Table S4 Haplotype analysis comparing all AS patients to controls.

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|  | Haplotype | Case ratio | control ratio | OR (95%CI) | p-value |
| block 1 | TT | 416:376 | 454:354 | 0.863(0.709~1.050) | 0.141 |
| AT | 288:504 | 267:541 | 1.158(0.942~1.423) | 0.163 |
| AG | 85:707 | 82:726 | 1.064(0.773~1.467) | 0.703 |
| block 2 | CTT | 382:410 | 282:526 | 1.738(1.422~2.124) | 6.266E-8\* |
| TCG | 206:586 | 212:596 | 0.988(0.791~1.235) | 0.918 |
| TCT | 196:596 | 208:600 | 0.949(0.757~1.189) | 0.647 |
| block 3 | CCA | 370:422 | 361:447 | 1.086(0.892~1.322) | 0.413 |
| TTA | 262:530 | 241:567 | 1.163(0.942~1.437) | 0.161 |
| CTA | 101:691 | 121:687 | 0.830(0.624~1.103) | 0.198 |
| CTG | 56:736 | 81:727 | 0.683(0.478~0.975) | 0.035# |

Haplotypes are constructed due to LD map (Figure 2). Case ratio means in the case group, the frequency of this kind of haplotype vs. other kinds of haplotype; control ratio means in the control group, the frequency of this kind of haplotype vs. other kinds of haplotype. Block 2 contains rs4133101 rs4546432 and rs4383756 SNPs in *PTGER4*. CTT frequency is higher than controls (p=6.266×10-8) .