Supplemental Table S1. Basic information of 40 genotyped SNPs in *SPON1*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CHR | POS | SNP | A1 | A2 | MAF | HWE | FUNC |
| 11 | 13962817 | rs7122836 | T | G | 0.24  | 0.74  | intron |
| 11 | 13963693 | rs59712449 | A | G | 0.27  | 0.86  | intron |
| 11 | 13967673 | rs10450577 | T | C | 0.41  | 0.59  | intron |
| 11 | 13967702 | rs11605043 | C | G | 0.17  | 0.81  | intron |
| 11 | 13973182 | rs79720447 | A | C | 0.14  | 0.74  | intron |
| 11 | 13974679 | rs1830390 | A | G | 0.11  | 0.68  | intron |
| 11 | 13975852 | rs9704394 | A | G | 0.47  | 0.60  | intron |
| 11 | 13975922 | rs58930801 | T | A | 0.30  | 0.95  | intron |
| 11 | 13976777 | rs4757217 | G | C | 0.26  | 0.86  | intron |
| 11 | 14000467 | rs2697852 | G | A | 0.17  | 0.81  | intron |
| 11 | 14013799 | rs75376202 | A | G | 0.34  | 0.86  | intron |
| 11 | 14032187 | rs11023057 | T | A | 0.13  | 1.00  | intron |
| 11 | 14063044 | rs1819083 | T | C | 0.38  | 0.79  | intron |
| 11 | 14067884 | rs2697825 | G | A | 0.17  | 0.35  | intron |
| 11 | 14078477 | rs10832177 | G | C | 0.33  | 0.76  | intron |
| 11 | 14090137 | rs113897588 | A | C | 0.26  | 0.55  | intron |
| 11 | 14091014 | rs7123121 | C | T | 0.50  | 0.79  | intron |
| 11 | 14107329 | rs10734220 | T | C | 0.10  | 0.55  | intron |
| 11 | 14107934 | rs10741632 | C | G | 0.29  | 0.69  | intron |
| 11 | 14128161 | rs7115922 | C | A | 0.32  | 0.61  | intron |
| 11 | 14155787 | rs12793953 | G | A | 0.28  | 0.64  | intron |
| 11 | 14160547 | rs545858283 | A | T | 0.19  | 0.69  | intron |
| 11 | 14160697 | rs561801491 | T | A | 0.21  | 0.62  | intron |
| 11 | 14163746 | rs12800433 | A | G | 0.45  | 0.96  | intron |
| 11 | 14171442 | rs11023126 | G | C | 0.12  | 0.56  | intron |
| 11 | 14172557 | rs61883820 | T | C | 0.15  | 0.63  | intron |
| 11 | 14176754 | rs75121055 | G | A | 0.18  | 0.86  | intron |
| 11 | 14192654 | rs6486179 | C | A | 0.12  | 0.95  | intron |
| 11 | 14197115 | rs79765765 | A | G | 0.13  | 0.54  | intron |
| 11 | 14203337 | rs4756776 | G | T | 0.23  | 0.91  | intron |
| 11 | 14209087 | rs80006480 | A | T | 0.28  | 0.63  | intron |
| 11 | 14211495 | rs10741641 | A | G | 0.11  | 0.77  | intron |
| 11 | 14212322 | rs72861675 | T | C | 0.10  | 0.94  | intron |
| 11 | 14225563 | rs1025413 | T | C | 0.49  | 0.98  | intron |
| 11 | 14234272 | rs10766177 | T | C | 0.35  | 0.74  | intron |
| 11 | 14234377 | rs34985514 | A | G | 0.11  | 0.83  | intron |
| 11 | 14242679 | rs11023160 | A | T | 0.48  | 0.91  | intron |
| 11 | 14244243 | rs4307686 | G | A | 0.23  | 0.76  | intron |
| 11 | 14244913 | rs10734222 | A | G | 0.23  | 0.91  | intron |
| 11 | 14254004 | rs10832239 | T | A | 0.14  | 0.91  | intron |

CHR: chromosome; POS: position; A1: minor allele; A2: major allele; MAF: minor allele frequency; HWE: *P* values for Hardy-Weinberg equilibrium tests; FUNC: function.

Supplemental Table S2. Full results of single marker based association analyses.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CHR | SNP | POS | A1 | OR | SE | L95 | U95 | *T*-statistics | *P* |
| 11 | rs7122836 | 13984364 | T | 0.97  | 0.04  | 0.89  | 1.04  | -0.86  | 0.39  |
| 11 | rs59712449 | 13985240 | A | 1.03  | 0.04  | 0.95  | 1.10  | 0.65  | 0.52  |
| 11 | rs10450577 | 13989220 | T | 1.02  | 0.03  | 0.96  | 1.10  | 0.70  | 0.49  |
| 11 | rs11605043 | 13989249 | C | 1.04  | 0.04  | 0.95  | 1.14  | 0.89  | 0.37  |
| 11 | rs79720447 | 13994729 | A | 1.04  | 0.05  | 0.95  | 1.14  | 0.82  | 0.41  |
| 11 | rs1830390 | 13996226 | A | 1.05  | 0.05  | 0.94  | 1.16  | 0.85  | 0.39  |
| 11 | rs9704394 | 13997399 | A | 1.02  | 0.03  | 0.96  | 1.09  | 0.66  | 0.51  |
| 11 | rs58930801 | 13997469 | T | 0.97  | 0.04  | 0.91  | 1.05  | -0.74  | 0.46  |
| 11 | rs4757217 | 13998324 | G | 1.02  | 0.04  | 0.94  | 1.10  | 0.46  | 0.64  |
| 11 | rs2697852 | 14022014 | G | 1.04  | 0.04  | 0.95  | 1.13  | 0.80  | 0.42  |
| 11 | rs75376202 | 14035346 | A | 1.02  | 0.04  | 0.95  | 1.10  | 0.64  | 0.52  |
| 11 | rs11023057 | 14053734 | T | 0.95  | 0.05  | 0.86  | 1.05  | -0.94  | 0.35  |
| 11 | rs1819083 | 14084591 | T | 1.02  | 0.03  | 0.95  | 1.09  | 0.51  | 0.61  |
| 11 | rs2697825 | 14089431 | G | 0.84  | 0.05  | 0.77  | 0.92  | -3.84  | 0.0001  |
| 11 | rs10832177 | 14100024 | G | 0.98  | 0.04  | 0.91  | 1.05  | -0.56  | 0.58  |
| 11 | rs113897588 | 14111683 | A | 0.98  | 0.04  | 0.91  | 1.06  | -0.48  | 0.63  |
| 11 | rs7123121 | 14112560 | C | 0.98  | 0.03  | 0.92  | 1.05  | -0.58  | 0.56  |
| 11 | rs10734220 | 14128875 | T | 1.07  | 0.05  | 0.97  | 1.19  | 1.31  | 0.19  |
| 11 | rs10741632 | 14129480 | C | 1.03  | 0.04  | 0.96  | 1.11  | 0.85  | 0.40  |
| 11 | rs7115922 | 14149707 | C | 1.02  | 0.04  | 0.95  | 1.10  | 0.61  | 0.54  |
| 11 | rs12793953 | 14177333 | G | 0.97  | 0.04  | 0.91  | 1.05  | -0.69  | 0.49  |
| 11 | rs545858283 | 14182093 | A | 0.96  | 0.04  | 0.89  | 1.05  | -0.83  | 0.41  |
| 11 | rs561801491 | 14182243 | T | 1.04  | 0.04  | 0.96  | 1.13  | 0.97  | 0.33  |
| 11 | rs12800433 | 14185292 | A | 1.03  | 0.03  | 0.96  | 1.10  | 0.77  | 0.44  |
| 11 | rs11023126 | 14192988 | G | 0.95  | 0.05  | 0.86  | 1.06  | -0.94  | 0.35  |
| 11 | rs61883820 | 14194103 | T | 0.97  | 0.05  | 0.88  | 1.07  | -0.62  | 0.53  |
| 11 | rs75121055 | 14198300 | G | 0.97  | 0.04  | 0.90  | 1.06  | -0.59  | 0.55  |
| 11 | rs6486179 | 14214200 | C | 1.05  | 0.05  | 0.95  | 1.16  | 0.98  | 0.33  |
| 11 | rs79765765 | 14218661 | A | 0.96  | 0.05  | 0.87  | 1.06  | -0.87  | 0.38  |
| 11 | rs4756776 | 14224883 | G | 0.97  | 0.04  | 0.90  | 1.05  | -0.67  | 0.51  |
| 11 | rs80006480 | 14230633 | A | 0.98  | 0.04  | 0.91  | 1.05  | -0.64  | 0.52  |
| 11 | rs10741641 | 14233041 | A | 1.07  | 0.05  | 0.96  | 1.19  | 1.19  | 0.24  |
| 11 | rs72861675 | 14233868 | T | 1.06  | 0.05  | 0.95  | 1.18  | 1.01  | 0.31  |
| 11 | rs1025413 | 14247109 | T | 1.02  | 0.03  | 0.95  | 1.09  | 0.53  | 0.60  |
| 11 | rs10766177 | 14255818 | T | 1.02  | 0.03  | 0.95  | 1.09  | 0.60  | 0.55  |
| 11 | rs34985514 | 14255923 | A | 0.95  | 0.05  | 0.85  | 1.06  | -0.96  | 0.33  |
| 11 | rs11023160 | 14264225 | A | 0.97  | 0.03  | 0.91  | 1.04  | -0.77  | 0.44  |
| 11 | rs4307686 | 14265789 | G | 1.04  | 0.04  | 0.96  | 1.12  | 0.95  | 0.34  |
| 11 | rs10734222 | 14266459 | A | 1.03  | 0.04  | 0.95  | 1.11  | 0.69  | 0.49  |
| 11 | rs10832239 | 14275550 | T | 1.06  | 0.05  | 0.97  | 1.16  | 1.22  | 0.22  |

CHR: chromosome; POS: position; A1: minor allele; SE: standard error; L95: lower bound of 95% confidence interval; U95: upper bound of 95% confidence interval.

Supplemental Table S3.Genetic association results between the selected 40 SNPs and BMD of femoral neck and lumbar spine stratified by osteoporosis status.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CHR | SNP | POS | A1 | FN in cases | FN in controls | LN in cases | LN in controls |
| β | STAT | *P* | β | STAT | *P* | β | STAT | *P* | β | STAT | *P* |
| 11 | rs7122836 | 13984364 | T | 0.0060  | 4.54  | < 1E-05 | 0.0056  | 5.83  | < 1E-05 | 0.0063  | 4.28  | < 1E-05 | 0.0049  | 5.64  | < 1E-05 |
| 11 | rs59712449 | 13985240 | A | 0.0062  | 5.04  | < 1E-05 | 0.0062  | 6.65  | < 1E-05 | 0.0066  | 4.76  | < 1E-05 | 0.0053  | 6.40  | < 1E-05 |
| 11 | rs10450577 | 13989220 | T | 0.0073  | 6.55  | < 1E-05 | 0.0081  | 9.63  | < 1E-05 | 0.0078  | 6.24  | < 1E-05 | 0.0067  | 8.94  | < 1E-05 |
| 11 | rs11605043 | 13989249 | C | 0.0078  | 5.31  | < 1E-05 | 0.0098  | 8.87  | < 1E-05 | 0.0082  | 5.02  | < 1E-05 | 0.0086  | 8.74  | < 1E-05 |
| 11 | rs79720447 | 13994729 | A | 0.0080  | 5.22  | < 1E-05 | 0.0098  | 8.39  | < 1E-05 | 0.0084  | 4.89  | < 1E-05 | 0.0087  | 8.32  | < 1E-05 |
| 11 | rs1830390 | 13996226 | A | 0.0144  | 8.53  | < 1E-05 | 0.0177  | 13.72  | < 1E-05 | 0.0155  | 8.23  | < 1E-05 | 0.0149  | 12.96  | < 1E-05 |
| 11 | rs9704394 | 13997399 | A | 0.0112  | 10.25  | < 1E-05 | 0.0133  | 16.36  | < 1E-05 | 0.0118  | 9.65  | < 1E-05 | 0.0110  | 15.18  | < 1E-05 |
| 11 | rs58930801 | 13997469 | T | 0.0189  | 16.24  | < 1E-05 | 0.0185  | 21.33  | < 1E-05 | 0.0205  | 15.72  | < 1E-05 | 0.0152  | 19.45  | < 1E-05 |
| 11 | rs4757217 | 13998324 | G | 0.0215  | 18.07  | < 1E-05 | 0.0214  | 23.66  | < 1E-05 | 0.0233  | 17.48  | < 1E-05 | 0.0176  | 21.68  | < 1E-05 |
| 11 | rs2697852 | 14022014 | G | 0.0086  | 6.02  | < 1E-05 | 0.0064  | 5.81  | < 1E-05 | 0.0096  | 5.99  | < 1E-05 | 0.0055  | 5.62  | < 1E-05 |
| 11 | rs75376202 | 14035346 | A | 0.0048  | 4.16  | < 1E-05 | 0.0040  | 4.63  | < 1E-05 | 0.0057  | 4.39  | < 1E-05 | 0.0036  | 4.62  | < 1E-05 |
| 11 | rs11023057 | 14053734 | T | 0.0437  | 29.54  | < 1E-05 | 0.0402  | 36.00  | < 1E-05 | 0.0473  | 28.37  | < 1E-05 | 0.0331  | 32.58  | < 1E-05 |
| 11 | rs1819083 | 14084591 | T | 0.0344  | 37.26  | < 1E-05 | 0.0363  | 52.35  | 0 | 0.0372  | 35.54  | < 1E-05 | 0.0304  | 47.62  | 0 |
| 11 | rs2697825 | 14089431 | G | 0.0671  | 80.17  | 0 | 0.0643  | 103.60  | 0 | 0.0727  | 72.83  | 0 | 0.0541  | 88.08  | 0 |
| 11 | rs10832177 | 14100024 | G | 0.0362  | 38.18  | < 1E-05 | 0.0386  | 54.68  | 0 | 0.0396  | 36.87  | < 1E-05 | 0.0328  | 50.67  | 0 |
| 11 | rs113897588 | 14111683 | A | 0.0339  | 31.12  | < 1E-05 | 0.0356  | 44.07  | 0 | 0.0371  | 30.23  | < 1E-05 | 0.0301  | 40.93  | 0 |
| 11 | rs7123121 | 14112560 | C | 0.0203  | 19.54  | < 1E-05 | 0.0217  | 28.04  | < 1E-05 | 0.0220  | 18.90  | < 1E-05 | 0.0184  | 26.42  | < 1E-05 |
| 11 | rs10734220 | 14128875 | T | 0.0174  | 10.09  | < 1E-05 | -0.0015  | -1.06  | 0.2885 | 0.0188  | 9.75  | < 1E-05 | -0.0020  | -1.61  | 0.1071 |
| 11 | rs10741632 | 14129480 | C | 0.0350  | 35.05  | < 1E-05 | 0.0371  | 48.86  | 0 | 0.0382  | 33.89  | < 1E-05 | 0.0313  | 45.01  | 0 |
| 11 | rs7115922 | 14149707 | C | 0.0189  | 16.82  | < 1E-05 | 0.0226  | 27.00  | < 1E-05 | 0.0208  | 16.51  | < 1E-05 | 0.0191  | 25.42  | < 1E-05 |
| 11 | rs12793953 | 14177333 | G | 0.0181  | 15.30  | < 1E-05 | 0.0213  | 24.63  | < 1E-05 | 0.0197  | 14.87  | < 1E-05 | 0.0182  | 23.48  | < 1E-05 |
| 11 | rs545858283 | 14182093 | A | 0.0087  | 6.11  | < 1E-05 | 0.0095  | 9.02  | < 1E-05 | 0.0093  | 5.81  | < 1E-05 | 0.0079  | 8.42  | < 1E-05 |
| 11 | rs561801491 | 14182243 | T | 0.0009  | 0.66  | 0.5108 | 0.0053  | 5.17  | < 1E-05 | 0.0008  | 0.56  | 0.5766 | 0.0045  | 4.93  | < 1E-05 |
| 11 | rs12800433 | 14185292 | A | 0.0018  | 1.59  | 0.1125 | 0.0031  | 3.67  | 0.0002424 | 0.0019  | 1.51  | 0.1303 | 0.0025  | 3.37  | 0.0007596 |
| 11 | rs11023126 | 14192988 | G | 0.0000  | -0.02  | 0.9828 | 0.0033  | 2.54  | 0.01126 | 0.0000  | 0.02  | 0.9843 | 0.0023  | 1.96  | 0.0501 |
| 11 | rs61883820 | 14194103 | T | 0.0013  | 0.80  | 0.4234 | 0.0037  | 3.18  | 0.001501 | 0.0014  | 0.77  | 0.4416 | 0.0025  | 2.39  | 0.01687 |
| 11 | rs75121055 | 14198300 | G | 0.0024  | 1.66  | 0.09678 | 0.0027  | 2.57  | 0.0101 | 0.0027  | 1.66  | 0.0966 | 0.0022  | 2.36  | 0.01843 |
| 11 | rs6486179 | 14214200 | C | 0.0011  | 0.68  | 0.4963 | 0.0039  | 3.06  | 0.002209 | 0.0010  | 0.55  | 0.5798 | 0.0033  | 2.93  | 0.003422 |
| 11 | rs79765765 | 14218661 | A | 0.0004  | 0.26  | 0.797 | 0.0040  | 3.25  | 0.001169 | 0.0004  | 0.21  | 0.8374 | 0.0030  | 2.73  | 0.006395 |
| 11 | rs4756776 | 14224883 | G | 0.0017  | 1.27  | 0.2038 | 0.0018  | 1.84  | 0.06598 | 0.0017  | 1.19  | 0.2338 | 0.0011  | 1.26  | 0.2078 |
| 11 | rs80006480 | 14230633 | A | 0.0014  | 1.15  | 0.2511 | 0.0009  | 1.03  | 0.3053 | 0.0013  | 0.97  | 0.3344 | 0.0005  | 0.61  | 0.5393 |
| 11 | rs10741641 | 14233041 | A | 0.0024  | 1.34  | 0.1802 | 0.0007  | 0.51  | 0.607 | 0.0027  | 1.39  | 0.1663 | 0.0006  | 0.52  | 0.6066 |
| 11 | rs72861675 | 14233868 | T | 0.0021  | 1.18  | 0.2393 | 0.0006  | 0.47  | 0.6382 | 0.0022  | 1.09  | 0.2749 | 0.0006  | 0.52  | 0.6044 |
| 11 | rs1025413 | 14247109 | T | 0.0012  | 1.06  | 0.2896 | 0.0006  | 0.74  | 0.4599 | 0.0010  | 0.81  | 0.4186 | 0.0004  | 0.60  | 0.5493 |
| 11 | rs10766177 | 14255818 | T | 0.0016  | 1.42  | 0.1546 | 0.0001  | 0.07  | 0.9412 | 0.0012  | 0.94  | 0.348 | 0.0002  | 0.30  | 0.762 |
| 11 | rs34985514 | 14255923 | A | 0.0035  | 1.93  | 0.05379 | 0.0005  | 0.35  | 0.7281 | 0.0028  | 1.35  | 0.1786 | -3.48E-08 | 0.00  | 1 |
| 11 | rs11023160 | 14264225 | A | 0.0008  | 0.72  | 0.4725 | -0.0006  | -0.67  | 0.505 | 0.0006  | 0.48  | 0.6332 | -0.0003  | -0.37  | 0.7135 |
| 11 | rs4307686 | 14265789 | G | 0.0010  | 0.78  | 0.4363 | 0.0003  | 0.27  | 0.7844 | 0.0011  | 0.78  | 0.4334 | 0.0004  | 0.44  | 0.6578 |
| 11 | rs10734222 | 14266459 | A | 0.0010  | 0.76  | 0.4485 | 0.0005  | 0.47  | 0.6409 | 0.0011  | 0.75  | 0.4529 | 0.0006  | 0.65  | 0.5172 |
| 11 | rs10832239 | 14275550 | T | 0.0027  | 1.71  | 0.08832 | -0.0001  | -0.07  | 0.9425 | 0.0029  | 1.68  | 0.09272 | 0.0004  | 0.39  | 0.6967 |

CHR: chromosome; POS: position; A1: minor allele.

Supplemental Table S4. Genetic association results conditioned on SNP rs2697825 of the selected 40 SNPs and BMD of femoral neck and lumbar spine stratified by osteoporosis status.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CHR | SNP | POS | A1 | FN in cases | FN in controls | LN in cases | LN in controls |
| β | STAT | *P* | β | STAT | *P* | β | STAT | *P* | β | STAT | *P* |
| 11 | rs7122836 | 13984364 | T | 0.0007  | 0.94  | 0.348  | 0.0001  | 0.17  | 0.868  | 0.0006  | 0.65  | 0.519  | 0.0002  | 0.37  | 0.708  |
| 11 | rs59712449 | 13985240 | A | 0.0006  | 0.86  | 0.389  | 0.0001  | 0.16  | 0.876  | 0.0005  | 0.56  | 0.576  | 0.0002  | 0.35  | 0.725  |
| 11 | rs10450577 | 13989220 | T | 0.0002  | 0.34  | 0.733  | 0.0007  | 1.49  | 0.137  | 0.0001  | 0.13  | 0.900  | 0.0005  | 1.08  | 0.280  |
| 11 | rs11605043 | 13989249 | C | -0.0006  | -0.70  | 0.484  | 0.0005  | 0.76  | 0.447  | -0.0008  | -0.86  | 0.387  | 0.0008  | 1.26  | 0.209  |
| 11 | rs79720447 | 13994729 | A | -0.0005  | -0.62  | 0.534  | 0.0001  | 0.12  | 0.904  | -0.0009  | -0.86  | 0.390  | 0.0005  | 0.77  | 0.441  |
| 11 | rs1830390 | 13996226 | A | -0.0003  | -0.29  | 0.772  | 0.0010  | 1.24  | 0.214  | -0.0004  | -0.34  | 0.735  | 0.0009  | 1.16  | 0.244  |
| 11 | rs9704394 | 13997399 | A | -0.0004  | -0.69  | 0.488  | 0.0004  | 0.89  | 0.375  | -0.0008  | -1.11  | 0.267  | 0.0002  | 0.48  | 0.633  |
| 11 | rs58930801 | 13997469 | T | 0.0003  | 0.47  | 0.640  | 0.0002  | 0.37  | 0.713  | 0.0004  | 0.45  | 0.650  | -0.0003  | -0.50  | 0.615  |
| 11 | rs4757217 | 13998324 | G | 0.0003  | 0.41  | 0.684  | -0.0002  | -0.33  | 0.740  | 0.0003  | 0.39  | 0.700  | -0.0006  | -0.97  | 0.332  |
| 11 | rs2697852 | 14022014 | G | -0.0003  | -0.36  | 0.721  | 0.0003  | 0.45  | 0.654  | -0.0001  | -0.06  | 0.954  | 0.0004  | 0.62  | 0.534  |
| 11 | rs75376202 | 14035346 | A | -0.0007  | -1.16  | 0.245  | -0.0002  | -0.32  | 0.751  | -0.0003  | -0.44  | 0.661  | 0.0001  | 0.14  | 0.892  |
| 11 | rs11023057 | 14053734 | T | 0.0013  | 1.13  | 0.261  | 0.0003  | 0.31  | 0.760  | 0.0013  | 0.99  | 0.324  | -0.0008  | -0.95  | 0.341  |
| 11 | rs1819083 | 14084591 | T | 0.0011  | 1.28  | 0.200  | 0.0014  | 2.10  | 0.036  | 0.0011  | 1.07  | 0.284  | 0.0009  | 1.39  | 0.164  |
| 11 | rs2697825 | 14089431 | G | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | rs10832177 | 14100024 | G | 0.0009  | 1.04  | 0.299  | 0.0008  | 1.12  | 0.264  | 0.0016  | 1.47  | 0.141  | 0.0014  | 1.88  | 0.061  |
| 11 | rs113897588 | 14111683 | A | 0.0008  | 0.98  | 0.328  | 0.0004  | 0.62  | 0.536  | 0.0014  | 1.38  | 0.169  | 0.0006  | 0.87  | 0.386  |
| 11 | rs7123121 | 14112560 | C | -0.0001  | -0.18  | 0.859  | 0.0001  | 0.22  | 0.825  | -0.0001  | -0.13  | 0.897  | 0.0003  | 0.53  | 0.600  |
| 11 | rs10734220 | 14128875 | T | 0.0011  | 1.09  | 0.275  | 0.0007  | 0.89  | 0.376  | 0.0011  | 0.94  | 0.349  | -0.0002  | -0.20  | 0.839  |
| 11 | rs10741632 | 14129480 | C | 0.0012  | 1.44  | 0.150  | 0.0010  | 1.39  | 0.166  | 0.0018  | 1.75  | 0.080  | 0.0009  | 1.34  | 0.180  |
| 11 | rs7115922 | 14149707 | C | 0.0007  | 1.03  | 0.304  | 0.0012  | 2.16  | 0.031  | 0.0011  | 1.33  | 0.184  | 0.0012  | 2.11  | 0.035  |
| 11 | rs12793953 | 14177333 | G | 0.0008  | 1.16  | 0.248  | 0.0013  | 2.26  | 0.024  | 0.0010  | 1.15  | 0.251  | 0.0014  | 2.55  | 0.011  |
| 11 | rs545858283 | 14182093 | A | 0.0005  | 0.62  | 0.538  | 0.0018  | 2.93  | 0.003  | 0.0003  | 0.36  | 0.721  | 0.0015  | 2.40  | 0.017  |
| 11 | rs561801491 | 14182243 | T | 0.0004  | 0.61  | 0.544  | 0.0007  | 1.21  | 0.225  | 0.0004  | 0.41  | 0.679  | 0.0007  | 1.12  | 0.264  |
| 11 | rs12800433 | 14185292 | A | 0.0012  | 1.92  | 0.055  | 0.0006  | 1.28  | 0.199  | 0.0012  | 1.70  | 0.090  | 0.0005  | 0.95  | 0.340  |
| 11 | rs11023126 | 14192988 | G | 0.0007  | 0.68  | 0.496  | 0.0007  | 0.89  | 0.375  | 0.0008  | 0.69  | 0.491  | 0.0001  | 0.09  | 0.932  |
| 11 | rs61883820 | 14194103 | T | 0.0008  | 0.88  | 0.381  | 0.0008  | 1.21  | 0.227  | 0.0008  | 0.78  | 0.434  | 0.0001  | 0.09  | 0.927  |
| 11 | rs75121055 | 14198300 | G | 0.0007  | 0.84  | 0.399  | 0.0006  | 1.04  | 0.298  | 0.0008  | 0.85  | 0.394  | 0.0005  | 0.78  | 0.434  |
| 11 | rs6486179 | 14214200 | C | 0.0011  | 1.24  | 0.215  | 0.0008  | 1.17  | 0.244  | 0.0010  | 0.94  | 0.346  | 0.0008  | 1.06  | 0.288  |
| 11 | rs79765765 | 14218661 | A | 0.0010  | 1.11  | 0.266  | 0.0015  | 2.06  | 0.040  | 0.0010  | 0.93  | 0.351  | 0.0009  | 1.24  | 0.217  |
| 11 | rs4756776 | 14224883 | G | 0.0011  | 1.56  | 0.118  | 0.0006  | 1.00  | 0.318  | 0.0011  | 1.35  | 0.178  | 0.0001  | 0.11  | 0.911  |
| 11 | rs80006480 | 14230633 | A | 0.0010  | 1.41  | 0.158  | 0.0001  | 0.17  | 0.867  | 0.0008  | 1.03  | 0.305  | -0.0002  | -0.41  | 0.684  |
| 11 | rs10741641 | 14233041 | A | 0.0014  | 1.49  | 0.136  | 0.0002  | 0.21  | 0.837  | 0.0017  | 1.50  | 0.133  | 0.0002  | 0.22  | 0.824  |
| 11 | rs72861675 | 14233868 | T | 0.0014  | 1.46  | 0.144  | 0.0001  | 0.14  | 0.887  | 0.0014  | 1.24  | 0.214  | 0.0002  | 0.24  | 0.812  |
| 11 | rs1025413 | 14247109 | T | 0.0009  | 1.53  | 0.125  | 0.0001  | 0.13  | 0.899  | 0.0007  | 1.02  | 0.310  | 0.0000  | -0.04  | 0.965  |
| 11 | rs10766177 | 14255818 | T | 0.0002  | 0.25  | 0.805  | -0.0001  | -0.12  | 0.906  | -0.0004  | -0.54  | 0.590  | 0.0001  | 0.26  | 0.791  |
| 11 | rs34985514 | 14255923 | A | 0.0006  | 0.63  | 0.531  | 0.0003  | 0.38  | 0.701  | -0.0004  | -0.34  | 0.735  | -0.0001  | -0.19  | 0.853  |
| 11 | rs11023160 | 14264225 | A | -0.0004  | -0.68  | 0.496  | -0.0004  | -0.73  | 0.463  | -0.0007  | -1.00  | 0.318  | -0.0001  | -0.22  | 0.828  |
| 11 | rs4307686 | 14265789 | G | 0.0001  | 0.10  | 0.922  | 0.0000  | 0.02  | 0.986  | 0.0001  | 0.14  | 0.891  | 0.0002  | 0.31  | 0.760  |
| 11 | rs10734222 | 14266459 | A | 0.0001  | 0.20  | 0.840  | 0.0001  | 0.12  | 0.901  | 0.0002  | 0.21  | 0.834  | 0.0002  | 0.43  | 0.666  |
| 11 | rs10832239 | 14275550 | T | 0.0008  | 0.93  | 0.352  | -0.0002  | -0.22  | 0.824  | 0.0009  | 0.89  | 0.372  | 0.0004  | 0.53  | 0.599  |

CHR: chromosome; POS: position; A1: minor allele.

Supplemental Table S5. eQTL signals for SNP rs2697825 on *SPON1* in multiple human tissues.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| GENE | SNP | *P*-Value | NES | *T*-statistic | Tissue |
| *SPON1* | rs2697825 | 1.60E-09 | 0.45  | 6.30  | Heart - Atrial Appendage |
| *SPON1* | rs2697825 | 2.30E-05  | 0.24  | 4.30  | Testis |
| *SPON1* | rs2697825 | 0.0057  | 0.21  | 2.80  | Heart - Left Ventricle |
| *SPON1* | rs2697825 | 0.0061  | 0.15  | 2.80  | Thyroid |
| *SPON1* | rs2697825 | 0.0096  | 0.26  | 2.60  | Liver |
| *SPON1* | rs2697825 | 0.02  | 0.26  | 2.40  | Ovary |
| *SPON1* | rs2697825 | 0.02  | 0.20  | 2.40  | Artery - Coronary |
| *SPON1* | rs2697825 | 0.04  | 0.12  | 2.10  | Adipose - Visceral (Omentum) |
| *SPON1* | rs2697825 | 0.08  | 0.09  | 1.80  | Lung |
| *SPON1* | rs2697825 | 0.09  | 0.08  | 1.70  | Skin - Sun Exposed (Lower leg) |
| *SPON1* | rs2697825 | 0.10  | 0.17  | 1.70  | Brain - Hypothalamus |
| *SPON1* | rs2697825 | 0.10  | -0.20  | -1.70  | Brain - Spinal cord (cervical c-1) |
| *SPON1* | rs2697825 | 0.12  | -0.10  | -1.60  | Brain - Frontal Cortex (BA9) |
| *SPON1* | rs2697825 | 0.13  | 0.08  | 1.50  | Artery - Tibial |
| *SPON1* | rs2697825 | 0.14  | 0.08  | 1.50  | Muscle - Skeletal |
| *SPON1* | rs2697825 | 0.14  | 0.13  | 1.50  | Spleen |
| *SPON1* | rs2697825 | 0.15  | -0.11  | -1.50  | Brain - Putamen (basal ganglia) |
| *SPON1* | rs2697825 | 0.18  | 0.21  | 1.40  | Minor Salivary Gland |
| *SPON1* | rs2697825 | 0.18  | 0.09  | 1.40  | Whole Blood |
| *SPON1* | rs2697825 | 0.22  | 0.05  | 1.20  | Adipose - Subcutaneous |
| *SPON1* | rs2697825 | 0.23  | 0.09  | 1.20  | Pancreas |
| *SPON1* | rs2697825 | 0.26  | -0.06  | -1.10  | Brain - Nucleus accumbens (basal ganglia) |
| *SPON1* | rs2697825 | 0.29  | 0.09  | 1.10  | Brain - Amygdala |
| *SPON1* | rs2697825 | 0.29  | 0.06  | 1.10  | Esophagus - Mucosa |
| *SPON1* | rs2697825 | 0.29  | 0.08  | 1.00  | Esophagus - Muscularis |
| *SPON1* | rs2697825 | 0.38  | 0.14  | 0.88  | Cells - EBV-transformed lymphocytes |
| *SPON1* | rs2697825 | 0.39  | -0.07  | -0.87  | Adrenal Gland |
| *SPON1* | rs2697825 | 0.41  | 0.13  | 0.83  | Brain - Cerebellum |
| *SPON1* | rs2697825 | 0.41  | -0.08  | -0.83  | Brain - Hippocampus |
| *SPON1* | rs2697825 | 0.41  | -0.05  | -0.83  | Stomach |
| *SPON1* | rs2697825 | 0.42  | -0.07  | -0.80  | Pituitary |
| *SPON1* | rs2697825 | 0.44  | 0.08  | 0.77  | Brain - Substantia nigra |
| *SPON1* | rs2697825 | 0.46  | -0.08  | -0.74  | Colon - Sigmoid |
| *SPON1* | rs2697825 | 0.52  | 0.03  | 0.65  | Nerve - Tibial |
| *SPON1* | rs2697825 | 0.68  | 0.02  | 0.42  | Artery - Aorta |
| *SPON1* | rs2697825 | 0.73  | -0.02  | -0.34  | Breast - Mammary Tissue |
| *SPON1* | rs2697825 | 0.76  | 0.03  | 0.31  | Small Intestine - Terminal Ileum |
| *SPON1* | rs2697825 | 0.76  | 0.05  | 0.31  | Vagina |
| *SPON1* | rs2697825 | 0.78  | 0.02  | 0.27  | Skin - Not Sun Exposed (Suprapubic) |
| *SPON1* | rs2697825 | 0.78  | -0.03  | -0.28  | Uterus |
| *SPON1* | rs2697825 | 0.79  | -0.02  | -0.27  | Brain - Anterior cingulate cortex (BA24) |
| *SPON1* | rs2697825 | 0.83  | 0.01  | 0.21  | Brain - Cortex |
| *SPON1* | rs2697825 | 0.85  | 0.01  | 0.18  | Colon - Transverse |
| *SPON1* | rs2697825 | 0.89  | 0.01  | 0.14  | Brain - Caudate (basal ganglia) |
| *SPON1* | rs2697825 | 0.89  | 0.01  | 0.13  | Cells - Transformed fibroblasts |
| *SPON1* | rs2697825 | 0.94  | -0.01  | -0.07  | Prostate |
| *SPON1* | rs2697825 | 0.96  | 0.01  | 0.06  | Brain - Cerebellar Hemisphere |

NES: normalized effect size.



Supplemental Figure S1. LD plot of the 40 genotyped SNPs in our study subjects with r2 value in each diamond.