

**Supplementary Table 4.** Results of the replication study for the loci identified in the ImmunoChip with CD in Koreans

| Nearby Gene           | Locus        |       |             | ImmunoChip  |                |      |             |          | Validation  |                |      |             |          | Combined |
|-----------------------|--------------|-------|-------------|-------------|----------------|------|-------------|----------|-------------|----------------|------|-------------|----------|----------|
|                       | SNP          | Chr.  | Position    | Risk allele | RAF in control | OR   | 95% CI      | P value  | Risk allele | RAF in control | OR   | 95% CI      | P value  | P cmh*   |
| <i>GPR35</i>          | rs3749172§¶  | 2q37  | 241,570,249 | A           | 0.28           | 1.44 | (1.20-1.72) | 5.57E-05 | A           | 0.27           | 1.50 | (1.29-1.74) | 7.31E-08 | 5.30E-11 |
| <i>(UBE2D3)</i>       | rs75323844†  | 4q24  | 103,774,293 | T           | 0.52           | 1.42 | (1.19-1.69) | 8.51E-05 | -           | -              | -    | -           | -        | -        |
| <i>(PREP)</i>         | rs73771645†  | 6q22  | 106,016,785 | T           | 0.02           | 3.13 | (1.77-5.54) | 3.90E-05 | T           | 0.09           | 1.02 | (0.82-1.28) | 8.62E-01 | 4.99E-02 |
| <i>DDC</i>            | rs3807563    | 7p12  | 50,566,390  | C           | 0.70           | 1.48 | (1.23-1.78) | 3.77E-05 | T           | 0.22           | 1.18 | (1.01-1.37) | 3.21E-02 | 3.71E-01 |
| <i>(JAK2)</i>         | rs10758669   | 9p24  | 4,981,602   | C           | 0.29           | 1.45 | (1.21-1.74) | 4.02E-05 | C           | 0.33           | 1.00 | (0.88-1.14) | 9.82E-01 | 1.05E-02 |
| <i>PRKCQ</i>          | rs587198     | 10p15 | 6,531,149   | C           | 0.42           | 1.51 | (1.27-1.79) | 2.28E-06 | C           | 0.49           | 1.02 | (0.89-1.16) | 8.12E-01 | 2.47E-03 |
| <i>REEP3</i>          | rs16918645   | 10q21 | 65,346,300  | A           | 0.75           | 1.49 | (1.22-1.81) | 7.43E-05 | A           | 0.79           | 1.07 | (0.91-1.25) | 4.40E-01 | 2.12E-03 |
| <i>ZMIZ1</i>          | rs1250569¶   | 10q22 | 81,045,207  | T           | 0.47           | 1.51 | (1.28-1.79) | 1.41E-06 | T           | 0.48           | 1.19 | (1.05-1.35) | 6.45E-03 | 3.05E-07 |
| <i>PTDSS2</i>         | rs77910374‡  | 11p15 | 453,313     | T           | 0.80           | 1.52 | (1.22-1.90) | 1.81E-04 | T           | 0.82           | 1.06 | (0.89-1.25) | 5.27E-01 | 6.22E-03 |
| <i>FCHSD2</i>         | rs12294037   | 11q13 | 72,807,631  | T           | 0.39           | 1.42 | (1.19-1.68) | 6.31E-05 | T           | 0.42           | 1.20 | (1.05-1.36) | 5.50E-03 | 3.28E-06 |
| <i>PICALM</i>         | rs585820†    | 11q14 | 85,696,670  | G           | 0.22           | 1.51 | (1.24-1.84) | 3.94E-05 | A           | 0.57           | 1.07 | (0.97-1.18) | 1.93E-01 | 3.67E-01 |
| <i>USP6</i>           | rs28645497†  | 17p13 | 5,042,241   | A           | 0.46           | 1.42 | (1.19-1.69) | 9.49E-05 | A           | 0.53           | 1.08 | (0.95-1.23) | 2.52E-01 | 1.37E-03 |
| <i>PTPN2</i>          | rs514000§¶   | 18p11 | 12,854,072  | C           | 0.30           | 1.43 | (1.20-1.70) | 4.94E-05 | C           | 0.34           | 1.27 | (1.11-1.44) | 4.13E-04 | 9.00E-08 |
| <i>(NRIP1, USP25)</i> | rs2823256‡§¶ | 21q11 | 16,784,706  | G           | 0.69           | 1.38 | (1.14-1.66) | 7.01E-04 | G           | 0.70           | 1.35 | (1.16-1.56) | 6.45E-05 | 2.49E-07 |
| <i>APP</i>            | rs72635015†  | 21q21 | 27,451,908  | A           | 0.15           | 1.59 | (1.27-1.99) | 4.95E-05 | T           | 0.80           | 1.02 | (0.87-1.20) | 7.69E-01 | 2.86E-02 |
| <i>UBE2L3</i>         | rs2256609    | 22q11 | 21,925,017  | G           | 0.32           | 1.47 | (1.22-1.76) | 2.89E-05 | G           | 0.34           | 1.12 | (0.98-1.28) | 1.09E-01 | 1.54E-04 |
| <i>UBE2L3</i>         | rs5754217    | 22q11 | 21,939,675  | T           | 0.41           | 1.42 | (1.20-1.68) | 5.52E-05 | T           | 0.42           | 1.13 | (0.99-1.28) | 6.95E-02 | 1.10E-04 |

Note: Chr, chromosome; CI, confidence interval; OR, odds ratio; RAF, risk allele frequency.

\*P cmh was calculated by Cochran-Mantel-Haenszel (CMH) test statistic (1 d.f.).

¶Imputed SNPs.

‡The proxy of imputed SNPs with  $P < 10^{-4}$ , rs58761034 ( $r^2=0.77$ ,  $D'=0.91$ ) and rs200642633 ( $r^2=0.91$ ,  $D'=0.96$ ), respectively.

§These SNPs passed the Bonferroni correction following the validation.

¶These SNPs have reached the genome-wide significance P value in the immunoChip+validation set.