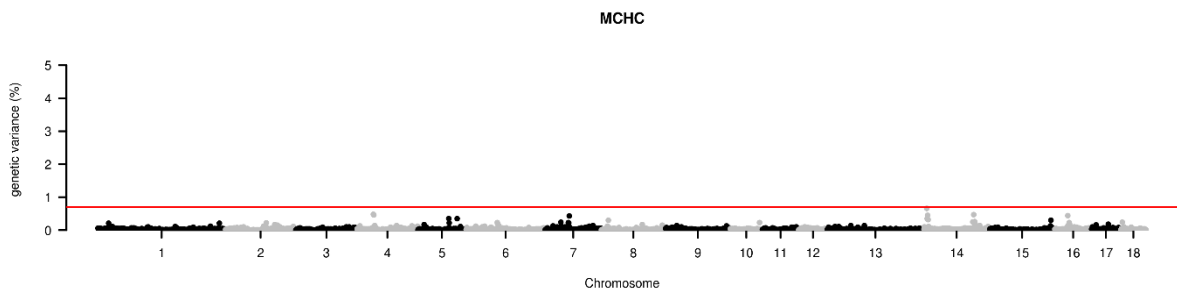
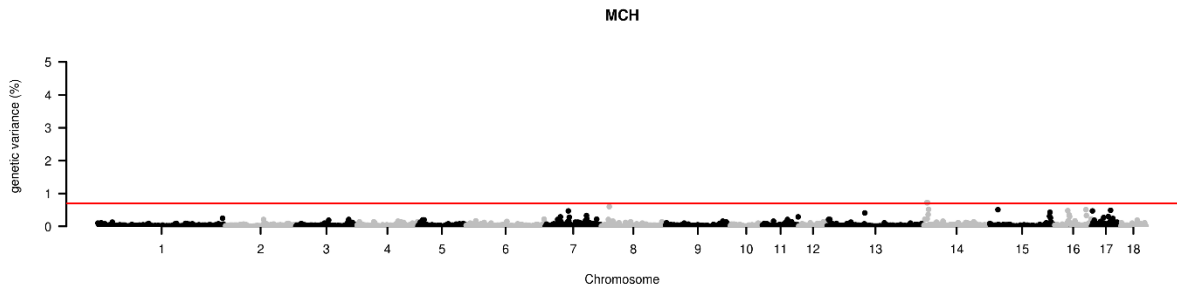
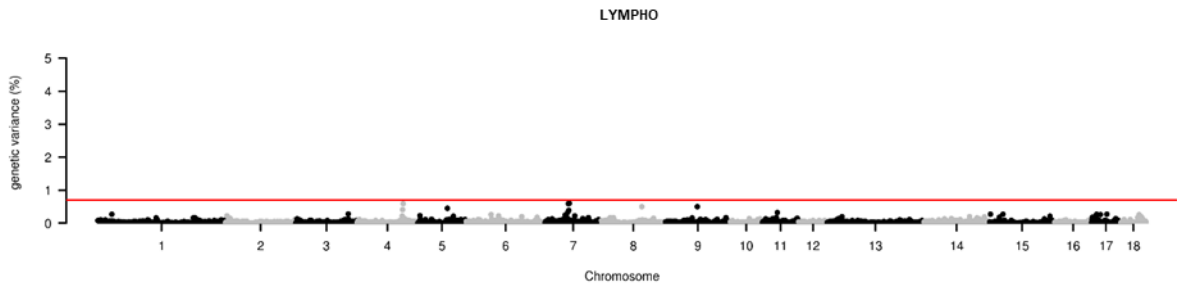


T-prot-Alb-Alb-Glob-ratio

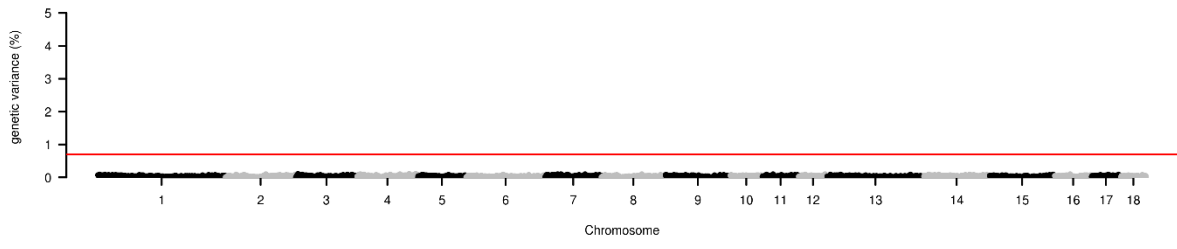


**Supplementary Figure S3.** Manhattan plots displaying the results of the Bayesian genome wide association studies for the 30 blood parameters. Trait abbreviations are defined in Supplementary Table S1.

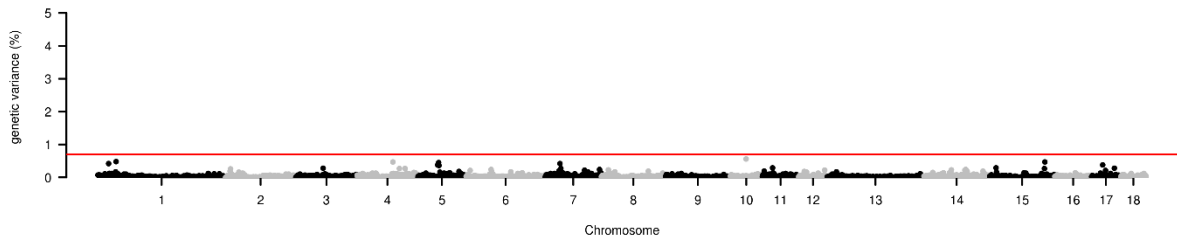




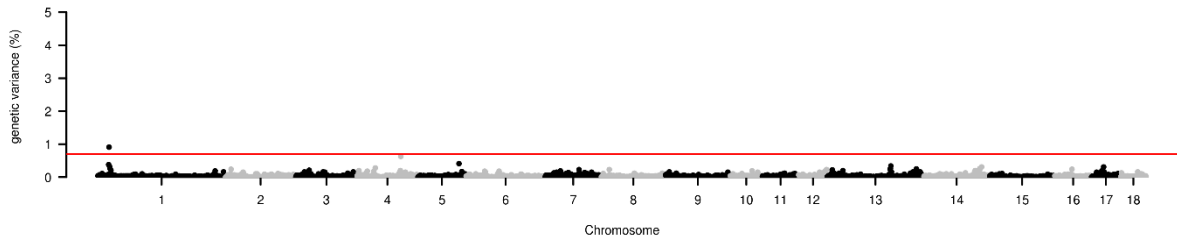
**MPV**



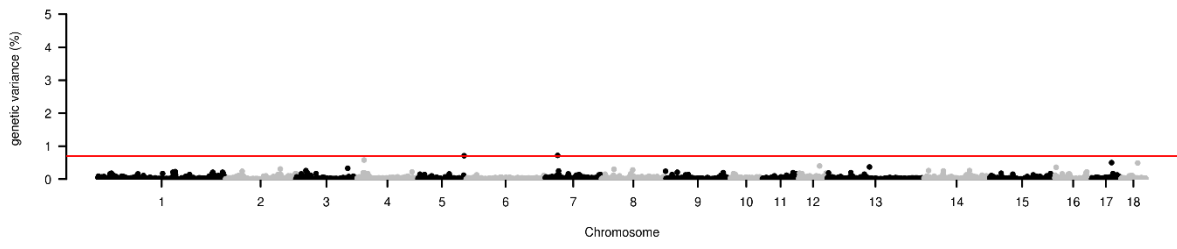
**NEUTRO**



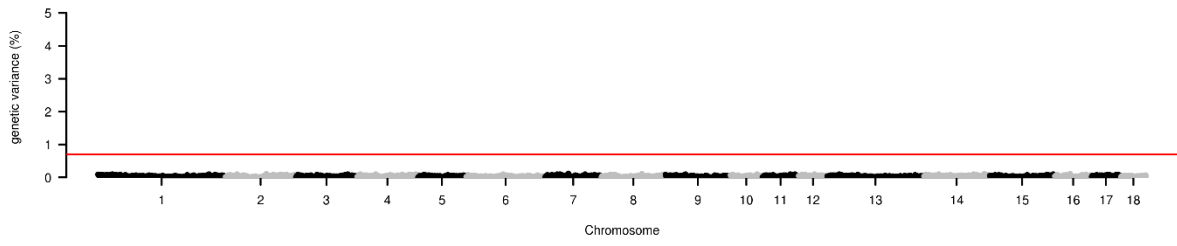
**PLT**



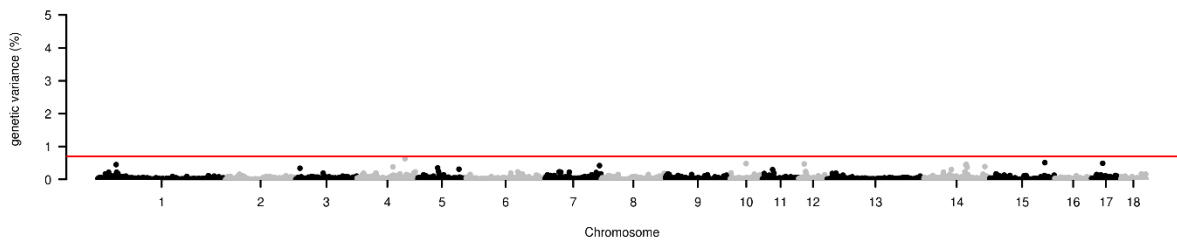
**RBC**



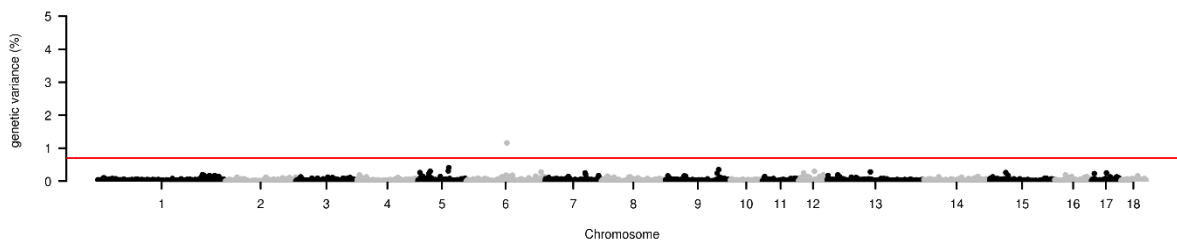
### RDW



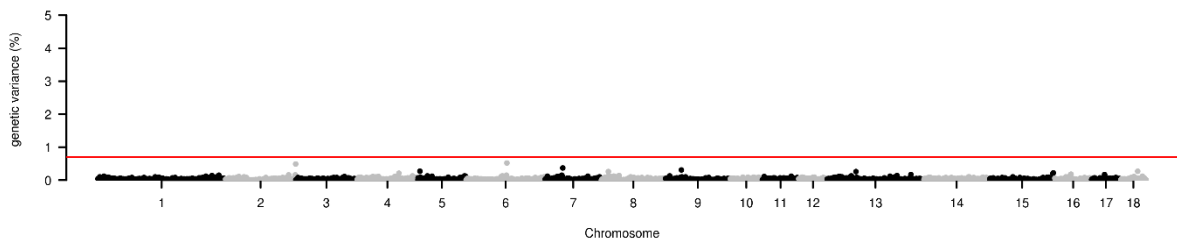
### WBC



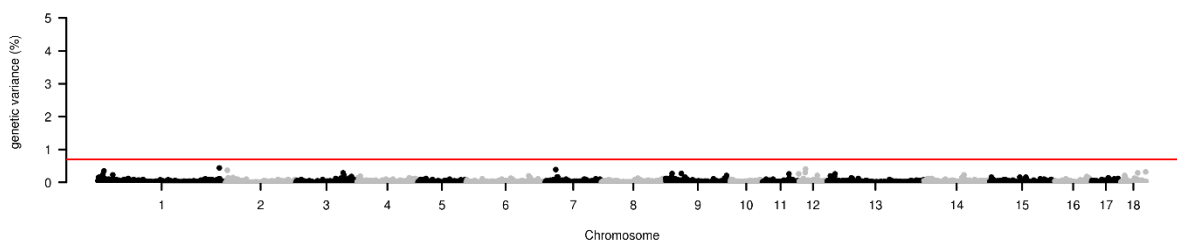
### Alb



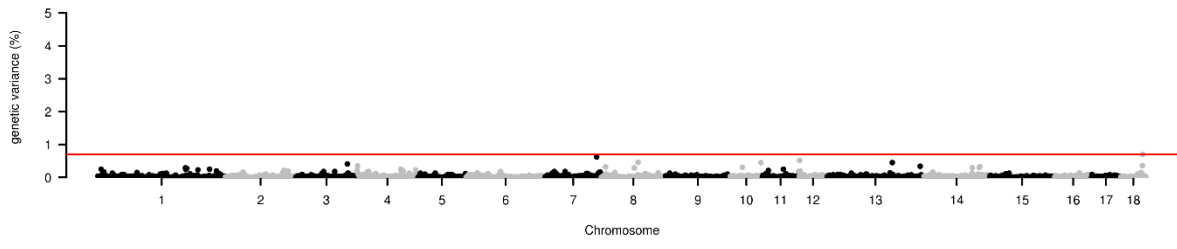
### Alb-Glob-ratio



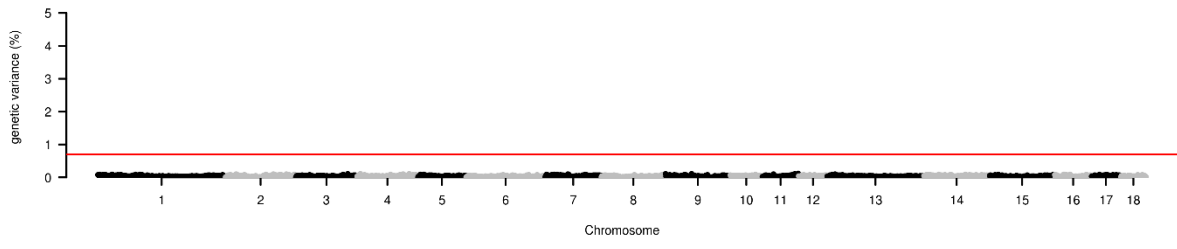
### ALP



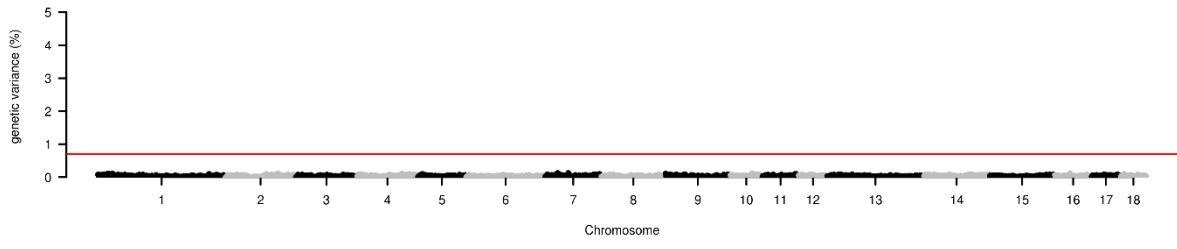
ALT



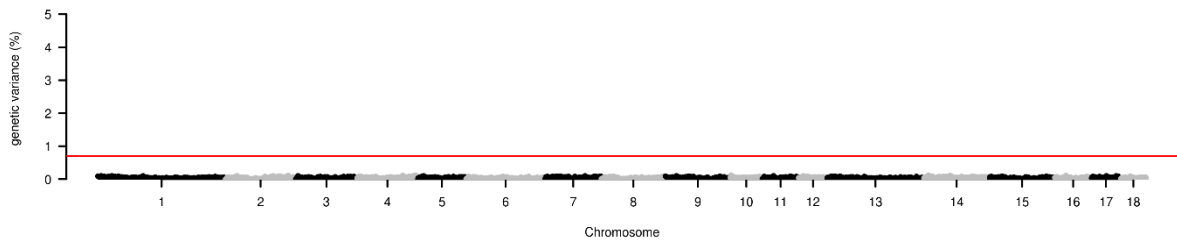
AST



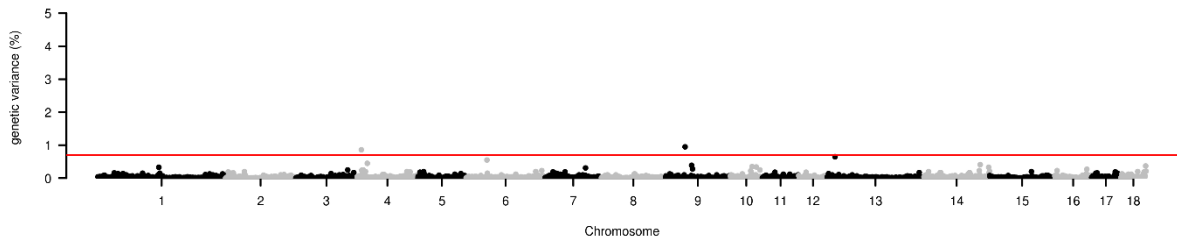
CK



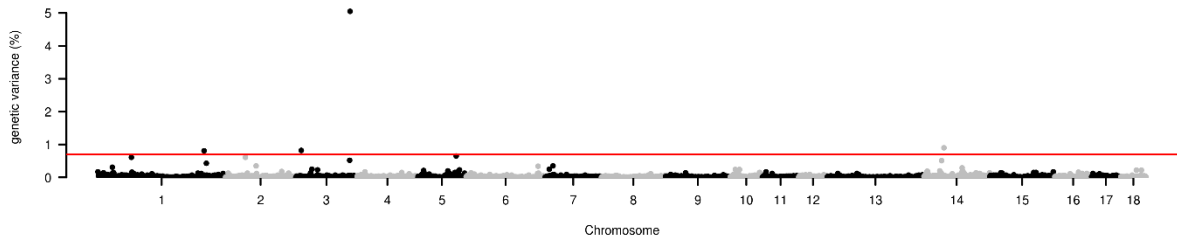
Glu



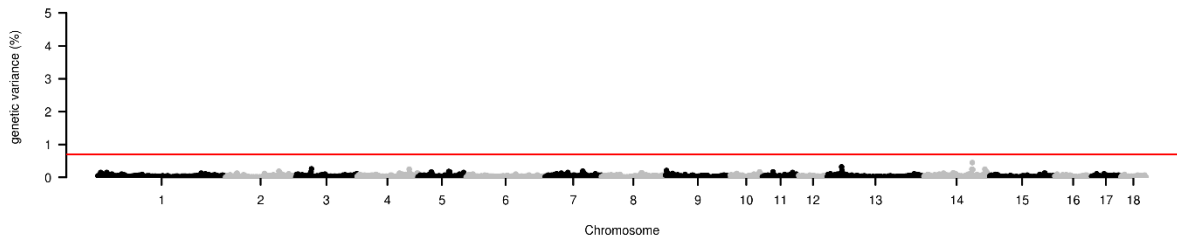
HDL-Chol



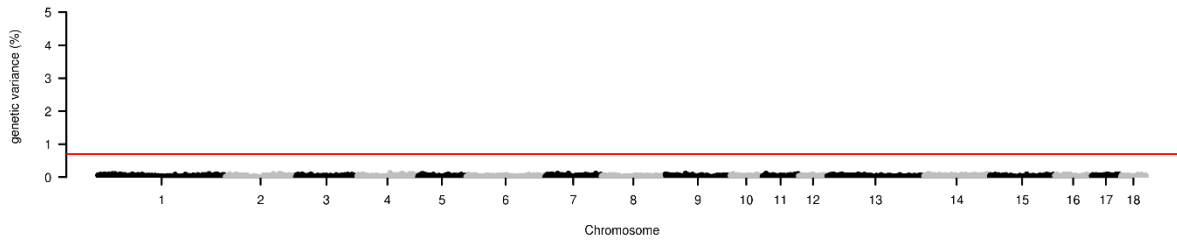
### LDL-Chol



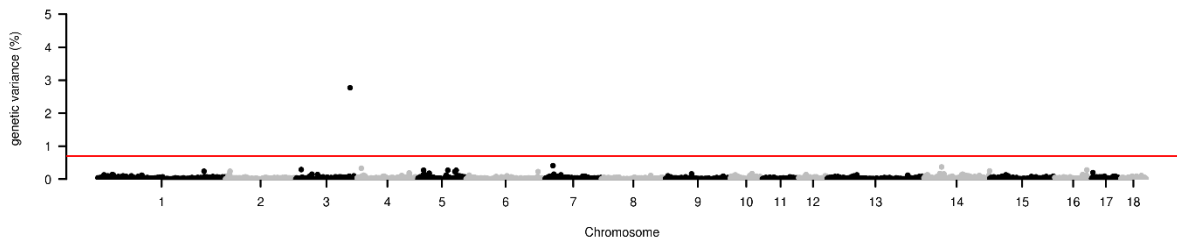
### NEFA



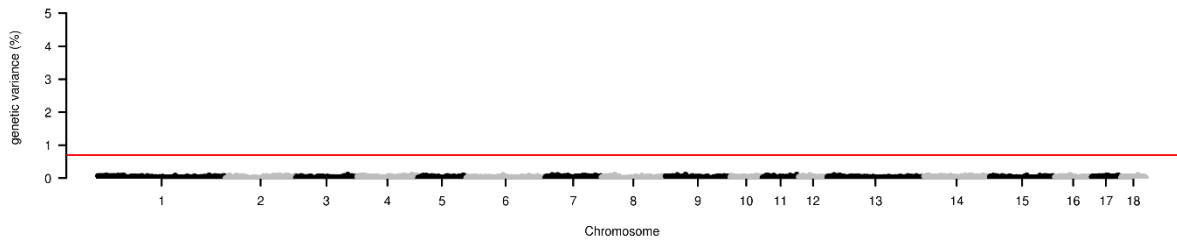
### T-Bil



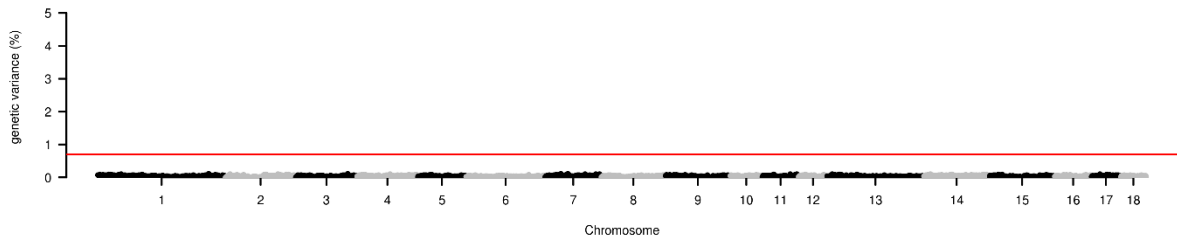
### T-Chol



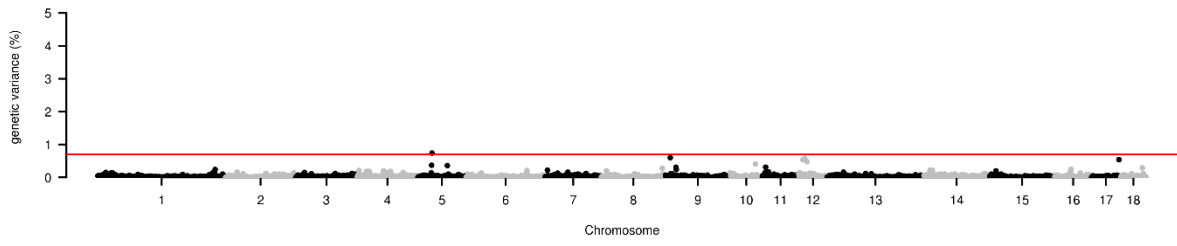
### TG



### T-Prot

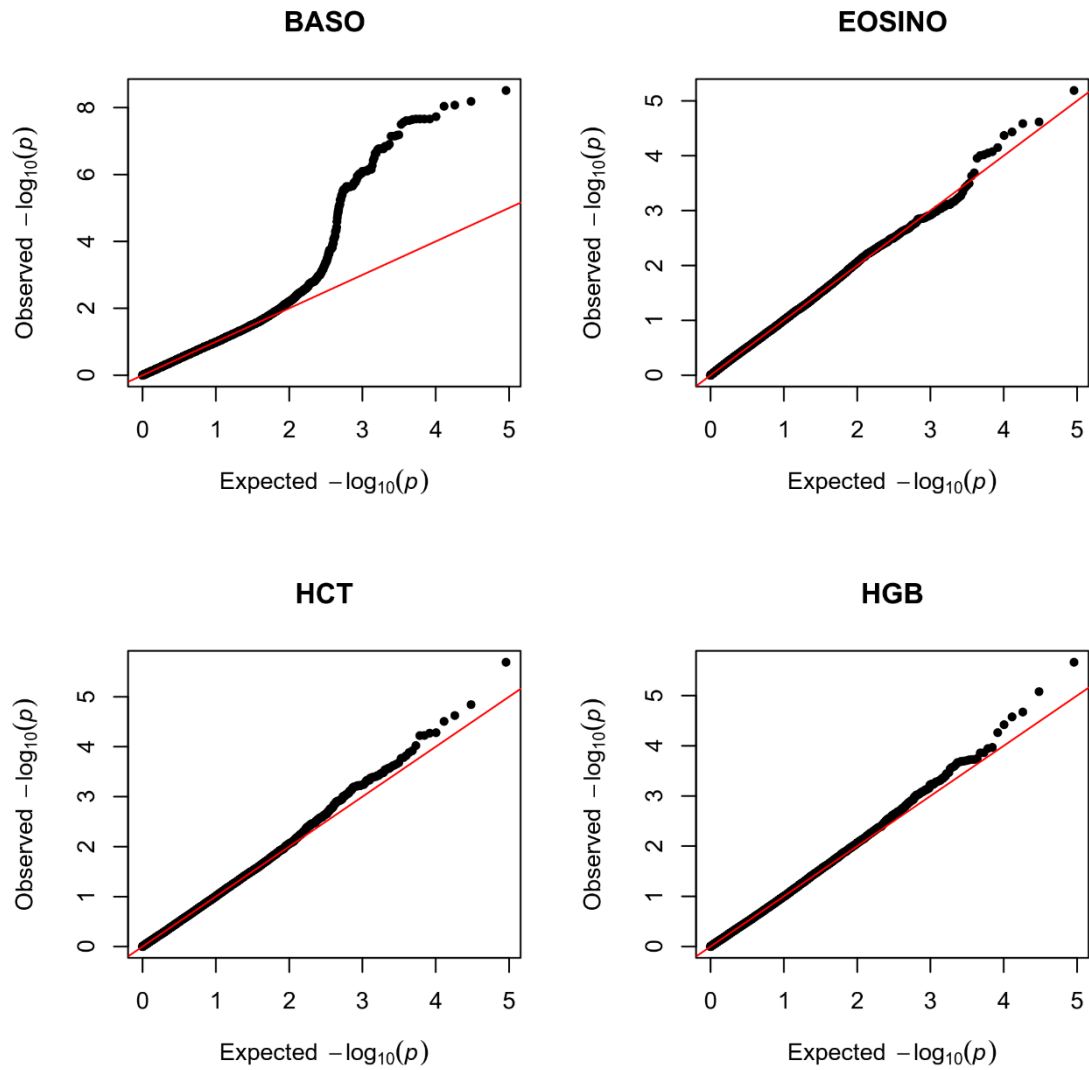


### UA

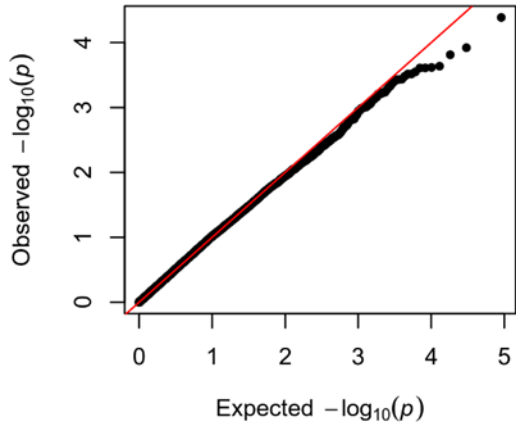




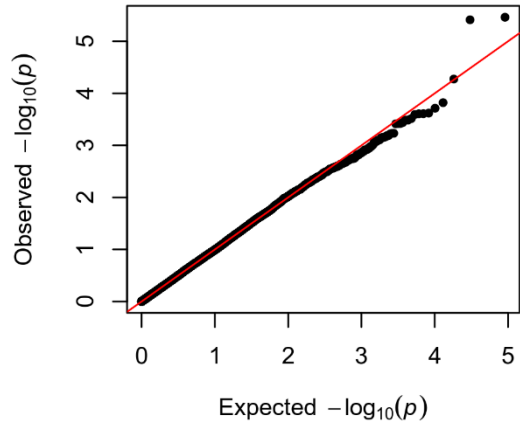
**Supplementary Figure S4.** QQ-plots of the single marker genome wide association studies for the 30 blood parameters Trait abbreviations are defined in Supplementary Table S1.



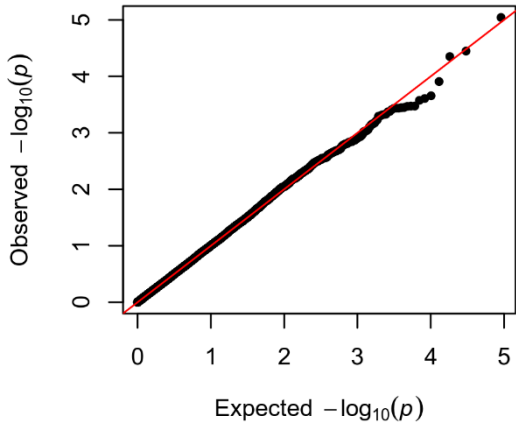
**LYMPHO**



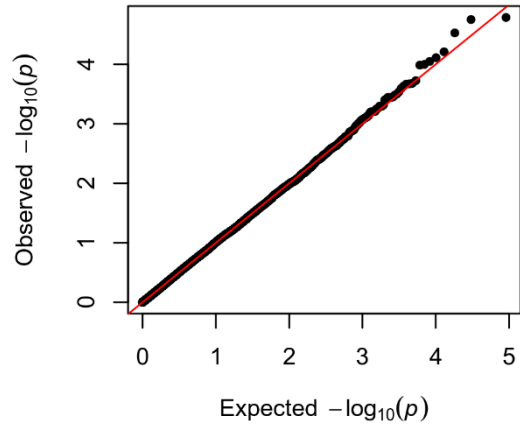
**MCH**



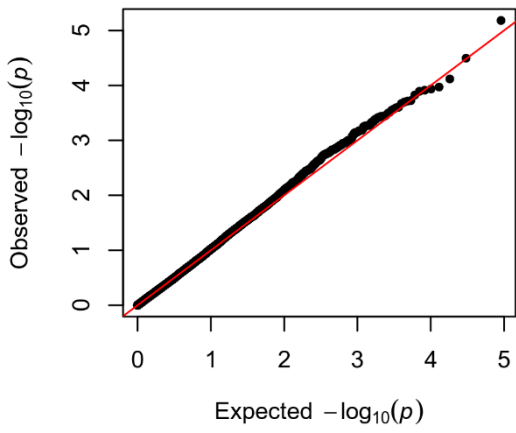
**MCHC**



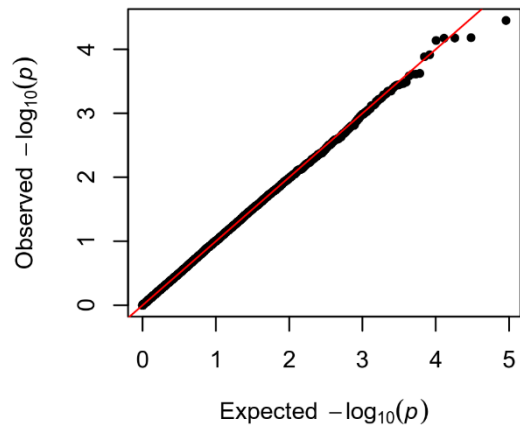
**MCV**



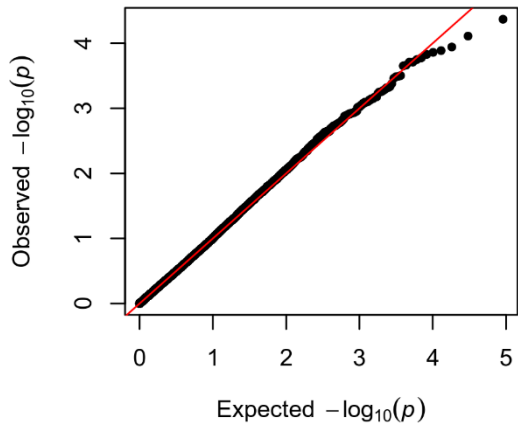
**MONO**



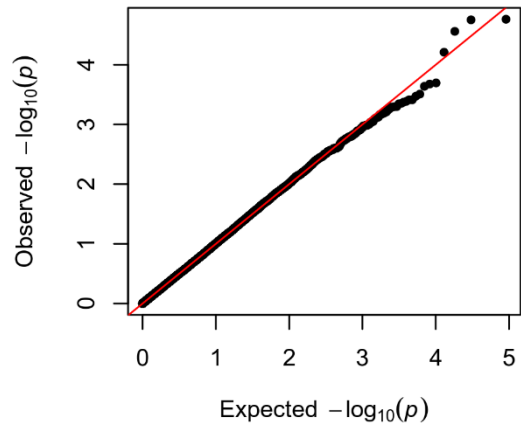
**MPV**



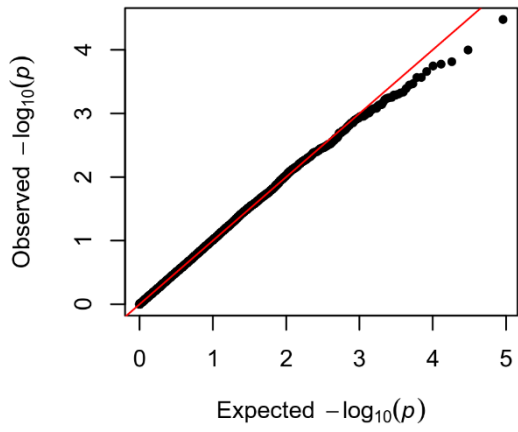
**NEUTRO**



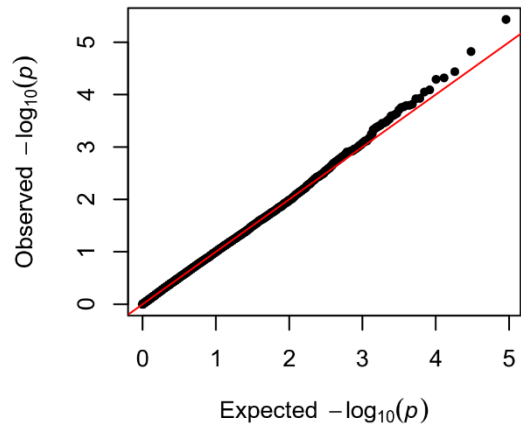
**PLT**



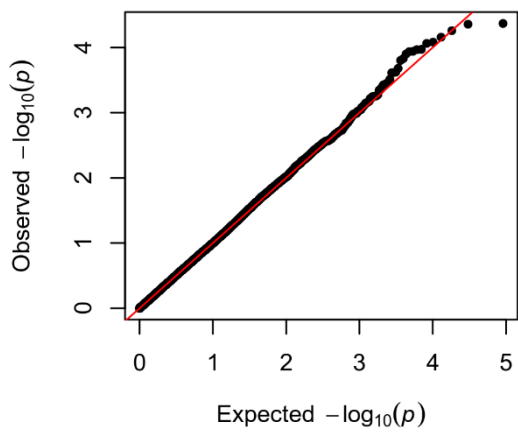
**RBC**



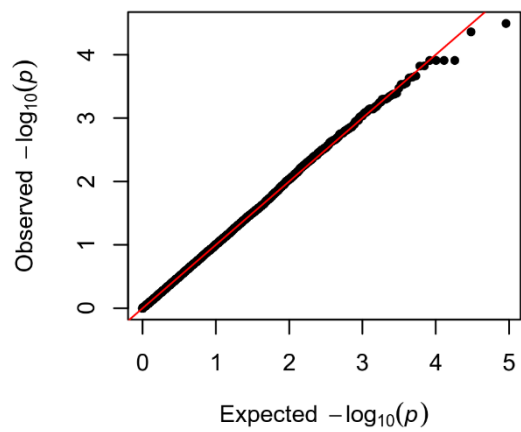
**RDW**



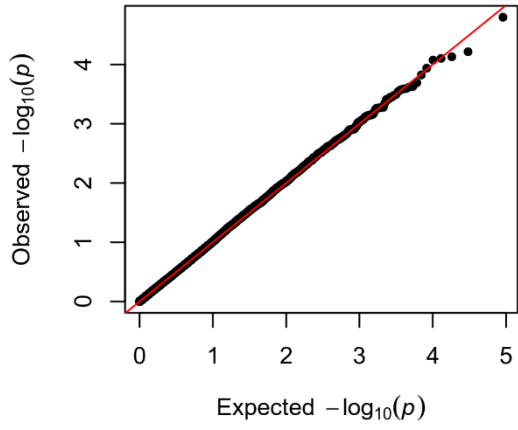
**WBC**



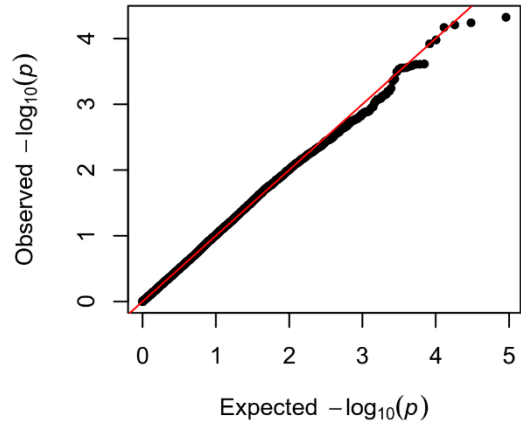
**Alb**



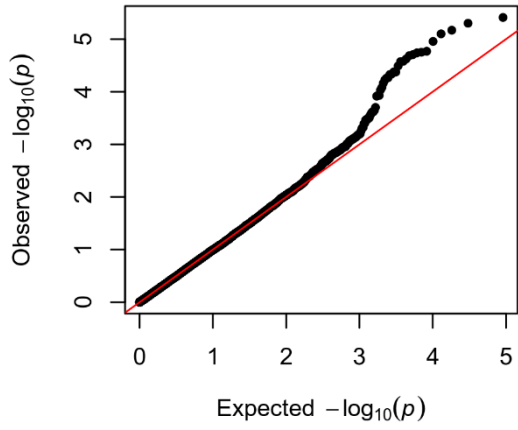
**Alb-Glob-ratio**



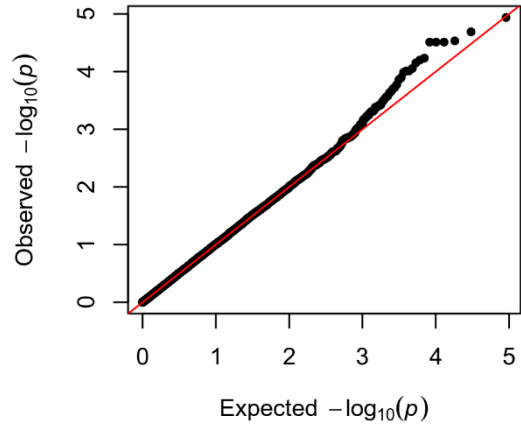
**ALP**



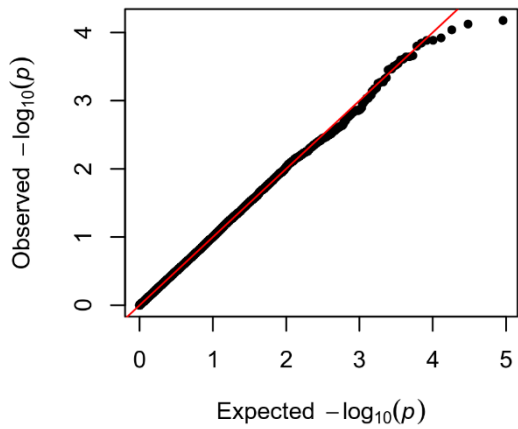
**ALT**



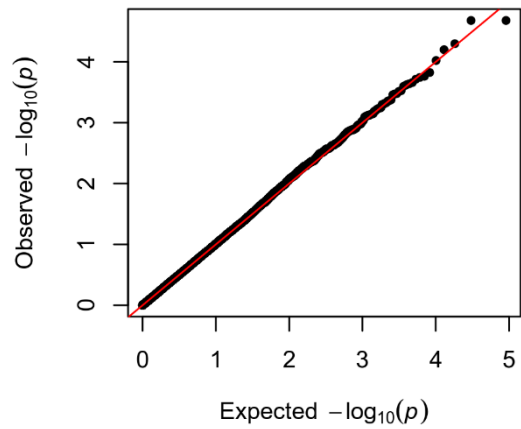
**AST**



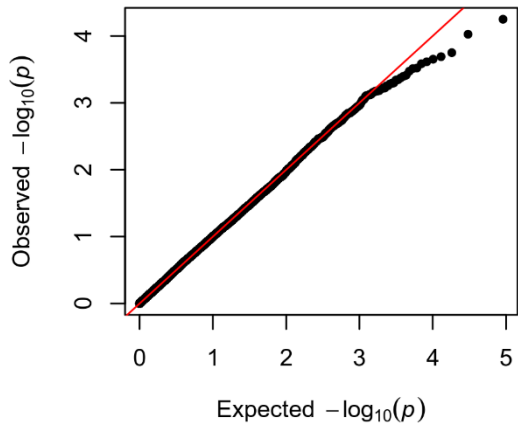
**CK**



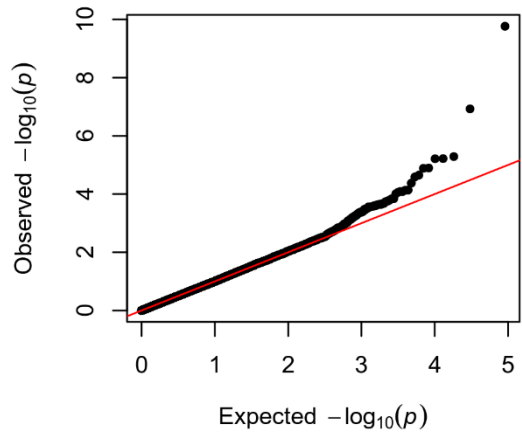
**Glu**



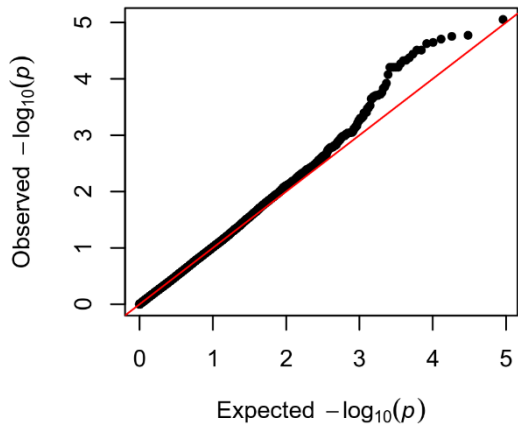
**HDL-Chol**



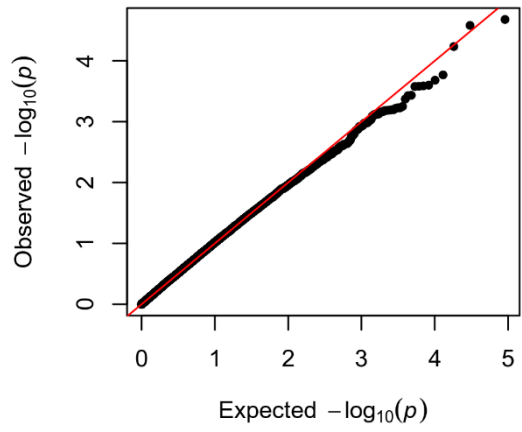
**LDL-Chol**



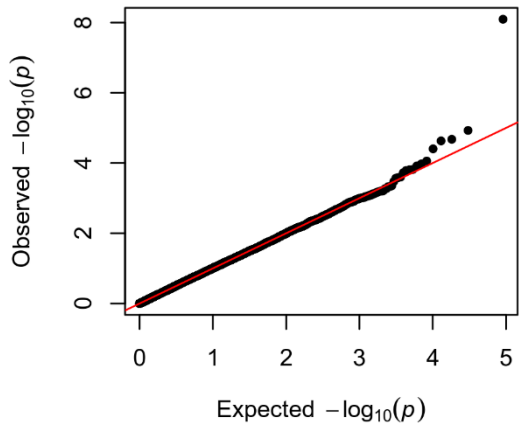
**NEFA**



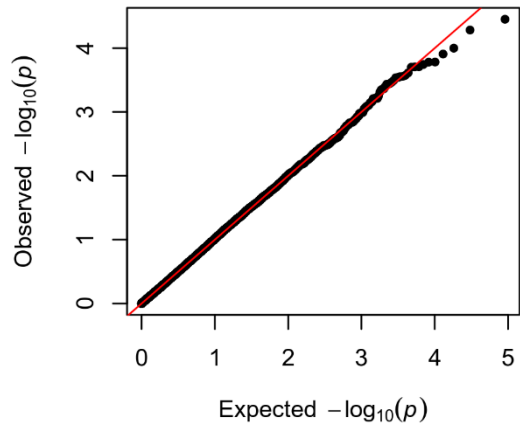
**T-Bil**



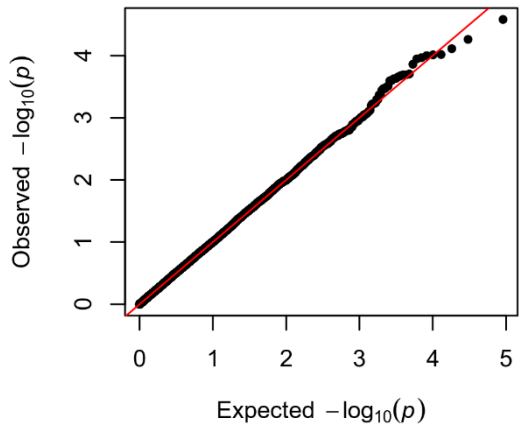
**T-Chol**



**TG**



**T-Prot**



**UA**

