Supplemental Table 1. List of primers sequences used in assay

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNP** | **1st-PCRP** | **2nd-PCRP** | **UEP\_DIR** | **UEP\_SEQ** |
| rs2762934 | ACGTTGGATGACTGTCTTTCTAGATGGTGG | ACGTTGGATGTGTAAACCAGCAGTGAACCC | F | ATCCCAGCACTCAGTC |
| rs1977297 | ACGTTGGATGACTGAATGCAGGTCTCTGTC | ACGTTGGATGTGGGAATGCAGAGATGGTAG | R | GAGAATAGTTGACATGTTGCATA |
| rs2762940 | ACGTTGGATGAGGGAGGATCATTTAAGTGC | ACGTTGGATGAGATGGGACTTTCGTGTTGC | F | gagaTCAGGGCTCCCACTGATTCT |
| rs4809958 | ACGTTGGATGATCCCACACTTTTAAGAGGC | ACGTTGGATGAACAGCAATGCTGGAGTTGG | F | tgcttGAGTTGGAGTCTATGTTTAGC |
| rs56229249 | ACGTTGGATGTTTGGTACCATATGGACCTC | ACGTTGGATGCACATAAGACCTTTGGATGC | F | ttgtCTTTGGATGCCAGTTTCATAA |
| rs2585428 | ACGTTGGATGCTCTGACAACCAAGTAGTAG | ACGTTGGATGGCATAAGTGAGTGACTTGGC | R | TGGGAAATGAGTAGAGAC |

SNP, single nucleotide polymorphism

Supplemental Table 2. Stratified effects of rs56229249 in *CYP24A1* on hypertension by cardiovascular disease

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model** | **Coronary heart disease** | **Non-coronary heart disease** | **Cerebral infarction** | **Non-cerebral infarction** |
|  | **OR (95% CI)** | ***p*** | **OR (95% CI)** | ***p*** | **OR (95% CI)** | ***p*** | **OR (95% CI)** | ***p*** |
| Homozygote | 0.46(0.22-0.95) | **0.036** | 0.59(0.28-1.24) | 0.163 | 0.66(0.31-1.40) | 0.276 | 0.42(0.20-0.87) | **0.020** |
| Heterozygote | 1.01(0.75-1.38) | 0.933 | 0.89(0.63-1.26) | 0.502 | 1.00(0.70-1.43) | 0.996 | 0.94(0.69-1.27) | 0.668 |
| Dominant | 0.92(0.68-1.24) | 0.584 | 0.84(0.60-1.17) | 0.298 | 0.94(0.67-1.33) | 0.741 | 0.85(0.63-1.14) | 0.275 |
| Recessive | 0.46(0.22-0.94) | **0.032** | 0.62(0.30-1.28) | 0.195 | 0.66(0.32-1.38) | 0.267 | 0.43(0.21-0.89) | **0.022** |
| Additive | 0.85(0.67-1.09) | 0.195 | 0.83(0.63-1.09) | 0.175 | 0.90(0.69-1.19) | 0.476 | 0.80(0.63-1.02) | 0.072 |

OR, odds ratio; CI, confidence interval; Numbers in bold meanstatistical significance

Supplemental Table 3 Association between genotypes of *CYP24A1* polymorphism and clinical factors

|  |  |  |  |
| --- | --- | --- | --- |
| **Characteristics** | **rs2762934** |  | **rs1977297** |
| **AA** | **AG** | **GG** | ***p***  |  | **TT** | **TC** | **CC** | ***p***  |
| Urea | 3.55 ± 0.49 | 5.37 ± 2.14 | 5.57 ± 2.28 | 0.910 |  | 5.32 ± 1.43 | 5.71 ± 2.74 | 5.37 ± 1.84 | 0.215 |
| Creatinine | 64.50 ± 7.78 | 79.43 ± 20.05 | 76.95 ± 25.51 | 0.492 |  | 74.13 ± 16.46 | 78.83 ± 30.46 | 76.80 ± 18.89 | 0.385 |
| Uric acid (μmol/L) | 339.00 ± 77.78 | 294.91 ± 83.65 | 293.95 ± 92.67 | 0.781 |  | 278.63 ± 76.88 | 298.77 ± 98.19 | 293.43 ± 85.81 | 0.955 |
| TG (mmol/L) | 1.19 ± 0.81 | 1.73 ± 1.00 | 1.70 ± 1.22 | 0.813 |  | 1.91 ± 1.73 | 1.63 ± 1.13 | 1.77 ± 1.27 | 0.260 |
| TC (mmol/L) | 3.56 ± 0.29 | 3.83 ± 0.99 | 4.11 ± 1.13 | 0.069 |  | 4.26 ± 1.16 | 3.94 ± 1.04 | 4.10 ± 1.14 | 0.090 |
| HDL (mmol/L) | 1.09 ± 0.01 | 1.09 ± 0.24 | 1.13 ± 0.26 | 0.405 |  | 1.11 ± 0.25 | 1.15 ± 0.28 | 1.10 ± 0.23 | 0.127 |
| LDL (mmol/L) | 1.55 ± 0.18 | 1.75 ± 0.54 | 1.96 ± 0.82 | **0.036** |  | 1.98 ± 0.75 | 1.88 ± 0.81 | 1.94 ± 0. 76 | 0.618 |
| PLT (109/L) | 196.50 ± 82.73 | 180.80 ± 79.66 | 176.59 ± 66.76 | 0.800 |  | 175.18 ± 62.28 | 180.60 ± 74.20 | 174.83 ± 66.94 | 0.668 |
| PDW (%) | 14.20 ± 1.56 | 14.07 ± 2.84 | 14.29 ± 2.89 | 0.800 |  | 14.20 ± 3.50 | 14.03 ± 2.84 | 14.47 ± 2.71 | 0.303 |
| MPV (FL) | 10.95 ± 0.78 | 12.36 ±5.67 | 12.38 ± 6.01 | 0.944 |  | 12.21 ± 7.16 | 12.27 ± 5.83 | 12.51 ± 5.69 | 0.892 |
| PCT (%) | 0.22 ±0.08 | 1.01 ± 3.43 | 0.70 ± 2.35 | 0.544 |  | 0.47 ± 2.00 | 0.75 ± 2.42 | 0.86 ± 2.93 | 0.615 |
| WBC | 11.30 ± 6.24 | 9.53 ± 11.79 | 9.97 ± 12.07 | 0.935 |  | 7.89 ± 7.77 | 9.82 ± 11.87 | 10.41 ± 12.93 | 0.372 |
| RBC | 5.73 ± 0.48 | 4.80 ± 0.63 | 4.73 ± 0.62 | 0.050 |  | 4.67 ± 0.50 | 4.76 ± 0.65 | 4.75 ± 0.62 | 0.594 |
| HGB | 165.00 ± 1.41 | 135.88 ± 28.23 | 134.26 ± 27.16 | 0.255 |  | 135.07 ± 20.03 | 133.41 ± 26.89 | 135.74 ± 29.41 | 0.668 |
| Ca | 2.38 ± 0.18 | 2.28 ± 0.17 | 2.30 ± 0.13 | 0.376 |  | 2.31 ± 0.11 | 2.30 ± 0.13 | 2.29 ± 0.15 | 0.602 |
| Glucose | 5.42 ± 1.29 | 6.20 ± 2.44 | 6.63 ± 2.80 | 0.294 |  | 6.38 ± 2.30 | 6.40 ± 2.52 | 6.68 ± 3.00 | 0.496 |
| **Characteristics** | **rs2762940** |  | **rs4809958** |
| **AA** | **CA** | **CC** | ***p***  |  | **TT** | **GT** | **GG** | ***p***  |
| Urea | 5.37 ± 1.76 | 5.65 ± 2.56 | 5.64 ± 2.90 | 0.385 |  | 5.56 ± 2.61 | 5.45 ± 1.95 | 5.61 ± 2.00 | 0.816 |
| Creatinine | 75.08 ± 19.79 | 79.23 ± 26.84 | 81.37 ± 32.91 | 0.103 |  | 76.51 ± 29.01 | 78.09 ± 20.94 | 77.87 ± 18.92 | 0.786 |
| Uric acid (μmol/L) | 282.99 ± 83.37 | 304.78 ± 97.59 | 303.33 ± 86.36 | **0.030** |  | 295.06 ± 87.48 | 295.33 ± 93.36 | 286.87 ± 91.47 | 0.968 |
| TG (mmol/L) | 1.76 ± 1.53 | 1.67 ± 1.00 | 1.77 ± 1.00 | 0.737 |  | 1.79 ± 1.32 | 1.64 ± 1.09 | 1.85 ± 1.77 | 0.370 |
| TC (mmol/L) | 3.95 ± 1.08 | 4.12 ± 1.14 | 4.22 ± 1.07 | 0.166 |  | 4.16 ± 1.05 | 3.98 ± 1.17 | 3.93 ± 0.97 | 0.158 |
| HDL (mmol/L) | 1.11 ± 0.25 | 1.14 ± 0.28 | 1.12 ± 0.22 | 0.414 |  | 1.13 ± 0.25 | 1.12 ± 0.26 | 1.12 ± 0.30 | 0.927 |
| LDL (mmol/L) | 1.91 ± 0.85 | 1.92 ± 0.72 | 1.92 ± 0.60 | 0.999 |  | 1.95 ± 0.67 | 1.91 ± 0.89 | 1.80 ± 0.62 | 0.434 |
| PLT (109/L) | 176.96 ± 66.40 | 178.14 ± 76.21 | 176.58 ± 50.90 | 0.980 |  | 178.80 ± 71.67 | 178.80 ± 71.67 | 167.57 ± 66.70 | 0.551 |
| PDW (%) | 14.16 ± 2.91 | 14.33 ± 2.91 | 14.23 ± 2.50 | 0.829 |  | 14.16 ± 2.75 | 14.23 ± 2.90 | 14.62 ± 3.20 | 0.608 |
| MPV (FL) | 11.90 ± 5.01 | 12.93 ± 6.89 | 12.02 ± 4.99 | 0.180 |  | 12.59 ± 6.25 | 12.14 ± 5.21 | 12.46 ± 7.48 | 0.738 |
| PCT (%) | 0.55 ± 1.96 | 1.05 ± 3.26 | 0.48 ± 1.86 | 0.107 |  | 0.95 ± 3.11 | 0.61 ± 2.12 | 0.67 ± 2.40 | 0.588 |
| WBC | 9.11 ± 9.76 | 11.00 ± 14.58 | 8.37 ± 7.43 | 0.167 |  | 10.42 ± 12.72 | 9.65 ± 11.62 | 8.65 ± 10.50 | 0.604 |
| RBC | 4.73 ± 0.68 | 4.77 ± 0.56 | 4.76 ± 0.58 | 0.819 |  | 4.74 ± 0.60 | 4.78 ± 0.63 | 4.68 ± 0.64 | 0.552 |
| HGB | 133.12 ± 27.02 | 134.25 ± 28.46 | 140.00 ± 23.38 | 0.403 |  | 134.77 ± 29.94 | 134.+6 ± 25.46 | 134.65 ± 25.29 | 0.999 |
| Ca | 2.30 ± 0.13 | 2.30 ± 0.15 | 2.29 ± 0.14 | 0.791 |  | 2.29 ± 0.14 | 2.30 ± 0.13 | 2.31 ± 0.14 | 0.619 |
| Glucose | 5.42 ± 1.29 | 6.20 ± 2.44 | 6.63 ± 2.80 | 0.425 |  | 6.62 ± 2.72 | 6.55 ± 2.80 | 6.09 ± 2.43 | 0.442 |
| **Characteristics** |  | **rs56229249** |  |  |  |  | **rs2585428** |  |  |
| **AA** | **AG** | **GG** | ***p***  |  | **TT** | **CT** | **CC** | ***p***  |
| Urea | 5.44 ± 1.90 | 5.66 ± 2.79 | 5.31 ± 1.15 | 0.538 |  | 5.61 ± 2.80 | 5.57 ± 2.23 | 5.38 ± 1.95 | 0.579 |
| Creatinine | 75.98 ± 18.79 | 79.47 ± 31.70 | 80.41 ± 19.76 | 0.268 |  | 77.85 ± 35.53 | 77.69 ± 23.24 | 76.78 ± 18.91 | 0.919 |
| Uric acid (μmol/L) | 285.91 ± 87.28 | 305.01 ± 93.78 | 311.05 ± 98.77 | 0.057 |  | 300.15 ± 92.04 | 294.43 ± 93.18 | 291.18 ± 86.16 | 0.767 |
| TG (mmol/L) | 1.71 ± 1.35 | 1.72 ± 1.16 | 1.72 ± 1.16 | 0.513 |  | 1.67 ± 0.90 | 1.77 ± 1.38 | 1.69 ± 1.28 | 0.784 |
| TC (mmol/L) | 3.99 ± 1.10 | 4.15 ± 1.09 | 4.05 ± 1.34 | 0.314 |  | 4.03 ± 1.16 | 4.07 ± 1.13 | 4.02 ± 1.05 | 0.880 |
| HDL (mmol/L) | 1.12 ± 0.25 | 1.14 ± 0.27 | 1.06 ± 0.22 | 0.390 |  | 1.14 ± 0.26 | 1.11 ± 0.26 | 1.13 ± 0.25 | 0.534 |
| LDL (mmol/L) | 1.90 ± 0.82 | 1.96 ± 0.72 | 1.71 ± 0.61 | 0.371 |  | 1.86 ± 0.75 | 1.94 ± 0.87 | 1.88 ± 0.64 | 0.685 |
| PLT (109/L) | 175.91 ±67.01 | 179.67 ± 75.70 | 178.25 ± 46.84 | 0.848 |  | 184.10 ± 79.64 | 174.71 ± 68.97 | 178.24 ± 65.14 | 0.562 |
| PDW (%) | 14.22 ± 2.83 | 14.23 ± 2.94 | 14.48 ± 3.08 | 0.928 |  | 14.46 ± 3.04 | 14.17 ± 2.81 | 14.24 ± 2.88 | 0.741 |
| MPV (FL) | 12.12 ± 5.47 | 12.86 ± 6.83 | 11.37 ± 1.40 | 0.317 |  | 12.34 ± 5.76 | 12.63 ± 6.21 | 11.98 ± 5.54 | 0.564 |
| PCT (%) | 0.61 ± 2.14 | 1.05 ± 3.31 | 0.20 ± 0.04 | 0.131 |  | 0.66 ± 2.30 | 0.93 ± 3.02 | 0.57 ± 2.02 | 0.375 |
| WBC | 9.60 ± 11.45 | 10.63 ± 13.31 | 6.74 ± 2.49 | 0.326 |  | 9.43 ± 11.13 | 10.56 ± 13.63 | 9.03 ± 9.39 | 0.419 |
| RBC | 4.75 ± 0.67 | 4.73 ± 0.55 | 4.86 ± 0.51 | 0.631 |  | 4.77 ± 0.56 | 4.74 ± 0.65 | 4.75 ± 0.60 | 0.947 |
| HGB | 134.98 ± 27.32 | 133.21 ± 28.40 | 144.55 ± 14.77 | 0.206 |  | 134.36 ± 29.83 | 133.52 ± 28.85 | 136.67 ± 23.49 | 0.520 |
| Ca | 2.31 ± 0.14 | 2.29 ± 0.14 | 2.27 ± 0.11 | 0.374 |  | 2.31 ± 0.12 | 2.30 ± 0.15 | 2.30 ± 0.13 | 0.916 |
| Glucose | 6.66 ± 3.01 | 6.41 ± 2.32 | 5.91 ± 1.60 | 0.364 |  | 6.32 ±1.91 | 6.60 ± 2.65 | 6.53 ± 3.17 | 0.723 |

TG, triglyceride; TC, total cholesterol; HDL, high-density lipoprotein; LDL, low-density lipoprotein; PLT, platelet; PDW, platelet distribution width; MPV, mean platelet volume; PCT, plateletcrit; WBC, white blood cells; RBC, red blood cells; HGB, hemoglobin; Numbers in bold meanstatistical significance