

Supplementary Table 1

| Pathway | Gene  | rsid       | MAF         | HWE p-value | Hazard Ratio  | Confidence Interval   |      | Hazard Ratio     | Confidence Interval   |       | p-value  | q-value  |
|---------|-------|------------|-------------|-------------|---------------|-----------------------|------|------------------|-----------------------|-------|----------|----------|
|         |       |            | in controls | in controls | Heterozygotes | vs. Major Homozygotes |      | Rare Homozygotes | vs. Major Homozygotes |       |          |          |
| DNA     | APEX1 | rs1048945  | 0.033       | 0.2890      | 1.52          | 1.01                  | 2.28 | 2.48             | 0.34                  | 18.28 | 0.121329 | 0.728251 |
| DNA     | APEX1 | rs1760944  | 0.418       | 0.8070      | 0.98          | 0.75                  | 1.27 | 0.94             | 0.65                  | 1.36  | 0.952585 | 0.998599 |
| DNA     | ERCC1 | rs3212964  | 0.130       | 0.2739      | 0.92          | 0.68                  | 1.24 | 0.89             | 0.36                  | 2.18  | 0.840899 | 0.991798 |
| DNA     | ERCC1 | rs11615    | 0.340       | 0.5977      | 0.97          | 0.75                  | 1.25 | 1.10             | 0.73                  | 1.66  | 0.818147 | 0.991798 |
| DNA     | ERCC1 | rs3212955  | 0.221       | 0.8214      | 1.07          | 0.84                  | 1.38 | 1.08             | 0.58                  | 2.02  | 0.842466 | 0.991798 |
| DNA     | ERCC1 | rs3212986  | 0.229       | 0.9123      | 1.08          | 0.84                  | 1.39 | 0.97             | 0.54                  | 1.76  | 0.813308 | 0.991798 |
| DNA     | ERCC1 | rs3212948  | 0.318       | 0.9280      | 1.00          | 0.78                  | 1.29 | 1.02             | 0.65                  | 1.58  | 0.997715 | 0.999465 |
| DNA     | ERCC2 | rs1618536  | 0.492       | 0.1810      | 0.84          | 0.63                  | 1.12 | 0.89             | 0.62                  | 1.26  | 0.509037 | 0.991798 |
| DNA     | ERCC2 | rs13181    | 0.352       | 0.1963      | 0.87          | 0.68                  | 1.13 | 1.16             | 0.80                  | 1.68  | 0.304999 | 0.910848 |
| DNA     | ERCC2 | rs3916874  | 0.268       | 0.3269      | 1.01          | 0.78                  | 1.30 | 1.43             | 0.95                  | 2.15  | 0.24227  | 0.87406  |
| DNA     | ERCC2 | rs1799787  | 0.279       | 0.4417      | 0.94          | 0.73                  | 1.21 | 1.31             | 0.85                  | 2.00  | 0.348475 | 0.959984 |
| DNA     | ERCC2 | rs238415   | 0.424       | 0.8075      | 0.86          | 0.66                  | 1.12 | 0.76             | 0.53                  | 1.10  | 0.288282 | 0.892118 |
| DNA     | ERCC2 | rs50872    | 0.248       | 0.8263      | 0.91          | 0.70                  | 1.17 | 0.78             | 0.44                  | 1.39  | 0.571405 | 0.991798 |
| DNA     | ERCC2 | rs50871    | 0.480       | 0.9371      | 0.94          | 0.70                  | 1.25 | 1.14             | 0.82                  | 1.58  | 0.456277 | 0.991798 |
| DNA     | LIG1  | rs416844   | 0.459       | 0.1315      | 0.92          | 0.70                  | 1.21 | 0.83             | 0.60                  | 1.16  | 0.56027  | 0.991798 |
| DNA     | LIG1  | rs3730913  | 0.177       | 0.2823      | 0.89          | 0.68                  | 1.16 | 1.89             | 0.99                  | 3.62  | 0.120395 | 0.728251 |
| DNA     | LIG1  | rs2386523  | 0.476       | 0.5292      | 1.20          | 0.90                  | 1.61 | 1.13             | 0.81                  | 1.57  | 0.450711 | 0.991798 |
| DNA     | LIG1  | rs3729517  | 0.118       | 0.7117      | 0.90          | 0.67                  | 1.21 | 1.71             | 0.75                  | 3.93  | 0.365576 | 0.961006 |
| DNA     | LIG1  | rs2241721  | 0.361       | 0.8009      | 1.15          | 0.89                  | 1.50 | 1.14             | 0.79                  | 1.65  | 0.537907 | 0.991798 |
| DNA     | MGMT  | rs10741191 | 0.404       | 0.1719      | 1.02          | 0.77                  | 1.35 | 1.39             | 1.00                  | 1.94  | 0.108207 | 0.728251 |
| DNA     | MGMT  | rs12256667 | 0.168       | 0.1803      | 0.97          | 0.74                  | 1.27 | 0.20             | 0.03                  | 1.44  | 0.100919 | 0.728251 |
| DNA     | MGMT  | rs4750768  | 0.325       | 0.2107      | 0.96          | 0.74                  | 1.24 | 1.13             | 0.74                  | 1.72  | 0.750349 | 0.991798 |
| DNA     | MGMT  | rs2026975  | 0.291       | 0.2263      | 0.75          | 0.58                  | 0.97 | 0.72             | 0.43                  | 1.19  | 0.057138 | 0.728251 |
| DNA     | MGMT  | rs11813056 | 0.181       | 0.2517      | 0.94          | 0.71                  | 1.24 | 0.63             | 0.23                  | 1.72  | 0.593053 | 0.991798 |
| DNA     | MGMT  | rs12243174 | 0.220       | 0.2682      | 1.18          | 0.92                  | 1.52 | 1.09             | 0.60                  | 2.00  | 0.441368 | 0.991798 |
| DNA     | MGMT  | rs7087131  | 0.179       | 0.2725      | 0.86          | 0.65                  | 1.13 | 2.32             | 1.16                  | 4.60  | 0.044469 | 0.728251 |
| DNA     | MGMT  | rs1762429  | 0.386       | 0.3646      | 1.17          | 0.90                  | 1.54 | 1.28             | 0.88                  | 1.86  | 0.339671 | 0.954586 |
| DNA     | MGMT  | rs12917    | 0.162       | 0.4591      | 0.84          | 0.64                  | 1.11 | 1.65             | 0.72                  | 3.78  | 0.234873 | 0.873806 |
| DNA     | MGMT  | rs3793910  | 0.132       | 0.4795      | 0.89          | 0.67                  | 1.18 | 0.24             | 0.06                  | 1.00  | 0.038941 | 0.728251 |
| DNA     | MGMT  | rs12763287 | 0.171       | 0.4848      | 1.03          | 0.79                  | 1.35 | 1.07             | 0.50                  | 2.30  | 0.959929 | 0.998599 |
| DNA     | MGMT  | rs4751107  | 0.253       | 0.4909      | 0.92          | 0.71                  | 1.19 | 1.48             | 0.99                  | 2.22  | 0.101206 | 0.728251 |
| DNA     | MGMT  | rs569235   | 0.499       | 0.5298      | 0.94          | 0.70                  | 1.26 | 0.89             | 0.63                  | 1.26  | 0.811098 | 0.991798 |
| DNA     | MGMT  | rs2026976  | 0.313       | 0.5956      | 0.93          | 0.72                  | 1.21 | 1.49             | 1.04                  | 2.13  | 0.046223 | 0.728251 |
| DNA     | MGMT  | rs10741198 | 0.355       | 0.6111      | 1.04          | 0.80                  | 1.35 | 1.11             | 0.77                  | 1.62  | 0.853854 | 0.991798 |
| DNA     | MGMT  | rs12413023 | 0.412       | 0.6296      | 1.13          | 0.86                  | 1.50 | 1.32             | 0.93                  | 1.86  | 0.295148 | 0.898011 |
| DNA     | MGMT  | rs7080419  | 0.413       | 0.6299      | 1.22          | 0.93                  | 1.61 | 1.27             | 0.89                  | 1.81  | 0.269403 | 0.889231 |
| DNA     | MGMT  | rs7073225  | 0.194       | 0.6318      | 1.21          | 0.93                  | 1.58 | 1.52             | 0.87                  | 2.64  | 0.182338 | 0.799804 |
| DNA     | MGMT  | rs4750761  | 0.265       | 0.6324      | 1.12          | 0.87                  | 1.45 | 1.67             | 1.13                  | 2.47  | 0.048652 | 0.728251 |
| DNA     | MGMT  | rs7097039  | 0.096       | 0.6499      | 1.16          | 0.84                  | 1.59 | 0.92             | 0.29                  | 2.93  | 0.656152 | 0.991798 |
| DNA     | MGMT  | rs11511217 | 0.265       | 0.6672      | 0.79          | 0.62                  | 1.02 | 0.51             | 0.26                  | 1.01  | 0.035188 | 0.728251 |
| DNA     | MGMT  | rs11592158 | 0.251       | 0.6727      | 0.99          | 0.77                  | 1.28 | 0.70             | 0.38                  | 1.27  | 0.457181 | 0.991798 |
| DNA     | MGMT  | rs7068301  | 0.386       | 0.7377      | 1.01          | 0.78                  | 1.31 | 0.90             | 0.61                  | 1.32  | 0.82416  | 0.991798 |
| DNA     | MGMT  | rs12219606 | 0.396       | 0.7439      | 1.01          | 0.78                  | 1.32 | 0.94             | 0.65                  | 1.34  | 0.89742  | 0.991798 |
| DNA     | MGMT  | rs511361   | 0.455       | 0.7517      | 0.98          | 0.74                  | 1.30 | 0.87             | 0.62                  | 1.23  | 0.706868 | 0.991798 |
| DNA     | MGMT  | rs7099068  | 0.488       | 0.7531      | 1.14          | 0.85                  | 1.54 | 1.16             | 0.83                  | 1.62  | 0.62477  | 0.991798 |

|     |      |            |       |        |      |      |      |      |      |      |          |          |
|-----|------|------------|-------|--------|------|------|------|------|------|------|----------|----------|
| DNA | MGMT | rs12220782 | 0.288 | 0.7730 | 0.99 | 0.77 | 1.28 | 0.77 | 0.46 | 1.27 | 0.554603 | 0.991798 |
| DNA | MGMT | rs4750764  | 0.488 | 0.8125 | 0.84 | 0.64 | 1.10 | 0.81 | 0.57 | 1.15 | 0.364064 | 0.961006 |
| DNA | MGMT | rs3852507  | 0.467 | 0.8136 | 0.97 | 0.72 | 1.29 | 1.13 | 0.80 | 1.59 | 0.59191  | 0.991798 |
| DNA | MGMT | rs4750765  | 0.307 | 0.8586 | 1.25 | 0.96 | 1.62 | 1.44 | 0.97 | 2.13 | 0.112914 | 0.728251 |
| DNA | MGMT | rs3858300  | 0.356 | 0.8675 | 1.17 | 0.90 | 1.53 | 1.44 | 1.00 | 2.07 | 0.144973 | 0.739567 |
| DNA | MGMT | rs913117   | 0.438 | 0.8734 | 1.06 | 0.81 | 1.40 | 1.09 | 0.76 | 1.56 | 0.870817 | 0.991798 |
| DNA | MGMT | rs913119   | 0.444 | 0.8743 | 1.08 | 0.81 | 1.43 | 1.22 | 0.86 | 1.73 | 0.527835 | 0.991798 |
| DNA | MGMT | rs11016879 | 0.364 | 0.9332 | 1.13 | 0.87 | 1.47 | 1.66 | 1.14 | 2.40 | 0.037194 | 0.728251 |
| DNA | MGMT | rs11813363 | 0.144 | 1.0000 | 0.99 | 0.75 | 1.30 | 1.62 | 0.78 | 3.37 | 0.466683 | 0.991798 |
| DNA | MGMT | rs11016887 | 0.177 | 1.0000 | 1.01 | 0.77 | 1.32 | 1.13 | 0.61 | 2.10 | 0.929432 | 0.991798 |
| DNA | MGMT | rs10764901 | 0.263 | 1.0000 | 1.12 | 0.87 | 1.44 | 1.08 | 0.69 | 1.71 | 0.680665 | 0.991798 |
| DNA | MGMT | rs11016884 | 0.299 | 1.0000 | 0.98 | 0.76 | 1.26 | 1.10 | 0.74 | 1.63 | 0.845794 | 0.991798 |
| DNA | MLH1 | rs1799977  | 0.325 | 0.3301 | 1.12 | 0.87 | 1.45 | 0.93 | 0.61 | 1.42 | 0.543977 | 0.991798 |
| DNA | MLH1 | rs9852378  | 0.466 | 0.9373 | 1.35 | 1.01 | 1.81 | 0.88 | 0.61 | 1.27 | 0.0121   | 0.728251 |
| DNA | MSH2 | rs12998837 | 0.118 | 0.0916 | 1.14 | 0.86 | 1.51 | 2.00 | 1.06 | 3.78 | 0.111871 | 0.728251 |
| DNA | MSH2 | rs4608577  | 0.171 | 0.1062 | 1.01 | 0.77 | 1.33 | 1.85 | 1.07 | 3.20 | 0.119347 | 0.728251 |
| DNA | MSH2 | rs7607312  | 0.406 | 0.2882 | 0.93 | 0.71 | 1.22 | 0.99 | 0.68 | 1.44 | 0.865896 | 0.991798 |
| DNA | MSH2 | rs1981929  | 0.393 | 0.3248 | 1.03 | 0.79 | 1.35 | 1.17 | 0.82 | 1.69 | 0.688873 | 0.991798 |
| DNA | MSH2 | rs4952887  | 0.094 | 0.5946 | 0.67 | 0.46 | 0.99 | 0.93 | 0.23 | 3.83 | 0.10912  | 0.728251 |
| DNA | MSH2 | rs2303428  | 0.107 | 0.8232 | 0.74 | 0.53 | 1.03 | 2.80 | 0.87 | 8.97 | 0.051295 | 0.728251 |
| DNA | MSH3 | rs1677645  | 0.295 | 0.0001 | 1.05 | 0.81 | 1.37 | 1.26 | 0.87 | 1.83 | 0.480399 | 0.991798 |
| DNA | MSH3 | rs33013    | 0.351 | 0.1008 | 1.12 | 0.86 | 1.45 | 0.98 | 0.68 | 1.42 | 0.654893 | 0.991798 |
| DNA | MSH3 | rs245400   | 0.163 | 0.1507 | 0.95 | 0.73 | 1.25 | 1.74 | 0.76 | 3.99 | 0.437022 | 0.991798 |
| DNA | MSH3 | rs249633   | 0.240 | 0.2531 | 0.88 | 0.68 | 1.14 | 0.42 | 0.19 | 0.92 | 0.040391 | 0.728251 |
| DNA | MSH3 | rs33003    | 0.291 | 0.2751 | 1.13 | 0.88 | 1.46 | 1.52 | 1.02 | 2.26 | 0.129592 | 0.729368 |
| DNA | MSH3 | rs181747   | 0.310 | 0.3238 | 1.00 | 0.78 | 1.29 | 1.55 | 1.04 | 2.30 | 0.097456 | 0.728251 |
| DNA | MSH3 | rs836817   | 0.288 | 0.3845 | 0.89 | 0.69 | 1.15 | 0.87 | 0.56 | 1.34 | 0.617312 | 0.991798 |
| DNA | MSH3 | rs12513549 | 0.135 | 0.4971 | 1.02 | 0.77 | 1.35 | 0.38 | 0.09 | 1.54 | 0.268782 | 0.889231 |
| DNA | MSH3 | rs12522132 | 0.148 | 0.5249 | 0.99 | 0.75 | 1.30 | 0.36 | 0.09 | 1.48 | 0.242905 | 0.87406  |
| DNA | MSH3 | rs245345   | 0.452 | 0.5290 | 1.11 | 0.83 | 1.49 | 1.27 | 0.91 | 1.78 | 0.382903 | 0.988792 |
| DNA | MSH3 | rs863221   | 0.387 | 0.6149 | 0.88 | 0.68 | 1.14 | 0.75 | 0.52 | 1.10 | 0.296609 | 0.898011 |
| DNA | MSH3 | rs2897298  | 0.145 | 0.6281 | 1.01 | 0.77 | 1.33 | 0.36 | 0.09 | 1.46 | 0.231114 | 0.86717  |
| DNA | MSH3 | rs26279    | 0.289 | 0.6363 | 1.00 | 0.78 | 1.29 | 1.00 | 0.65 | 1.54 | 0.999465 | 0.999465 |
| DNA | MSH3 | rs6151665  | 0.091 | 0.6658 | 1.22 | 0.91 | 1.64 | 1.52 | 0.47 | 4.97 | 0.340919 | 0.954586 |
| DNA | MSH3 | rs6151627  | 0.288 | 0.6993 | 1.07 | 0.83 | 1.38 | 0.90 | 0.56 | 1.43 | 0.721547 | 0.991798 |
| DNA | MSH3 | rs6151735  | 0.101 | 0.8143 | 0.81 | 0.58 | 1.13 | 1.11 | 0.27 | 4.63 | 0.441839 | 0.991798 |
| DNA | MSH6 | rs3136329  | 0.431 | 0.2648 | 1.06 | 0.80 | 1.39 | 1.18 | 0.84 | 1.66 | 0.621928 | 0.991798 |
| DNA | MSH6 | rs1800936  | 0.144 | 0.6285 | 1.00 | 0.76 | 1.32 | 0.94 | 0.34 | 2.60 | 0.99389  | 0.999465 |
| DNA | MSH6 | rs2348244  | 0.151 | 0.6388 | 1.11 | 0.84 | 1.47 | 0.85 | 0.31 | 2.32 | 0.710853 | 0.991798 |
| DNA | MSH6 | rs2072447  | 0.258 | 0.8408 | 1.09 | 0.84 | 1.40 | 1.22 | 0.77 | 1.93 | 0.633573 | 0.991798 |
| DNA | MSH6 | rs3136326  | 0.130 | 0.8629 | 1.06 | 0.80 | 1.41 | 1.01 | 0.37 | 2.77 | 0.920009 | 0.991798 |
| DNA | MSH6 | rs3136279  | 0.190 | 0.8906 | 0.69 | 0.52 | 0.91 | 1.18 | 0.57 | 2.43 | 0.021635 | 0.728251 |
| DNA | MSH6 | rs3136245  | 0.183 | 0.8952 | 0.98 | 0.75 | 1.28 | 1.43 | 0.77 | 2.64 | 0.540043 | 0.991798 |
| DNA | MSH6 | rs2020911  | 0.370 | 0.9313 | 0.96 | 0.74 | 1.24 | 0.78 | 0.52 | 1.18 | 0.491024 | 0.991798 |
| DNA | MSH6 | rs1800935  | 0.320 | 1.0000 | 0.82 | 0.63 | 1.05 | 0.86 | 0.55 | 1.35 | 0.272366 | 0.892118 |
| DNA | OGG1 | rs2072668  | 0.219 | 0.4962 | 1.00 | 0.77 | 1.29 | 1.94 | 1.19 | 3.16 | 0.043523 | 0.728251 |
| DNA | OGG1 | rs159154   | 0.298 | 0.7012 | 0.82 | 0.64 | 1.06 | 0.86 | 0.53 | 1.38 | 0.300042 | 0.902181 |
| DNA | OGG1 | rs2269112  | 0.162 | 0.7753 | 1.29 | 0.98 | 1.69 | 1.49 | 0.68 | 3.25 | 0.153083 | 0.739567 |

|     |       |            |       |        |      |      |      |      |      |      |          |          |
|-----|-------|------------|-------|--------|------|------|------|------|------|------|----------|----------|
| DNA | PARP  | rs11842915 | 0.151 | 0.0362 | 1.28 | 0.98 | 1.67 | 0.98 | 0.56 | 1.71 | 0.197737 | 0.834678 |
| DNA | PARP  | rs7984513  | 0.408 | 0.1245 | 1.16 | 0.88 | 1.53 | 1.04 | 0.74 | 1.46 | 0.522192 | 0.991798 |
| DNA | PARP  | rs7988810  | 0.336 | 0.1979 | 1.16 | 0.89 | 1.50 | 1.08 | 0.75 | 1.54 | 0.54886  | 0.991798 |
| DNA | PARP  | rs9507355  | 0.466 | 0.2366 | 0.94 | 0.71 | 1.24 | 0.90 | 0.65 | 1.26 | 0.826252 | 0.991798 |
| DNA | PARP  | rs9578747  | 0.115 | 0.4211 | 1.15 | 0.85 | 1.56 | 0.14 | 0.02 | 1.05 | 0.014859 | 0.728251 |
| DNA | PARP  | rs2275660  | 0.232 | 0.4291 | 1.06 | 0.82 | 1.38 | 0.57 | 0.31 | 1.05 | 0.110211 | 0.728251 |
| DNA | PARP  | rs2282410  | 0.382 | 0.5588 | 1.03 | 0.79 | 1.33 | 1.11 | 0.77 | 1.59 | 0.864073 | 0.991798 |
| DNA | PARP  | rs750391   | 0.351 | 0.6055 | 1.02 | 0.79 | 1.32 | 1.37 | 0.95 | 1.96 | 0.242384 | 0.87406  |
| DNA | PARP  | rs9511308  | 0.246 | 0.6759 | 1.18 | 0.92 | 1.52 | 1.21 | 0.75 | 1.94 | 0.387533 | 0.991798 |
| DNA | PARP  | rs1807271  | 0.251 | 0.7460 | 0.83 | 0.64 | 1.08 | 0.74 | 0.43 | 1.27 | 0.264357 | 0.8859   |
| DNA | PARP  | rs9581094  | 0.149 | 1.0000 | 1.20 | 0.92 | 1.58 | 0.40 | 0.12 | 1.28 | 0.063021 | 0.728251 |
| DNA | PARP  | rs7140044  | 0.185 | 1.0000 | 1.05 | 0.80 | 1.36 | 0.47 | 0.21 | 1.05 | 0.105334 | 0.728251 |
| DNA | PCNA  | rs3730428  | 0.111 | 0.8382 | 1.12 | 0.82 | 1.53 | 0.83 | 0.30 | 2.27 | 0.728375 | 0.991798 |
| DNA | POLB  | rs3136781  | 0.086 | 0.3787 | 1.36 | 1.01 | 1.83 | 1.29 | 0.41 | 4.09 | 0.134163 | 0.730689 |
| DNA | RAD50 | rs2237060  | 0.382 | 0.1393 | 1.05 | 0.81 | 1.38 | 1.11 | 0.76 | 1.62 | 0.854345 | 0.991798 |
| DNA | RAD50 | rs2246176  | 0.257 | 0.3282 | 0.80 | 0.61 | 1.03 | 0.90 | 0.51 | 1.59 | 0.216843 | 0.857605 |
| DNA | RAD50 | rs17772583 | 0.232 | 0.5189 | 1.00 | 0.78 | 1.29 | 1.10 | 0.65 | 1.86 | 0.938414 | 0.995958 |
| DNA | RAD51 | rs11855560 | 0.497 | 0.0007 | 0.85 | 0.65 | 1.12 | 0.87 | 0.63 | 1.21 | 0.495583 | 0.991798 |
| DNA | RAD51 | rs2619681  | 0.153 | 0.8813 | 0.95 | 0.72 | 1.26 | 2.01 | 1.05 | 3.84 | 0.137293 | 0.730689 |
| DNA | RAD51 | rs3092981  | 0.101 | 1.0000 | 1.23 | 0.93 | 1.63 | 1.22 | 0.30 | 4.98 | 0.363681 | 0.961006 |
| DNA | RAD52 | rs6413436  | 0.376 | 0.0173 | 1.33 | 1.01 | 1.75 | 1.43 | 0.98 | 2.07 | 0.073417 | 0.728251 |
| DNA | RAD52 | rs12827646 | 0.151 | 0.1163 | 1.07 | 0.80 | 1.42 | 1.08 | 0.47 | 2.45 | 0.895008 | 0.991798 |
| DNA | RAD52 | rs7307680  | 0.189 | 0.1875 | 1.11 | 0.85 | 1.45 | 1.00 | 0.51 | 1.96 | 0.753067 | 0.991798 |
| DNA | RAD52 | rs9634161  | 0.141 | 0.3190 | 1.09 | 0.82 | 1.45 | 0.53 | 0.22 | 1.33 | 0.259982 | 0.884581 |
| DNA | RAD52 | rs10744729 | 0.432 | 0.3402 | 1.30 | 0.97 | 1.73 | 1.27 | 0.89 | 1.80 | 0.177897 | 0.788856 |
| DNA | RAD52 | rs1051669  | 0.270 | 0.6837 | 0.80 | 0.62 | 1.03 | 0.81 | 0.51 | 1.29 | 0.194899 | 0.830685 |
| DNA | RAD52 | rs11064607 | 0.476 | 0.8134 | 0.93 | 0.69 | 1.23 | 0.95 | 0.68 | 1.33 | 0.870325 | 0.991798 |
| DNA | RAD52 | rs3748522  | 0.459 | 0.8735 | 0.98 | 0.75 | 1.28 | 0.97 | 0.68 | 1.38 | 0.982551 | 0.998602 |
| DNA | RAD52 | rs7311151  | 0.408 | 0.9348 | 1.09 | 0.84 | 1.42 | 1.05 | 0.72 | 1.51 | 0.812897 | 0.991798 |
| DNA | RAD52 | rs7962050  | 0.427 | 0.9353 | 0.88 | 0.67 | 1.14 | 0.80 | 0.56 | 1.15 | 0.414075 | 0.991798 |
| DNA | RRM1  | rs2268166  | 0.049 | 0.1515 | 0.75 | 0.47 | 1.19 | 0.93 | 0.22 | 3.86 | 0.439773 | 0.991798 |
| DNA | RRM1  | rs232045   | 0.043 | 0.2736 | 0.91 | 0.56 | 1.48 | 0.92 | 0.13 | 6.64 | 0.924186 | 0.991798 |
| DNA | RRM1  | rs12806698 | 0.260 | 0.8410 | 1.06 | 0.82 | 1.36 | 0.95 | 0.59 | 1.52 | 0.858057 | 0.991798 |
| DNA | RRM1  | rs232054   | 0.458 | 0.8742 | 1.01 | 0.76 | 1.33 | 0.88 | 0.63 | 1.24 | 0.688905 | 0.991798 |
| DNA | RRM1  | rs2284449  | 0.022 | 1.0000 | 0.85 | 0.42 | 1.75 | NA   | NA   | NA   | 0.659379 | 0.991798 |
| DNA | RRM1  | rs1662162  | 0.073 | 1.0000 | 0.95 | 0.65 | 1.39 | 1.03 | 0.25 | 4.27 | 0.963184 | 0.998602 |
| DNA | XPA   | rs2805835  | 0.090 | 0.2210 | 1.08 | 0.78 | 1.49 | 0.63 | 0.15 | 2.58 | 0.693081 | 0.991798 |
| DNA | XPA   | rs1800975  | 0.321 | 0.6616 | 1.09 | 0.84 | 1.42 | 1.21 | 0.83 | 1.76 | 0.585354 | 0.991798 |
| DNA | XPA   | rs3176639  | 0.322 | 0.7167 | 0.80 | 0.61 | 1.03 | 0.94 | 0.64 | 1.40 | 0.219379 | 0.859889 |
| DNA | XPA   | rs3176683  | 0.075 | 1.0000 | 0.99 | 0.69 | 1.43 | 0.86 | 0.12 | 6.30 | 0.987315 | 0.998602 |
| DNA | XPA   | rs3176658  | 0.130 | 1.0000 | 0.99 | 0.75 | 1.32 | 1.01 | 0.41 | 2.50 | 0.998989 | 0.999465 |
| DNA | XPC   | rs2607734  | 0.431 | 0.4668 | 0.92 | 0.71 | 1.20 | 0.86 | 0.61 | 1.23 | 0.688581 | 0.991798 |
| DNA | XPC   | rs2228000  | 0.247 | 0.4696 | 1.23 | 0.96 | 1.58 | 0.83 | 0.50 | 1.37 | 0.142063 | 0.733715 |
| DNA | XPC   | rs3731081  | 0.219 | 0.4884 | 0.94 | 0.72 | 1.23 | 1.07 | 0.65 | 1.78 | 0.853839 | 0.991798 |
| DNA | XPC   | rs2733537  | 0.318 | 0.6008 | 1.31 | 1.01 | 1.70 | 1.15 | 0.78 | 1.69 | 0.116403 | 0.728251 |
| DNA | XPC   | rs1124303  | 0.060 | 0.7363 | 1.09 | 0.76 | 1.58 | 0.50 | 0.12 | 2.16 | 0.52402  | 0.991798 |
| DNA | XPC   | rs2470353  | 0.458 | 0.8131 | 1.09 | 0.82 | 1.46 | 1.21 | 0.86 | 1.68 | 0.545724 | 0.991798 |
| DNA | XRCC1 | rs3213263  | 0.446 | 0.0295 | 0.89 | 0.67 | 1.18 | 0.97 | 0.66 | 1.40 | 0.688279 | 0.991798 |

|     |       |            |       |        |      |      |      |      |      |      |          |          |
|-----|-------|------------|-------|--------|------|------|------|------|------|------|----------|----------|
| DNA | XRCC1 | rs3213266  | 0.072 | 0.0986 | 1.00 | 0.71 | 1.41 | 1.33 | 0.48 | 3.69 | 0.868561 | 0.991798 |
| DNA | XRCC1 | rs2854510  | 0.209 | 0.3364 | 0.96 | 0.74 | 1.23 | 0.70 | 0.36 | 1.38 | 0.546373 | 0.991798 |
| DNA | XRCC1 | rs2854506  | 0.236 | 0.5859 | 0.97 | 0.75 | 1.25 | 1.40 | 0.81 | 2.41 | 0.469668 | 0.991798 |
| DNA | XRCC1 | rs1001581  | 0.397 | 0.7407 | 0.94 | 0.73 | 1.23 | 0.88 | 0.60 | 1.30 | 0.795359 | 0.991798 |
| GSH | ABCC1 | rs3887893  | 0.425 | 0.0612 | 0.88 | 0.67 | 1.14 | 0.66 | 0.43 | 0.99 | 0.120131 | 0.728251 |
| GSH | ABCC1 | rs215100   | 0.282 | 0.0845 | 1.22 | 0.95 | 1.58 | 0.95 | 0.63 | 1.44 | 0.246251 | 0.878896 |
| GSH | ABCC1 | rs2239330  | 0.273 | 0.1121 | 0.86 | 0.67 | 1.12 | 0.79 | 0.51 | 1.23 | 0.401057 | 0.991798 |
| GSH | ABCC1 | rs212082   | 0.188 | 0.1194 | 1.08 | 0.83 | 1.42 | 0.93 | 0.51 | 1.68 | 0.80822  | 0.991798 |
| GSH | ABCC1 | rs11864374 | 0.260 | 0.1618 | 0.77 | 0.59 | 1.00 | 0.91 | 0.54 | 1.52 | 0.139813 | 0.730689 |
| GSH | ABCC1 | rs182482   | 0.271 | 0.1973 | 1.27 | 0.98 | 1.63 | 0.99 | 0.63 | 1.55 | 0.168294 | 0.76805  |
| GSH | ABCC1 | rs12924212 | 0.397 | 0.2832 | 1.06 | 0.82 | 1.37 | 1.01 | 0.68 | 1.48 | 0.906358 | 0.991798 |
| GSH | ABCC1 | rs11075295 | 0.163 | 0.2886 | 0.89 | 0.66 | 1.19 | 0.87 | 0.42 | 1.81 | 0.685386 | 0.991798 |
| GSH | ABCC1 | rs2299670  | 0.336 | 0.3294 | 0.98 | 0.76 | 1.26 | 0.80 | 0.51 | 1.27 | 0.615363 | 0.991798 |
| GSH | ABCC1 | rs2074085  | 0.106 | 0.3787 | 0.84 | 0.60 | 1.17 | 0.95 | 0.30 | 3.02 | 0.576447 | 0.991798 |
| GSH | ABCC1 | rs17501331 | 0.118 | 0.4388 | 1.09 | 0.80 | 1.47 | 1.47 | 0.47 | 4.65 | 0.723567 | 0.991798 |
| GSH | ABCC1 | rs17287570 | 0.189 | 0.6353 | 1.26 | 0.97 | 1.62 | 1.44 | 0.82 | 2.53 | 0.137453 | 0.730689 |
| GSH | ABCC1 | rs152028   | 0.285 | 0.7027 | 1.17 | 0.92 | 1.51 | 1.03 | 0.65 | 1.62 | 0.438619 | 0.991798 |
| GSH | ABCC1 | rs212087   | 0.437 | 0.7488 | 1.07 | 0.81 | 1.40 | 0.89 | 0.62 | 1.27 | 0.535216 | 0.991798 |
| GSH | ABCC1 | rs4780589  | 0.300 | 0.8503 | 1.06 | 0.82 | 1.37 | 0.80 | 0.51 | 1.27 | 0.474116 | 0.991798 |
| GSH | ABCC1 | rs215101   | 0.121 | 0.8507 | 0.96 | 0.72 | 1.28 | 1.03 | 0.32 | 3.30 | 0.958715 | 0.998599 |
| GSH | ABCC1 | rs246217   | 0.110 | 0.8509 | 1.05 | 0.79 | 1.39 | 1.35 | 0.55 | 3.32 | 0.789779 | 0.991798 |
| GSH | ABCC1 | rs246221   | 0.289 | 0.8513 | 1.18 | 0.92 | 1.52 | 1.20 | 0.80 | 1.81 | 0.373645 | 0.97637  |
| GSH | ABCC1 | rs152023   | 0.304 | 0.8540 | 1.14 | 0.88 | 1.47 | 1.12 | 0.73 | 1.71 | 0.595619 | 0.991798 |
| GSH | ABCC1 | rs246230   | 0.133 | 0.8695 | 1.18 | 0.90 | 1.55 | 0.96 | 0.39 | 2.34 | 0.496949 | 0.991798 |
| GSH | ABCC1 | rs152022   | 0.188 | 0.9004 | 1.15 | 0.89 | 1.49 | 1.10 | 0.59 | 2.05 | 0.579111 | 0.991798 |
| GSH | ABCC1 | rs2889517  | 0.292 | 0.9243 | 1.13 | 0.88 | 1.45 | 0.82 | 0.50 | 1.34 | 0.362289 | 0.961006 |
| GSH | ABCC1 | rs1967120  | 0.300 | 0.9248 | 1.03 | 0.80 | 1.32 | 0.87 | 0.55 | 1.37 | 0.762672 | 0.991798 |
| GSH | ABCC1 | rs4148350  | 0.050 | 1.0000 | 1.24 | 0.86 | 1.78 | 0.77 | 0.10 | 5.70 | 0.519622 | 0.991798 |
| GSH | ABCC1 | rs4781701  | 0.193 | 1.0000 | 0.95 | 0.72 | 1.24 | 0.70 | 0.35 | 1.38 | 0.541167 | 0.991798 |
| GSH | ABCC1 | rs3784867  | 0.208 | 1.0000 | 0.88 | 0.67 | 1.14 | 0.49 | 0.20 | 1.21 | 0.167099 | 0.76805  |
| GSH | ABCC1 | rs16967755 | 0.213 | 1.0000 | 1.12 | 0.86 | 1.44 | 0.90 | 0.51 | 1.60 | 0.622883 | 0.991798 |
| GSH | ABCC1 | rs212081   | 0.346 | 1.0000 | 0.97 | 0.75 | 1.26 | 1.23 | 0.86 | 1.77 | 0.427518 | 0.991798 |
| GSH | ABCC2 | rs3758395  | 0.058 | 0.0502 | 1.18 | 0.79 | 1.78 | 0.97 | 0.23 | 4.07 | 0.725723 | 0.991798 |
| GSH | ABCC2 | rs2756105  | 0.432 | 0.0519 | 0.93 | 0.71 | 1.21 | 0.90 | 0.60 | 1.34 | 0.809952 | 0.991798 |
| GSH | ABCC2 | rs4148398  | 0.349 | 0.0825 | 1.04 | 0.80 | 1.34 | 0.97 | 0.63 | 1.49 | 0.930799 | 0.991798 |
| GSH | ABCC2 | rs717620   | 0.193 | 0.1098 | 1.15 | 0.89 | 1.47 | 1.04 | 0.49 | 2.23 | 0.567166 | 0.991798 |
| GSH | ABCC2 | rs3740065  | 0.118 | 0.1498 | 0.85 | 0.61 | 1.19 | 1.30 | 0.52 | 3.27 | 0.520599 | 0.991798 |
| GSH | ABCC2 | rs3740064  | 0.046 | 0.1748 | 0.99 | 0.65 | 1.51 | 2.34 | 0.56 | 9.82 | 0.588299 | 0.991798 |
| GSH | ABCC2 | rs2756109  | 0.439 | 0.3787 | 1.06 | 0.81 | 1.39 | 0.99 | 0.68 | 1.43 | 0.879592 | 0.991798 |
| GSH | ABCC2 | rs7476245  | 0.057 | 0.4574 | 0.99 | 0.66 | 1.46 | 2.33 | 0.55 | 9.82 | 0.587382 | 0.991798 |
| GSH | ABCC2 | rs11190291 | 0.200 | 0.6331 | 1.00 | 0.77 | 1.30 | 0.72 | 0.40 | 1.28 | 0.491675 | 0.991798 |
| GSH | ABCC2 | rs11597282 | 0.030 | 1.0000 | 1.08 | 0.70 | 1.67 | NA   | NA   | NA   | 0.737613 | 0.991798 |
| GSH | ABCC2 | rs2804397  | 0.054 | 1.0000 | 0.56 | 0.32 | 0.96 | 0.00 | 0.00 | Inf  | 0.06269  | 0.728251 |
| GSH | ABCC3 | rs8075406  | 0.334 | 0.0983 | 0.94 | 0.72 | 1.22 | 1.27 | 0.89 | 1.81 | 0.280533 | 0.892118 |
| GSH | ABCC3 | rs3785911  | 0.288 | 0.1308 | 1.12 | 0.87 | 1.45 | 1.17 | 0.78 | 1.75 | 0.584878 | 0.991798 |
| GSH | ABCC3 | rs17562516 | 0.293 | 0.2085 | 1.04 | 0.80 | 1.33 | 1.23 | 0.76 | 1.97 | 0.70859  | 0.991798 |
| GSH | ABCC3 | rs739923   | 0.257 | 0.3514 | 1.05 | 0.82 | 1.35 | 1.07 | 0.62 | 1.86 | 0.919223 | 0.991798 |
| GSH | ABCC3 | rs2277624  | 0.227 | 0.6500 | 0.97 | 0.74 | 1.26 | 0.92 | 0.54 | 1.57 | 0.928687 | 0.991798 |

|     |       |            |       |        |      |      |      |      |      |      |          |          |
|-----|-------|------------|-------|--------|------|------|------|------|------|------|----------|----------|
| GSH | ABCC3 | rs4794173  | 0.292 | 0.6995 | 1.02 | 0.79 | 1.31 | 0.82 | 0.50 | 1.33 | 0.665901 | 0.991798 |
| GSH | ABCC3 | rs1051640  | 0.189 | 0.7001 | 0.99 | 0.76 | 1.29 | 1.22 | 0.64 | 2.33 | 0.825987 | 0.991798 |
| GSH | ABCC3 | rs1541392  | 0.151 | 0.7342 | 0.75 | 0.56 | 1.02 | 0.15 | 0.02 | 1.06 | 0.00536  | 0.684387 |
| GSH | ABCC3 | rs1978153  | 0.410 | 0.7429 | 0.94 | 0.72 | 1.22 | 1.05 | 0.73 | 1.52 | 0.777754 | 0.991798 |
| GSH | ABCC3 | rs2412333  | 0.245 | 0.8397 | 1.17 | 0.91 | 1.51 | 1.58 | 1.02 | 2.46 | 0.105455 | 0.728251 |
| GSH | ABCC3 | rs733392   | 0.269 | 0.8415 | 1.00 | 0.78 | 1.29 | 1.16 | 0.72 | 1.88 | 0.83234  | 0.991798 |
| GSH | ABCC3 | rs879459   | 0.152 | 0.8785 | 0.97 | 0.73 | 1.28 | 1.25 | 0.58 | 2.69 | 0.823436 | 0.991798 |
| GSH | ABCC3 | rs4148412  | 0.359 | 1.0000 | 1.02 | 0.78 | 1.32 | 1.09 | 0.75 | 1.58 | 0.900003 | 0.991798 |
| GSH | ABCC3 | rs739922   | 0.423 | 1.0000 | 0.77 | 0.59 | 1.01 | 0.86 | 0.60 | 1.23 | 0.162335 | 0.758139 |
| GSH | ABCC4 | rs1189470  | 0.195 | 0.0030 | 0.89 | 0.67 | 1.17 | 1.02 | 0.61 | 1.70 | 0.683817 | 0.991798 |
| GSH | ABCC4 | rs4773867  | 0.120 | 0.0331 | 1.04 | 0.78 | 1.39 | 0.50 | 0.07 | 3.63 | 0.712539 | 0.991798 |
| GSH | ABCC4 | rs9524885  | 0.063 | 0.0365 | 1.03 | 0.67 | 1.59 | 0.71 | 0.10 | 5.13 | 0.926493 | 0.991798 |
| GSH | ABCC4 | rs2274405  | 0.313 | 0.0537 | 0.84 | 0.65 | 1.09 | 0.95 | 0.62 | 1.46 | 0.410116 | 0.991798 |
| GSH | ABCC4 | rs7330673  | 0.207 | 0.0783 | 0.88 | 0.67 | 1.15 | 0.89 | 0.48 | 1.65 | 0.601721 | 0.991798 |
| GSH | ABCC4 | rs871052   | 0.406 | 0.1197 | 1.01 | 0.77 | 1.31 | 0.92 | 0.64 | 1.33 | 0.887007 | 0.991798 |
| GSH | ABCC4 | rs9516530  | 0.299 | 0.1249 | 0.91 | 0.71 | 1.17 | 0.98 | 0.63 | 1.52 | 0.770991 | 0.991798 |
| GSH | ABCC4 | rs4636781  | 0.170 | 0.1263 | 0.86 | 0.66 | 1.12 | 1.04 | 0.48 | 2.26 | 0.533487 | 0.991798 |
| GSH | ABCC4 | rs1678374  | 0.368 | 0.1288 | 0.98 | 0.75 | 1.27 | 0.96 | 0.67 | 1.38 | 0.970463 | 0.998602 |
| GSH | ABCC4 | rs6492768  | 0.250 | 0.1352 | 0.75 | 0.58 | 0.97 | 0.74 | 0.42 | 1.29 | 0.066322 | 0.728251 |
| GSH | ABCC4 | rs10508023 | 0.128 | 0.1413 | 0.97 | 0.70 | 1.33 | 1.14 | 0.56 | 2.33 | 0.916856 | 0.991798 |
| GSH | ABCC4 | rs4773856  | 0.247 | 0.1463 | 1.02 | 0.80 | 1.32 | 0.93 | 0.58 | 1.49 | 0.921536 | 0.991798 |
| GSH | ABCC4 | rs9561784  | 0.240 | 0.1518 | 0.72 | 0.56 | 0.93 | 1.01 | 0.59 | 1.74 | 0.03573  | 0.728251 |
| GSH | ABCC4 | rs4148527  | 0.186 | 0.1565 | 1.05 | 0.81 | 1.36 | 1.32 | 0.68 | 2.56 | 0.701093 | 0.991798 |
| GSH | ABCC4 | rs4148446  | 0.409 | 0.1661 | 0.90 | 0.69 | 1.18 | 1.00 | 0.70 | 1.44 | 0.714775 | 0.991798 |
| GSH | ABCC4 | rs4148434  | 0.353 | 0.2314 | 0.98 | 0.75 | 1.28 | 1.17 | 0.82 | 1.68 | 0.616052 | 0.991798 |
| GSH | ABCC4 | rs4773844  | 0.213 | 0.2824 | 0.78 | 0.60 | 1.02 | 1.60 | 0.92 | 2.78 | 0.033167 | 0.728251 |
| GSH | ABCC4 | rs9524822  | 0.186 | 0.2941 | 0.99 | 0.76 | 1.30 | 1.22 | 0.65 | 2.26 | 0.830012 | 0.991798 |
| GSH | ABCC4 | rs9590216  | 0.168 | 0.3117 | 0.87 | 0.66 | 1.14 | 0.61 | 0.29 | 1.30 | 0.261867 | 0.884581 |
| GSH | ABCC4 | rs17189561 | 0.162 | 0.3173 | 1.07 | 0.82 | 1.41 | 1.22 | 0.64 | 2.33 | 0.765956 | 0.991798 |
| GSH | ABCC4 | rs2892713  | 0.147 | 0.3392 | 0.75 | 0.57 | 1.00 | 1.25 | 0.58 | 2.73 | 0.104852 | 0.728251 |
| GSH | ABCC4 | rs943288   | 0.145 | 0.3393 | 0.82 | 0.62 | 1.08 | 1.24 | 0.54 | 2.88 | 0.289892 | 0.892118 |
| GSH | ABCC4 | rs9634642  | 0.452 | 0.3413 | 0.91 | 0.68 | 1.20 | 0.88 | 0.62 | 1.24 | 0.712643 | 0.991798 |
| GSH | ABCC4 | rs4283094  | 0.496 | 0.3461 | 0.93 | 0.69 | 1.26 | 0.95 | 0.67 | 1.34 | 0.908009 | 0.991798 |
| GSH | ABCC4 | rs2487566  | 0.503 | 0.3870 | 1.07 | 0.80 | 1.43 | 1.05 | 0.75 | 1.48 | 0.890798 | 0.991798 |
| GSH | ABCC4 | rs9524858  | 0.364 | 0.3942 | 1.06 | 0.82 | 1.37 | 1.05 | 0.70 | 1.58 | 0.908982 | 0.991798 |
| GSH | ABCC4 | rs6492763  | 0.405 | 0.4099 | 1.13 | 0.87 | 1.47 | 1.05 | 0.72 | 1.54 | 0.634821 | 0.991798 |
| GSH | ABCC4 | rs1729786  | 0.383 | 0.4662 | 1.42 | 1.08 | 1.88 | 1.94 | 1.36 | 2.77 | 0.000925 | 0.2031   |
| GSH | ABCC4 | rs9561797  | 0.317 | 0.4679 | 1.20 | 0.93 | 1.54 | 1.35 | 0.90 | 2.03 | 0.216291 | 0.857605 |
| GSH | ABCC4 | rs1189465  | 0.427 | 0.4714 | 1.17 | 0.89 | 1.54 | 1.06 | 0.74 | 1.52 | 0.519094 | 0.991798 |
| GSH | ABCC4 | rs1729770  | 0.260 | 0.4816 | 1.23 | 0.96 | 1.57 | 0.83 | 0.49 | 1.42 | 0.154288 | 0.739567 |
| GSH | ABCC4 | rs2274403  | 0.469 | 0.5280 | 0.78 | 0.59 | 1.03 | 0.99 | 0.71 | 1.37 | 0.12797  | 0.729368 |
| GSH | ABCC4 | rs2182262  | 0.159 | 0.5420 | 0.92 | 0.69 | 1.22 | 1.31 | 0.60 | 2.83 | 0.65618  | 0.991798 |
| GSH | ABCC4 | rs17268066 | 0.137 | 0.5454 | 1.20 | 0.92 | 1.58 | 1.90 | 0.96 | 3.77 | 0.127454 | 0.729368 |
| GSH | ABCC4 | rs870004   | 0.177 | 0.5681 | 0.78 | 0.60 | 1.03 | 0.63 | 0.26 | 1.55 | 0.139182 | 0.730689 |
| GSH | ABCC4 | rs1189457  | 0.395 | 0.6839 | 0.90 | 0.69 | 1.18 | 1.08 | 0.76 | 1.53 | 0.531409 | 0.991798 |
| GSH | ABCC4 | rs1189428  | 0.473 | 0.6933 | 1.10 | 0.82 | 1.47 | 1.17 | 0.83 | 1.64 | 0.652388 | 0.991798 |
| GSH | ABCC4 | rs1189446  | 0.202 | 0.6952 | 1.03 | 0.79 | 1.34 | 0.62 | 0.27 | 1.41 | 0.443019 | 0.991798 |
| GSH | ABCC4 | rs4148482  | 0.318 | 0.7136 | 0.89 | 0.69 | 1.14 | 1.14 | 0.76 | 1.73 | 0.428798 | 0.991798 |

|     |       |            |       |        |      |      |      |      |      |      |          |          |
|-----|-------|------------|-------|--------|------|------|------|------|------|------|----------|----------|
| GSH | ABCC4 | rs11568643 | 0.101 | 0.7953 | 0.94 | 0.65 | 1.35 | 0.00 | 0.00 | Inf  | 0.129119 | 0.729368 |
| GSH | ABCC4 | rs2892716  | 0.356 | 0.7954 | 0.88 | 0.68 | 1.14 | 0.90 | 0.62 | 1.32 | 0.610045 | 0.991798 |
| GSH | ABCC4 | rs1564351  | 0.088 | 0.8077 | 1.04 | 0.75 | 1.44 | 1.71 | 0.41 | 7.08 | 0.777974 | 0.991798 |
| GSH | ABCC4 | rs3742106  | 0.417 | 0.8695 | 0.96 | 0.74 | 1.24 | 1.00 | 0.68 | 1.46 | 0.948999 | 0.998599 |
| GSH | ABCC4 | rs1729741  | 0.129 | 0.8720 | 1.28 | 0.97 | 1.68 | 1.04 | 0.42 | 2.60 | 0.224919 | 0.863951 |
| GSH | ABCC4 | rs10508017 | 0.458 | 0.8744 | 1.06 | 0.80 | 1.40 | 1.01 | 0.72 | 1.41 | 0.913289 | 0.991798 |
| GSH | ABCC4 | rs1750190  | 0.469 | 0.8746 | 1.20 | 0.91 | 1.59 | 0.91 | 0.64 | 1.29 | 0.169706 | 0.76805  |
| GSH | ABCC4 | rs1751022  | 0.202 | 0.9059 | 0.91 | 0.70 | 1.18 | 0.94 | 0.54 | 1.64 | 0.761094 | 0.991798 |
| GSH | ABCC4 | rs4148424  | 0.242 | 0.9085 | 0.80 | 0.62 | 1.04 | 0.78 | 0.40 | 1.54 | 0.211968 | 0.857605 |
| GSH | ABCC4 | rs17268122 | 0.216 | 0.9097 | 0.95 | 0.74 | 1.24 | 1.33 | 0.79 | 2.25 | 0.507676 | 0.991798 |
| GSH | ABCC4 | rs7324283  | 0.351 | 0.9290 | 0.91 | 0.71 | 1.17 | 1.04 | 0.67 | 1.60 | 0.715441 | 0.991798 |
| GSH | ABCC4 | rs2766482  | 0.380 | 0.9342 | 0.97 | 0.74 | 1.26 | 0.92 | 0.64 | 1.33 | 0.907908 | 0.991798 |
| GSH | ABCC4 | rs11568658 | 0.030 | 1.0000 | 1.16 | 0.75 | 1.80 | NA   | NA   | NA   | 0.518401 | 0.991798 |
| GSH | ABCC4 | rs11568663 | 0.129 | 1.0000 | 1.02 | 0.77 | 1.36 | 1.50 | 0.47 | 4.78 | 0.806762 | 0.991798 |
| GSH | ABCC4 | rs7984157  | 0.141 | 1.0000 | 1.07 | 0.81 | 1.41 | 1.05 | 0.46 | 2.38 | 0.89476  | 0.991798 |
| GSH | ABCC4 | rs7993878  | 0.144 | 1.0000 | 1.03 | 0.77 | 1.38 | 0.91 | 0.37 | 2.25 | 0.951788 | 0.998599 |
| GSH | ABCC4 | rs1750996  | 0.154 | 1.0000 | 1.30 | 1.01 | 1.68 | 0.75 | 0.33 | 1.72 | 0.086771 | 0.728251 |
| GSH | ABCC4 | rs17189376 | 0.204 | 1.0000 | 1.11 | 0.86 | 1.44 | 1.41 | 0.79 | 2.50 | 0.430518 | 0.991798 |
| GSH | ABCC4 | rs4148535  | 0.207 | 1.0000 | 0.87 | 0.67 | 1.13 | 0.89 | 0.50 | 1.58 | 0.573456 | 0.991798 |
| GSH | ABCC4 | rs4148512  | 0.207 | 1.0000 | 1.04 | 0.80 | 1.35 | 1.01 | 0.57 | 1.79 | 0.957681 | 0.998599 |
| GSH | ABCC4 | rs9516546  | 0.292 | 1.0000 | 1.01 | 0.79 | 1.30 | 0.98 | 0.61 | 1.56 | 0.987931 | 0.998602 |
| GSH | ABCC4 | rs7330519  | 0.310 | 1.0000 | 1.10 | 0.86 | 1.41 | 0.91 | 0.55 | 1.51 | 0.62726  | 0.991798 |
| GSH | ABCC4 | rs1729775  | 0.397 | 1.0000 | 1.23 | 0.93 | 1.62 | 1.28 | 0.90 | 1.83 | 0.253863 | 0.88449  |
| GSH | ABCC4 | rs9524821  | 0.402 | 1.0000 | 0.96 | 0.73 | 1.25 | 1.16 | 0.81 | 1.64 | 0.544159 | 0.991798 |
| GSH | GCLC  | rs670548   | 0.345 | 0.0052 | 1.17 | 0.90 | 1.53 | 1.14 | 0.81 | 1.59 | 0.465713 | 0.991798 |
| GSH | GCLC  | rs642429   | 0.118 | 0.0868 | 1.39 | 1.05 | 1.84 | 0.87 | 0.38 | 2.00 | 0.071164 | 0.728251 |
| GSH | GCLC  | rs2100375  | 0.292 | 0.0992 | 1.14 | 0.88 | 1.47 | 0.92 | 0.58 | 1.46 | 0.507938 | 0.991798 |
| GSH | GCLC  | rs510088   | 0.330 | 0.1676 | 0.75 | 0.58 | 0.97 | 0.85 | 0.57 | 1.29 | 0.0904   | 0.728251 |
| GSH | GCLC  | rs600033   | 0.454 | 0.1787 | 1.14 | 0.86 | 1.50 | 1.18 | 0.84 | 1.66 | 0.549634 | 0.991798 |
| GSH | GCLC  | rs542914   | 0.353 | 0.1799 | 1.31 | 1.00 | 1.71 | 1.36 | 0.96 | 1.94 | 0.08509  | 0.728251 |
| GSH | GCLC  | rs12525474 | 0.133 | 0.2408 | 1.13 | 0.85 | 1.51 | 1.18 | 0.52 | 2.69 | 0.671062 | 0.991798 |
| GSH | GCLC  | rs574389   | 0.455 | 0.2668 | 1.16 | 0.88 | 1.54 | 1.15 | 0.82 | 1.62 | 0.530695 | 0.991798 |
| GSH | GCLC  | rs4712035  | 0.201 | 0.6152 | 1.01 | 0.78 | 1.32 | 0.73 | 0.37 | 1.44 | 0.613423 | 0.991798 |
| GSH | GCLC  | rs12664895 | 0.014 | 1.0000 | 1.52 | 0.80 | 2.90 | NA   | NA   | NA   | 0.22632  | 0.863951 |
| GSH | GCLC  | rs2268327  | 0.023 | 1.0000 | 1.09 | 0.60 | 1.97 | NA   | NA   | NA   | 0.787691 | 0.991798 |
| GSH | GCLC  | rs12524550 | 0.027 | 1.0000 | 1.28 | 0.78 | 2.08 | NA   | NA   | NA   | 0.343068 | 0.954586 |
| GSH | GCLC  | rs12524494 | 0.061 | 1.0000 | 0.89 | 0.57 | 1.39 | 0.00 | 0.00 | Inf  | 0.730822 | 0.991798 |
| GSH | GCLC  | rs606548   | 0.061 | 1.0000 | 0.90 | 0.58 | 1.40 | 0.00 | 0.00 | Inf  | 0.753758 | 0.991798 |
| GSH | GCLM  | rs2301022  | 0.306 | 0.0684 | 1.02 | 0.79 | 1.31 | 1.46 | 0.96 | 2.22 | 0.214014 | 0.857605 |
| GSH | GCLM  | rs7549683  | 0.364 | 0.9324 | 0.83 | 0.64 | 1.08 | 0.96 | 0.66 | 1.39 | 0.360589 | 0.961006 |
| GSH | GCLM  | rs769211   | 0.283 | 1.0000 | 0.81 | 0.63 | 1.05 | 1.04 | 0.67 | 1.62 | 0.225133 | 0.863951 |
| GSH | GPX1  | rs1050450  | 0.705 | 0.3368 | 1.06 | 0.66 | 1.70 | 1.19 | 0.75 | 1.89 | 0.607175 | 0.991798 |
| GSH | GPX2  | rs1800669  | 0.045 | 0.3213 | 0.80 | 0.51 | 1.25 | 0.00 | 0.00 | Inf  | 0.121115 | 0.728251 |
| GSH | GPX2  | rs2412065  | 0.174 | 1.0000 | 1.31 | 1.01 | 1.69 | 1.50 | 0.85 | 2.68 | 0.075952 | 0.728251 |
| GSH | GPX2  | rs2737844  | 0.260 | 1.0000 | 1.13 | 0.88 | 1.46 | 1.15 | 0.74 | 1.81 | 0.580066 | 0.991798 |
| GSH | GPX3  | rs3828599  | 0.250 | 0.0348 | 0.86 | 0.66 | 1.12 | 0.93 | 0.59 | 1.45 | 0.536219 | 0.991798 |
| GSH | GPX3  | rs870406   | 0.133 | 0.0994 | 0.85 | 0.63 | 1.14 | 0.87 | 0.21 | 3.60 | 0.538051 | 0.991798 |
| GSH | GPX3  | rs3805435  | 0.080 | 0.2139 | 1.03 | 0.75 | 1.42 | 1.27 | 0.17 | 9.34 | 0.953808 | 0.998599 |

|     |       |            |       |        |      |      |      |    |      |      |      |          |          |
|-----|-------|------------|-------|--------|------|------|------|----|------|------|------|----------|----------|
| GSH | GPX3  | rs8177447  | 0.162 | 0.3805 | 0.82 | 0.62 | 1.08 |    | 1.19 | 0.58 | 2.45 | 0.310152 | 0.919367 |
| GSH | GPX3  | rs3792796  | 0.380 | 0.8660 | 0.90 | 0.69 | 1.16 |    | 0.79 | 0.54 | 1.17 | 0.44986  | 0.991798 |
| GSH | GPX3  | rs8177425  | 0.025 | 1.0000 | 0.78 | 0.43 | 1.42 | NA | NA   |      | NA   | 0.400682 | 0.991798 |
| GSH | GPX5  | rs2064424  | 0.106 | 0.2009 | 0.88 | 0.64 | 1.22 |    | 1.19 | 0.43 | 3.25 | 0.693335 | 0.991798 |
| GSH | GPX5  | rs440481   | 0.174 | 0.8889 | 0.94 | 0.72 | 1.23 |    | 0.95 | 0.41 | 2.16 | 0.909691 | 0.991798 |
| GSH | GPX5  | rs445870   | 0.296 | 0.9250 | 1.01 | 0.79 | 1.30 |    | 0.96 | 0.60 | 1.55 | 0.975288 | 0.998602 |
| GSH | GPX6  | rs2078439  | 0.106 | 0.2009 | 0.93 | 0.68 | 1.29 |    | 1.20 | 0.44 | 3.29 | 0.853731 | 0.991798 |
| GSH | GPX6  | rs4713167  | 0.299 | 0.7085 | 1.07 | 0.84 | 1.38 |    | 0.99 | 0.61 | 1.59 | 0.842183 | 0.991798 |
| GSH | GPX6  | rs974334   | 0.175 | 1.0000 | 1.03 | 0.79 | 1.34 |    | 0.97 | 0.42 | 2.21 | 0.96843  | 0.998602 |
| GSH | GPX7  | rs1047635  | 0.484 | 0.5294 | 1.14 | 0.85 | 1.53 |    | 1.02 | 0.72 | 1.43 | 0.601944 | 0.991798 |
| GSH | GPX7  | rs3753753  | 0.295 | 0.8517 | 1.08 | 0.84 | 1.39 |    | 0.99 | 0.64 | 1.53 | 0.814853 | 0.991798 |
| GSH | GSR   | rs2978663  | 0.405 | 0.1871 | 0.99 | 0.77 | 1.29 |    | 0.88 | 0.58 | 1.35 | 0.829411 | 0.991798 |
| GSH | GSR   | rs2911670  | 0.060 | 0.2480 | 0.86 | 0.57 | 1.30 | NA | NA   |      | NA   | 0.459403 | 0.991798 |
| GSH | GSR   | rs8190996  | 0.414 | 0.2581 | 0.83 | 0.63 | 1.09 |    | 0.88 | 0.62 | 1.25 | 0.408094 | 0.991798 |
| GSH | GSR   | rs2978662  | 0.213 | 0.3164 | 0.83 | 0.63 | 1.08 |    | 1.41 | 0.74 | 2.71 | 0.193478 | 0.830685 |
| GSH | GSR   | rs2250192  | 0.247 | 0.5755 | 0.84 | 0.65 | 1.10 |    | 1.44 | 0.81 | 2.56 | 0.176304 | 0.788856 |
| GSH | GSR   | rs8190893  | 0.077 | 1.0000 | 0.86 | 0.61 | 1.23 |    | 0.71 | 0.10 | 5.11 | 0.670311 | 0.991798 |
| GSH | GSS   | rs6088659  | 0.159 | 0.2855 | 0.96 | 0.74 | 1.26 |    | 0.15 | 0.02 | 1.09 | 0.030495 | 0.728251 |
| GSH | GSS   | rs734111   | 0.376 | 0.5002 | 0.97 | 0.75 | 1.25 |    | 0.74 | 0.50 | 1.09 | 0.282424 | 0.892118 |
| GSH | GSS   | rs2025096  | 0.192 | 0.5274 | 1.08 | 0.83 | 1.39 |    | 0.97 | 0.48 | 1.99 | 0.844024 | 0.991798 |
| GSH | GSS   | rs7265992  | 0.175 | 0.5766 | 1.05 | 0.80 | 1.38 |    | 1.07 | 0.50 | 2.30 | 0.92401  | 0.991798 |
| GSH | GSS   | rs6060127  | 0.317 | 0.5871 | 1.21 | 0.94 | 1.55 |    | 1.01 | 0.65 | 1.55 | 0.317931 | 0.930478 |
| GSH | GSS   | rs2273684  | 0.448 | 0.6925 | 1.07 | 0.80 | 1.42 |    | 1.21 | 0.87 | 1.69 | 0.520792 | 0.991798 |
| GSH | GSS   | rs2236270  | 0.382 | 0.8683 | 1.13 | 0.87 | 1.48 |    | 1.01 | 0.69 | 1.49 | 0.609955 | 0.991798 |
| GSH | GSTA1 | rs10948723 | 0.431 | 0.8094 | 0.95 | 0.73 | 1.25 |    | 0.69 | 0.48 | 0.99 | 0.090928 | 0.728251 |
| GSH | GSTA1 | rs11969435 | 0.431 | 0.8094 | 0.95 | 0.73 | 1.25 |    | 0.69 | 0.48 | 0.99 | 0.090928 | 0.728251 |
| GSH | GSTA2 | rs6577     | 0.071 | 0.4574 | 0.64 | 0.41 | 1.00 |    | 0.00 | 0.00 | Inf  | 0.068413 | 0.728251 |
| GSH | GSTA2 | rs2180314  | 0.417 | 0.9350 | 0.91 | 0.70 | 1.18 |    | 0.69 | 0.47 | 0.99 | 0.120719 | 0.728251 |
| GSH | GSTA3 | rs557135   | 0.356 | 0.2612 | 1.12 | 0.87 | 1.44 |    | 0.95 | 0.64 | 1.40 | 0.575413 | 0.991798 |
| GSH | GSTA3 | rs512795   | 0.077 | 0.7881 | 1.34 | 0.95 | 1.88 |    | 0.99 | 0.14 | 7.27 | 0.261949 | 0.884581 |
| GSH | GSTA3 | rs11961374 | 0.015 | 1.0000 | 1.33 | 0.67 | 2.63 | NA | NA   |      | NA   | 0.429432 | 0.991798 |
| GSH | GSTA3 | rs9474339  | 0.026 | 1.0000 | 0.97 | 0.54 | 1.75 | NA | NA   |      | NA   | 0.923814 | 0.991798 |
| GSH | GSTA3 | rs614765   | 0.037 | 1.0000 | 1.42 | 0.90 | 2.24 | NA | NA   |      | NA   | 0.151482 | 0.739567 |
| GSH | GSTA4 | rs6904769  | 0.113 | 0.0331 | 0.89 | 0.67 | 1.19 |    | 1.21 | 0.17 | 8.77 | 0.710955 | 0.991798 |
| GSH | GSTA4 | rs405729   | 0.480 | 0.0336 | 1.23 | 0.92 | 1.66 |    | 1.16 | 0.81 | 1.67 | 0.376601 | 0.97827  |
| GSH | GSTA4 | rs17615213 | 0.082 | 0.5838 | 1.12 | 0.79 | 1.58 |    | 0.76 | 0.19 | 3.11 | 0.754464 | 0.991798 |
| GSH | GSTA4 | rs3756980  | 0.193 | 0.6203 | 0.99 | 0.76 | 1.29 |    | 1.69 | 0.98 | 2.94 | 0.202671 | 0.847357 |
| GSH | GSTA4 | rs3734431  | 0.098 | 0.8066 | 0.81 | 0.57 | 1.15 |    | 2.09 | 0.51 | 8.58 | 0.31204  | 0.919367 |
| GSH | GSTA4 | rs654144   | 0.092 | 0.8218 | 1.25 | 0.92 | 1.70 |    | 0.26 | 0.04 | 1.94 | 0.089249 | 0.728251 |
| GSH | GSTA4 | rs6904771  | 0.015 | 1.0000 | 0.66 | 0.29 | 1.50 | NA | NA   |      | NA   | 0.289197 | 0.892118 |
| GSH | GSTA4 | rs2274760  | 0.092 | 1.0000 | 1.35 | 1.01 | 1.80 |    | 2.28 | 0.90 | 5.74 | 0.049096 | 0.728251 |
| GSH | GSTA5 | rs4715352  | 0.174 | 0.5373 | 1.32 | 1.03 | 1.70 |    | 1.04 | 0.59 | 1.85 | 0.099427 | 0.728251 |
| GSH | GSTA5 | rs7755335  | 0.034 | 0.6201 | 1.28 | 0.86 | 1.91 | NA | NA   |      | NA   | 0.229708 | 0.86717  |
| GSH | GSTA5 | rs4715353  | 0.432 | 0.8094 | 0.94 | 0.72 | 1.24 |    | 0.70 | 0.49 | 1.01 | 0.122758 | 0.728251 |
| GSH | GSTA5 | rs7739421  | 0.069 | 1.0000 | 0.61 | 0.39 | 0.96 |    | 0.00 | 0.00 | NA   | 0.050837 | 0.728251 |
| GSH | GSTA5 | rs4715354  | 0.455 | 1.0000 | 1.42 | 1.05 | 1.91 |    | 1.58 | 1.12 | 2.23 | 0.018821 | 0.728251 |
| GSH | GSTM2 | rs673151   | 0.038 | 0.6322 | 1.25 | 0.85 | 1.84 | NA | NA   |      | NA   | 0.261135 | 0.884581 |
| GSH | GSTM3 | rs1332018  | 0.427 | 0.7465 | 1.32 | 1.00 | 1.75 |    | 1.07 | 0.75 | 1.54 | 0.111579 | 0.728251 |

|              |       |            |       |        |      |      |      |      |      |       |          |          |
|--------------|-------|------------|-------|--------|------|------|------|------|------|-------|----------|----------|
| GSH          | GSTM3 | rs2234696  | 0.071 | 0.7613 | 0.94 | 0.66 | 1.33 | 2.59 | 0.35 | 19.01 | 0.665808 | 0.991798 |
| GSH          | GSTM3 | rs7483     | 0.341 | 1.0000 | 1.06 | 0.83 | 1.36 | 0.52 | 0.32 | 0.85  | 0.007795 | 0.684387 |
| GSH          | GSTM4 | rs560018   | 0.380 | 0.4597 | 1.18 | 0.90 | 1.55 | 0.94 | 0.65 | 1.34  | 0.287752 | 0.892118 |
| GSH          | GSTM4 | rs12405275 | 0.068 | 0.7324 | 1.04 | 0.70 | 1.54 | 0.62 | 0.08 | 4.48  | 0.854641 | 0.991798 |
| GSH          | GSTM4 | rs650985   | 0.048 | 1.0000 | 0.83 | 0.55 | 1.25 | 2.49 | 0.32 | 19.40 | 0.473263 | 0.991798 |
| GSH          | GSTM4 | rs1010167  | 0.408 | 1.0000 | 1.09 | 0.85 | 1.41 | 0.86 | 0.58 | 1.26  | 0.417808 | 0.991798 |
| GSH          | GSTM5 | rs3768490  | 0.386 | 0.1262 | 1.22 | 0.95 | 1.58 | 0.52 | 0.33 | 0.81  | 0.000132 | 0.057931 |
| GSH          | GSTM5 | rs11807    | 0.190 | 0.2020 | 1.11 | 0.85 | 1.43 | 0.96 | 0.47 | 1.97  | 0.736937 | 0.991798 |
| GSH          | GSTM5 | rs12743015 | 0.034 | 0.2153 | 1.23 | 0.80 | 1.89 | 0.00 | 0.00 | NA    | 0.184009 | 0.799804 |
| GSH          | GSTM5 | rs929166   | 0.323 | 0.3990 | 0.96 | 0.75 | 1.23 | 0.48 | 0.29 | 0.80  | 0.007061 | 0.684387 |
| GSH          | GSTO1 | rs11191975 | 0.118 | 0.1040 | 0.86 | 0.63 | 1.19 | 0.53 | 0.17 | 1.69  | 0.352937 | 0.961006 |
| GSH          | GSTO1 | rs11509438 | 0.034 | 0.4458 | 0.70 | 0.39 | 1.27 | 1.19 | 0.15 | 9.24  | 0.469412 | 0.991798 |
| GSH          | GSTO1 | rs1147611  | 0.386 | 0.4536 | 0.91 | 0.70 | 1.18 | 1.00 | 0.70 | 1.44  | 0.728943 | 0.991798 |
| GSH          | GSTO1 | rs2164624  | 0.353 | 0.8628 | 0.91 | 0.70 | 1.18 | 1.12 | 0.77 | 1.64  | 0.525904 | 0.991798 |
| GSH          | GSTO1 | rs628480   | 0.024 | 1.0000 | 1.23 | 0.69 | 2.22 | NA   | NA   | NA    | 0.496431 | 0.991798 |
| GSH          | GSTO2 | rs10491045 | 0.064 | 0.0287 | 0.99 | 0.67 | 1.47 | 0.78 | 0.19 | 3.19  | 0.939241 | 0.995958 |
| GSH          | GSTO2 | rs568526   | 0.357 | 0.1217 | 0.84 | 0.64 | 1.09 | 1.01 | 0.70 | 1.46  | 0.34988  | 0.959984 |
| GSH          | GSTO2 | rs157080   | 0.326 | 0.5326 | 0.85 | 0.66 | 1.10 | 1.11 | 0.76 | 1.64  | 0.290599 | 0.892118 |
| GSH          | GSTO2 | rs156699   | 0.327 | 0.5928 | 0.85 | 0.66 | 1.09 | 1.11 | 0.76 | 1.63  | 0.27672  | 0.892118 |
| GSH          | GSTO2 | rs11191990 | 0.011 | 1.0000 | 1.04 | 0.53 | 2.05 | NA   | NA   | NA    | 0.907437 | 0.991798 |
| GSH          | GSTO2 | rs157077   | 0.470 | 1.0000 | 0.79 | 0.60 | 1.04 | 0.85 | 0.60 | 1.20  | 0.25098  | 0.88144  |
| GSH          | GSTP1 | rs1695     | 0.353 | 0.1878 | 0.89 | 0.69 | 1.15 | 0.83 | 0.55 | 1.23  | 0.523161 | 0.991798 |
| GSH          | GSTP1 | rs1138272  | 0.069 | 0.5169 | 0.97 | 0.66 | 1.42 | 1.72 | 0.42 | 7.10  | 0.771619 | 0.991798 |
| GSH          | GSTP1 | rs762803   | 0.451 | 0.8105 | 0.76 | 0.58 | 0.99 | 0.75 | 0.53 | 1.06  | 0.100652 | 0.728251 |
| GSH          | GSTP1 | rs1871042  | 0.360 | 0.8613 | 0.87 | 0.67 | 1.13 | 0.83 | 0.55 | 1.23  | 0.465582 | 0.991798 |
| GSH          | GSTP1 | rs4147581  | 0.467 | 0.9373 | 1.18 | 0.88 | 1.59 | 1.46 | 1.04 | 2.04  | 0.092259 | 0.728251 |
| GSH          | GSTZ1 | rs2270422  | 0.408 | 0.1201 | 0.88 | 0.68 | 1.15 | 0.76 | 0.52 | 1.10  | 0.324768 | 0.93798  |
| GSH          | GSTZ1 | rs2287396  | 0.188 | 0.3078 | 0.95 | 0.73 | 1.22 | 0.90 | 0.47 | 1.73  | 0.885926 | 0.991798 |
| GSH          | GSTZ1 | rs1046428  | 0.177 | 0.4372 | 1.37 | 1.06 | 1.76 | 1.36 | 0.63 | 2.92  | 0.049615 | 0.728251 |
| GSH          | GSTZ1 | rs8004558  | 0.079 | 0.6075 | 1.04 | 0.73 | 1.46 | 3.23 | 1.17 | 8.89  | 0.154438 | 0.739567 |
| GSH          | GSTZ1 | rs8016187  | 0.298 | 0.7745 | 0.92 | 0.71 | 1.18 | 0.88 | 0.56 | 1.36  | 0.732696 | 0.991798 |
| GSH          | GSTZ1 | rs8177565  | 0.027 | 1.0000 | 0.84 | 0.46 | 1.56 | NA   | NA   | NA    | 0.575804 | 0.991798 |
| GSH          | GSTZ1 | rs2287397  | 0.029 | 1.0000 | 0.79 | 0.44 | 1.42 | NA   | NA   | NA    | 0.408179 | 0.991798 |
| GSH          | GSTZ1 | rs8177573  | 0.075 | 1.0000 | 0.63 | 0.41 | 0.97 | 0.46 | 0.06 | 3.41  | 0.059419 | 0.728251 |
| GSH          | GSTZ1 | rs7972     | 0.080 | 1.0000 | 1.05 | 0.75 | 1.46 | 4.02 | 1.24 | 13.03 | 0.15228  | 0.739567 |
| Inflammation | IL10  | rs3021094  | 0.091 | 0.1482 | 1.01 | 0.71 | 1.43 | 1.76 | 0.72 | 4.30  | 0.524344 | 0.991798 |
| Inflammation | IL10  | rs3024493  | 0.168 | 0.1619 | 1.00 | 0.76 | 1.32 | 1.07 | 0.59 | 1.95  | 0.973735 | 0.998602 |
| Inflammation | IL10  | rs3024509  | 0.073 | 0.2158 | 0.68 | 0.45 | 1.01 | 1.69 | 0.62 | 4.62  | 0.082285 | 0.728251 |
| Inflammation | IL10  | rs1800871  | 0.239 | 0.5070 | 0.89 | 0.69 | 1.16 | 1.03 | 0.61 | 1.73  | 0.672182 | 0.991798 |
| Inflammation | IL10  | rs3024498  | 0.279 | 0.7566 | 0.72 | 0.55 | 0.94 | 0.91 | 0.56 | 1.48  | 0.048194 | 0.728251 |
| Inflammation | IL10  | rs1878672  | 0.522 | 0.8138 | 0.81 | 0.61 | 1.08 | 0.69 | 0.49 | 0.98  | 0.107185 | 0.728251 |
| Inflammation | IL10  | rs3024508  | 0.014 | 1.0000 | 1.71 | 1.00 | 2.92 | NA   | NA   | NA    | 0.066162 | 0.728251 |
| Inflammation | IL1B  | rs2853550  | 0.075 | 0.2507 | 1.00 | 0.71 | 1.41 | 0.85 | 0.21 | 3.46  | 0.97486  | 0.998602 |
| Inflammation | IL1B  | rs1143627  | 0.289 | 0.3610 | 1.07 | 0.83 | 1.38 | 1.19 | 0.80 | 1.78  | 0.669661 | 0.991798 |
| Inflammation | IL1B  | rs1143630  | 0.052 | 0.4395 | 1.06 | 0.73 | 1.54 | 0.39 | 0.05 | 2.84  | 0.51896  | 0.991798 |
| Inflammation | IL1B  | rs1143634  | 0.246 | 0.6645 | 1.09 | 0.85 | 1.40 | 0.95 | 0.52 | 1.73  | 0.775801 | 0.991798 |
| Inflammation | IL1B  | rs1143633  | 0.359 | 0.8645 | 0.96 | 0.74 | 1.25 | 1.17 | 0.81 | 1.68  | 0.602278 | 0.991798 |
| Inflammation | IL1RN | rs4252041  | 0.031 | 0.4631 | 1.00 | 0.59 | 1.70 | 1.98 | 0.26 | 14.91 | 0.833843 | 0.991798 |



|              |       |           |       |        |      |      |      |    |      |      |       |          |          |
|--------------|-------|-----------|-------|--------|------|------|------|----|------|------|-------|----------|----------|
| Inflammation | IL1RN | rs315952  | 0.308 | 0.5030 | 0.99 | 0.77 | 1.27 |    | 1.04 | 0.63 | 1.72  | 0.979899 | 0.998602 |
| Inflammation | IL1RN | rs3087266 | 0.149 | 0.5372 | 1.09 | 0.83 | 1.44 |    | 1.24 | 0.50 | 3.06  | 0.750506 | 0.991798 |
| Inflammation | IL1RN | rs380092  | 0.347 | 0.5909 | 0.94 | 0.73 | 1.21 |    | 1.07 | 0.70 | 1.66  | 0.797941 | 0.991798 |
| Inflammation | IL1RN | rs3087263 | 0.084 | 0.6544 | 1.48 | 1.10 | 1.99 |    | 0.60 | 0.15 | 2.45  | 0.028166 | 0.728251 |
| Inflammation | IL1RN | rs397211  | 0.284 | 0.9275 | 1.12 | 0.87 | 1.45 |    | 1.52 | 1.04 | 2.24  | 0.114914 | 0.728251 |
| Inflammation | IL6   | rs2066992 | 0.053 | 0.4172 | 1.11 | 0.75 | 1.64 |    | 0.00 | 0.00 | Inf   | 0.048188 | 0.728251 |
| Inflammation | IL6   | rs2069852 | 0.033 | 0.5473 | 1.04 | 0.66 | 1.64 |    | 0.00 | 0.00 | Inf   | 0.134559 | 0.730689 |
| Inflammation | IL6   | rs1800795 | 0.454 | 0.6326 | 0.97 | 0.74 | 1.27 |    | 1.05 | 0.74 | 1.50  | 0.87645  | 0.991798 |
| Inflammation | IL6   | rs2069840 | 0.332 | 0.7262 | 0.92 | 0.71 | 1.18 |    | 1.03 | 0.71 | 1.51  | 0.72749  | 0.991798 |
| Inflammation | IL6   | rs2069843 | 0.027 | 1.0000 | 0.95 | 0.58 | 1.54 | NA |      | NA   | NA    | 0.825286 | 0.991798 |
| Inflammation | IL6   | rs2069835 | 0.053 | 1.0000 | 0.98 | 0.66 | 1.46 |    | 0.00 | 0.00 | Inf   | 0.815141 | 0.991798 |
| Inflammation | IL6   | rs2069861 | 0.114 | 1.0000 | 0.90 | 0.66 | 1.24 |    | 2.48 | 0.90 | 6.85  | 0.23877  | 0.87406  |
| Inflammation | IL8   | rs2227543 | 0.438 | 0.3363 | 0.94 | 0.72 | 1.24 |    | 0.86 | 0.60 | 1.23  | 0.694472 | 0.991798 |
| Inflammation | IL8   | rs2227306 | 0.435 | 0.4668 | 0.96 | 0.72 | 1.26 |    | 0.86 | 0.59 | 1.24  | 0.708587 | 0.991798 |
| Inflammation | LTA   | rs1799964 | 0.216 | 0.1499 | 1.05 | 0.80 | 1.37 |    | 0.67 | 0.37 | 1.22  | 0.332756 | 0.954586 |
| Inflammation | LTA   | rs1041981 | 0.346 | 0.3894 | 1.01 | 0.78 | 1.30 |    | 0.97 | 0.66 | 1.41  | 0.978365 | 0.998602 |
| Inflammation | LTA   | rs3093542 | 0.035 | 0.5308 | 1.21 | 0.74 | 1.98 |    | 0.00 | 0.00 | Inf   | 0.578023 | 0.991798 |
| Inflammation | LTA   | rs1800750 | 0.014 | 1.0000 | 0.56 | 0.26 | 1.23 | NA |      | NA   | NA    | 0.120521 | 0.728251 |
| Inflammation | PTGS2 | rs2206593 | 0.067 | 0.0220 | 1.06 | 0.73 | 1.54 |    | 1.64 | 0.51 | 5.21  | 0.71374  | 0.991798 |
| Inflammation | PTGS2 | rs4648307 | 0.121 | 0.2458 | 0.88 | 0.64 | 1.19 |    | 0.61 | 0.23 | 1.65  | 0.423902 | 0.991798 |
| Inflammation | PTGS2 | rs5275    | 0.302 | 0.3114 | 1.04 | 0.80 | 1.34 |    | 1.08 | 0.72 | 1.62  | 0.921074 | 0.991798 |
| Inflammation | PTGS2 | rs2745557 | 0.189 | 0.4343 | 0.92 | 0.71 | 1.21 |    | 0.91 | 0.48 | 1.75  | 0.832481 | 0.991798 |
| Inflammation | PTGS2 | rs5277    | 0.188 | 0.7762 | 0.77 | 0.58 | 1.03 |    | 0.46 | 0.20 | 1.04  | 0.030462 | 0.728251 |
| Inflammation | PTGS2 | rs689470  | 0.020 | 1.0000 | 0.83 | 0.42 | 1.63 | NA |      | NA   | NA    | 0.572905 | 0.991798 |
| Inflammation | PTGS2 | rs4648261 | 0.029 | 1.0000 | 0.95 | 0.53 | 1.70 | NA |      | NA   | NA    | 0.849145 | 0.991798 |
| Inflammation | TNF   | rs1800630 | 0.162 | 0.0360 | 1.13 | 0.85 | 1.50 |    | 0.62 | 0.29 | 1.34  | 0.250023 | 0.88144  |
| Inflammation | TNF   | rs1800629 | 0.176 | 0.1130 | 0.97 | 0.74 | 1.28 |    | 1.47 | 0.88 | 2.45  | 0.343564 | 0.954586 |
| Inflammation | TNF   | rs3093665 | 0.022 | 0.2745 | 1.16 | 0.63 | 2.14 |    | 3.25 | 0.43 | 24.39 | 0.5629   | 0.991798 |
| Inflammation | TNF   | rs3093662 | 0.075 | 0.3612 | 0.96 | 0.66 | 1.41 |    | 0.65 | 0.16 | 2.67  | 0.803768 | 0.991798 |
| Inflammation | TNF   | rs3093671 | 0.024 | 1.0000 | 0.93 | 0.53 | 1.65 | NA |      | NA   | NA    | 0.807509 | 0.991798 |
| Inflammation | TNF   | rs3093661 | 0.041 | 1.0000 | 0.91 | 0.55 | 1.51 | NA |      | NA   | NA    | 0.711017 | 0.991798 |