**Intronic variants in the** ***NFKB1* gene may influence hearing forecast in patients with unilateral sensorineural hearing loss in Meniere’s disease.**

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**Supplementary Table S1: Minor allelic frequencies of the top 10 ranked signals obtained with the Immunochip in patients with Meniere’s diasease.**

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| SNP | POSITION | CONTROL | A1/A2a | CASES | P | OR(95%CI) |
| rs12406128 | chr1:22734220 | 0.335 | A/G | 0.276 | 1,31E-04 | 0.759 (0.659-0.874) |
| rs12023472 | chr1:99921791 | 0.059 | C/G | 0.031 | 1,20E-04 | 0.517 (0.367-0.728) |
| rs10875346 | chr1:101328083 | 0.271 | A/G | 0.216 | 1,02E-04 | 0.739 (0.635-0.861) |
| rs4463689 | chr1:161307723 | 0.091 | A/T | 0.056 | 1,05E-04 | 0.599 (0.461-0.777) |
| rs57995211 | chr1:161340791 | 0.090 | T/A | 0.056 | 1,03E-04 | 0.596 (0.458-0.776) |
| rs11799419 | chr1:172913564 | 0.065 | A/G | 0.037 | 1,38E-04 | 0.545 (0.397-0.748) |
| rs10188379 | chr2:38371476 | 0.189 | C/G | 0.239 | 1,43E-04 | 1.348 (1.155-1.573) |
| rs17031287 | chr2:43920021 | 0.111 | A/T | 0.074 | 1,54E-04 | 0.640 (0.507-0.807) |
| rs1558626 | chr2:102862070 | 0.360 | T/A | 0.300 | 1,20E-04 | 0.763 (0.664-0.875) |
| rs67880537 | chr2:102864106 | 0.357 | G/A | 0.297 | 1,02E-04 | 0.603 (0.662-0.873) |
| rs11191568 | chr10:104886374 | 0.122 | A/G | 0.083 | 1,20E-04 | 0.650 (0.521-0.810) |

**aA1/A2: Minor/major allele (based on whole sample)**

**Supplementary Table S2: Minor allelic frequencies of 15 single nucleotide variants in the *TNFAIP3* gene in controls and patients with uni and bilateral sensorineural hearing loss.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNP | POSITION | CONTROL | A1/A2a | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs59693083 | Chr6:138186532 | 0.097 | G/A | 0.083 | 0.836 (0.649-1.078) | 0.166 | 0.093 | 0.947 (0.638-1.406) | 0.788 |
| rs5029926 | Chr6:138189515 | 0.097 | G/A | 0.083 | 0.837 (0.650-1.079) | 0.170 | 0.093 | 0.948 (0.639-1.408) | 0.794 |
| rs583522 | Chr6:138189884 | 0.261 | C/T | 0.273 | 1.060 (0.902-1.244) | 0.478 | 0.267 | 1.028 (0.792-1.334) | 0.832 |
| rs5029928 | Chr6:138189942 | 0.096 | T/C | 0.083 | 0.847 (0.657-1.091) | 0.198 | 0.092 | 0.952 (0.641-1.414) | 0.810 |
| rs3757173 | Chr6:138190154 | 0.096 | G/A | 0.083 | 0.847 (0.657-1.091) | 0.198 | 0.093 | 0.959 (0.646-1.424) | 0.836 |
| rs7750604 | Chr6:138190533 | 0.098 | T/C | 0.084 | 0.840 (0.653-1.081) | 0.174 | 0.095 | 0.965 (0.653-1.425) | 0.859 |
| rs5029930 | Chr6:138190684 | 0.097 | C/A | 0.083 | 0.843 (0.654-1.086) | 0.186 | 0.093 | 0.954 (0.643-1.417) | 0.818 |
| rs5029931 | Chr6:138190816 | 0.055 | C/G | 0.044 | 0.790 (0.563-1.108) | 0.171 | 0.058 | 1.064 (0.652-1.737) | 0.802 |
| rs5029933 | Chr6:138192062 | 0.055 | G/A | 0.044 | 0.782 (0.558-1.097) | 0.153 | 0.059 | 1.065 (0.652-1.738) | 0.800 |
| rs719149 | Chr6:138192745 | 0.096 | A/G | 0.083 | 0.847 (0.657-1.092) | 0.201 | 0.089 | 0.918 (0.615-1.371) | 0.678 |
| rs719150 | Chr6:138192761 | 0.097 | G/A | 0.083 | 0.844 (0.655-1.088) | 0.190 | 0.092 | 0.949 (0.639-1.41) | 0.798 |
| rs629953 | Chr6:138195041 | 0.366 | A/G | 0.354 | 0.951 (0.819-1.104) | 0.512 | 0.358 | 0.964 (0.759-1.225) | 0.767 |
| rs643177 | Chr6:138195693 | 0.270 | T/C | 0.271 | 1.005 (0.855-1.180) | 0.955 | 0.264 | 0.969 (0.746-1.258) | 0.813 |
| rs661561 | Chr6:138197331 | 0.365 | A/C | 0.356 | 0.960 (0.827-1.114) | 0.594 | 0.356 | 0.960 (0.755-1222) | 0.744 |
| rs610604 | Chr6:138199417 | 0.332 | G/T | 0.328 | 0.984 (0.846-1.146) | 0.841 | 0.332 | 1.000 (0.783-1.277) | 0.997 |

**Supplementary Table S3: Minor allelic frequencies of 87 single nucleotide variants in the *TNIP1* gene in controls and patients with uni and bilateral sensorineural hearing loss.**

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| SNP | POSITION | CONTROL | A1 /A2 | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs736775 | Chr5:150409348 | 0.399 | T/C | 0.390 | 0.961 (0.830-1.112) | 0.594 | 0.398 | 0.993 (0.786-1.256) | 0.958 |
| rs2277940 | Chr5:150409477 | 0.076 | C/T | 0.071 | 0.933 (0.709-1.228) | 0.622 | 0.068 | 0.895 (0.568-1.410) | 0.634 |
| rs8177834 | Chr5:150409989 | 0.099 | T/C | 0.098 | 0.991 (0.781-1.258) | 0.943 | 0.080 | 0.788 (0.519-1.199) | 0.265 |
| rs3924 | Chr5:150410135 | 0.402 | G/A | 0.401 | 0.998 (0.863-1.155) | 0.980 | 0.410 | 1.036 (0.818-1.313) | 0.767 |
| rs2233311 | Chr5:150410219 | 0.101 | T/G | 0.098 | 0.972 (0.766-1.234) | 0.821 | 0.080 | 0.774 (0.509-1.176) | 0.229 |
| rs10463311 | Chr5:150410835 | 0.295 | G/A | 0.300 | 1.025 (0.877-1.197) | 0.757 | 0.321 | 1.128 (0.881-1.444) | 0.336 |
| rs10463312 | Chr5:150410894 | 0.401 | T/C | 0.400 | 0.993 (0.858-1.149) | 0.928 | 0.407 | 1.024 (0.810-1.293) | 0.845 |
| rs3763009 | Chr5:150412140 | 0.315 | A/G | 0.357 | 1.207 (1.039-1.402) | 0.013 | 0.299 | 0.928 (0.723-1.193) | 0.561 |
| rs72790107 | Chr5:150412836 | 0.100 | T/C | 0.098 | 0.985 (0.776-1.250) | 0.904 | 0.077 | 0.756 (0.494-1.158) | 0.197 |
| rs2233305 | Chr5:150413406 | 0.214 | A/C | 0.213 | 0.993 (0.835-1.182) | 0.942 | 0.248 | 1.211 (0.926-1.583) | 0.159 |
| rs60602178 | Chr5:150413528 | 0.078 | G/A | 0.074 | 0.946 (0.723-1.240) | 0.690 | 0.077 | 0.979 (0.637-1.505) | 0.923 |
| rs11747926 | Chr5:150414388 | 0.191 | A/G | 0.182 | 0.941 (0.783-1.131) | 0.520 | 0.206 | 1.103 (0.830-1.466) | 0.498 |
| rs11748040 | Chr5:150414945 | 0.124 | A/G | 0.122 | 0.986 (0.794-1.226) | 0.905 | 0.140 | 1.156 (0.828-1.614) | 0.393 |
| rs11748041 | Chr5:150414960 | 0.204 | A/C | 0.186 | 0.893 (0.744-1.071) | 0.221 | 0.206 | 1.017 (0.766-1.350) | 0.907 |
| rs2287720 | Chr5:150415338 | 0.398 | C/T | 0.398 | 1.001 (0.864-1.159) | 0.985 | 0.402 | 1.018 (0.803-1.289) | 0.883 |
| rs72790109 | Chr5:150418221 | 0.098 | A/G | 0.095 | 0.968 (0.761-1.232) | 0.794 | 0.080 | 0.802 (0.527-1.219) | 0.301 |
| rs62382333 | Chr5:150418959 | 0.076 | C/T | 0.072 | 0.938 (0.714-1.232) | 0.646 | 0.067 | 0.875 (0.556-1.378) | 0.565 |
| rs56661379 | Chr5:150419962 | 0.077 | C/T | 0.072 | 0.930 (0.708-1.222) | 0.604 | 0.070 | 0.910 (0.583-1.421) | 0.681 |
| rs72790110 | Chr5:150420038 | 0.099 | A/G | 0.098 | 0.989 (0.779-1.255) | 0.928 | 0.080 | 0.787 (0.517-1.196) | 0.261 |
| rs9324672 | Chr5:150420056 | 0.105 | A/C | 0.111 | 1.066 (0.849-1.338) | 0.582 | 0.089 | 0.834 (0.559-1.244) | 0.374 |

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| SNP | POSITION | CONTROL | A1 /A2 | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs3805434 | Chr5:150420339 | 0.173 | C/G | 0.164 | 0.938 (0.775-1.137) | 0.517 | 0.182 | 1.062 (0.788-1.431) | 0.691 |
| rs4958876 | Chr5:150422765 | 0.131 | A/C | 0.131 | 1.001 (0.810-1.236) | 0.995 | 0.158 | 1.248 (0.908-1.715) | 0.171 |
| rs10051105 | Chr5:150423459 | 0.074 | G/A | 0.067 | 0.901 (0.681-1.193) | 0.468 | 0.070 | 0.951 (0.609-1.486) | 0.826 |
| rs62382335 | Chr5:150425032 | 0.080 | T/A | 0.077 | 0.962 (0.738-1.256) | 0.780 | 0.070 | 0.878 (0.563-1.370) | 0.566 |
| rs2233299 | Chr5:150425467 | 0.282 | A/G | 0.240 | 0.806 (0.684-0.951) | 0.010 | 0.285 | 1.018 (0.789-1.314) | 0.889 |
| rs2161359 | Chr5:150426534 | 0.322 | A/G | 0.352 | 1.146 (0.986-1.332) | 0.075 | 0.296 | 0.885 (0.689-1.138) | 0.343 |
| rs11747787 | Chr5:150426868 | 0.482 | A/C | 0.439 | 0.840 (0.728-0.970) | 0.017 | 0.478 | 0.983 (0.781-1.239) | 0.889 |
| rs7734456 | Chr5:150427172 | 0.392 | C/G | 0.429 | 1.167 (1.010-1.348) | 0.036 | 0.366 | 0.896 (0.706-1.138) | 0.370 |
| rs12655899 | Chr5:150428157 | 0.079 | A/G | 0.077 | 0.971 (0.745-1.267) | 0.831 | 0.074 | 0.927 (0.599-1.436) | 0.736 |
| rs4292439 | Chr5:150428195 | 0.204 | C/T | 0.199 | 0.964 (0.807-1.153) | 0.693 | 0.231 | 1.170 (0.890-1.537) | 0.260 |
| rs13153275 | Chr5:150428399 | 0.282 | C/G | 0.243 | 0.816 (0.692-0.962) | 0.015 | 0.284 | 1.005 (0.779-1.297) | 0.968 |
| rs72790117 | Chr5:150428746 | 0.099 | A/G | 0.095 | 0.958 (0.753-1.220) | 0.732 | 0.080 | 0.788 (0.519-1.199) | 0.265 |
| rs2233297 | Chr5:150429240 | 0.071 | C/T | 0.067 | 0.937 (0.707-1.242) | 0.651 | 0.070 | 0.989 (0.632-1.546) | 0.961 |
| rs2233294 | Chr5:150429563 | 0.222 | C/A | 0.190 | 0.820 (0.685-0.980) | 0.029 | 0.220 | 0.987 (0.748-1.304) | 0.931 |
| rs7713567 | Chr5:150430955 | 0.324 | T/C | 0.298 | 0.885 (0.758-1.034) | 0.123 | 0.347 | 1.110 (0.871-1.414) | 0.397 |
| rs888989 | Chr5:150431030 | 0.192 | C/T | 0.177 | 0.903 (0.751-1.088) | 0.284 | 0.169 | 0.858 (0.633-1.164) | 0.326 |
| rs2112635 | Chr5:150432153 | 0.319 | C/T | 0.298 | 0.906 (0.776-1.058) | 0.213 | 0.306 | 0.940 (0.732-1.208) | 0.630 |
| rs871269 | Chr5:150432388 | 0.316 | T/C | 0.336 | 1.096 (0.941-1.276) | 0.235 | 0.330 | 1.067 (0.835-1.362) | 0.604 |
| rs17111695 | Chr5:150432446 | 0.124 | C/T | 0.126 | 1.017 (0.820-1.261) | 0.874 | 0.124 | 0.996 (0.703-1.413) | 0.985 |
| rs34294852 | Chr5:150433447 | 0.223 | C/T | 0.222 | 0.996 (0.839-1.183) | 0.964 | 0.248 | 1.150 (0.877-1.507) | 0.310 |
| rs6895271 | Chr5:150434421 | 0.220 | T/C | 0.220 | 0.999 (0.841-1.187) | 0.993 | 0.246 | 1.161 (0.888-1.516) | 0.274 |
| rs4958879 | Chr5:150434422 | 0.453 | G/A | 0.441 | 0.952 (0.825-1.099) | 0.505 | 0.450 | 0.989 (0.785-1.246) | 0.925 |
| rs3792794 | Chr5:150434722 | 0.068 | T/C | 0.071 | 1.052 (0.796-1.389) | 0.722 | 0.055 | 0.804 (0.489-1.322) | 0.389 |
| rs6579837 | Chr5:150434894 | 0.102 | T/G | 0.104 | 1.029 (0.814-1.299) | 0.810 | 0.101 | 0.997 (0.682-1.458) | 0.990 |

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| SNP | POSITION | CONTROL | A1/A2 | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs3805433 | Chr5:150435480 | 0.251 | G/C | 0.239 | 0.933 (0.790-1.103) | 0.419 | 0.274 | 1.125 (0.869-1.456) | 0.371 |
| rs62382336 | Chr5:150435525 | 0.064 | A/G | 0.061 | 0.951 (0.709-1.277) | 0.740 | 0.081 | 1.281 (0.835-1.963) | 0.254 |
| rs12516176 | Chr5:150435645 | 0.251 | C/T | 0.239 | 0.935 (0.792-1.105) | 0.432 | 0.273 | 1.119 (0.863-1.450) | 0.394 |
| rs12518386 | Chr5:150438085 | 0.220 | A/G | 0.220 | 0.999 (0.841-1.187) | 0.998 | 0.246 | 1.158 (0.885-1.515) | 0.284 |
| rs4958435 | Chr5:150438284 | 0.449 | T/G | 0.433 | 0.935 (0.810-1.080) | 0.362 | 0.432 | 0.930 (0.737-1.173) | 0.540 |
| rs4958880 | Chr5:150438477 | 0.195 | A/C | 0.195 | 0.995 (0.831-1.191) | 0.958 | 0.158 | 0.772 (0.565-1.056) | 0.105 |
| rs1422673 | Chr5:150438988 | 0.196 | T/C | 0.194 | 0.987 (0.824-1.182) | 0.887 | 0.160 | 0.781 (0.572-1.066) | 0.118 |
| rs2042234 | Chr5:150439131 | 0.096 | G/A | 0.095 | 0.987 (0.774-1.258) | 0.917 | 0.078 | 0.799 (0.522-1.225) | 0.303 |
| rs3805431 | Chr5:150439539 | 0.067 | A/G | 0.070 | 1.056 (0.798-1.398) | 0.701 | 0.055 | 0.818 (0.497-1.345) | 0.427 |
| rs2233287 | Chr5:150440097 | 0.098 | A/G | 0.096 | 0.977 (0.767-1.244) | 0.850 | 0.083 | 0.830 (0.549-1.254) | 0.376 |
| rs17728260 | Chr5:150443005 | 0.078 | G/A | 0.087 | 1.135 (0.878-1.466) | 0.332 | 0.068 | 0.872 (0.554-1.373) | 0.555 |
| rs17111708 | Chr5:150443507 | 0.097 | A/G | 0.098 | 1.006 (0.791-1.279) | 0.958 | 0.086 | 0.881 (0.587-1.324) | 0.543 |
| rs73272818 | Chr5:150444843 | 0.098 | C/T | 0.099 | 1.005 (0.791-1.276) | 0.967 | 0.086 | 0.865 (0.576-1.298) | 0.483 |
| rs10057690 | Chr5:150445215 | 0.101 | C/T | 0.105 | 1.046 (0.828-1.320) | 0.708 | 0.089 | 0.869 (0.583-1.298) | 0.494 |
| rs1559127 | Chr5:150446753 | 0.129 | C/T | 0.124 | 0.958 (0.773-1.189) | 0.700 | 0.121 | 0.928 (0.653-1.321) | 0.681 |
| rs6880110 | Chr5:150447090 | 0.158 | G/A | 0.144 | 0.891 (0.729-1.090) | 0.263 | 0.138 | 0.854 (0.614-1.188) | 0.349 |
| rs4958881 | Chr5:150450236 | 0.127 | C/T | 0.116 | 0.904 (0.725-1.126) | 0.368 | 0.112 | 0.867 (0.603-1.248) | 0.443 |
| rs75805068 | Chr5:150451075 | 0.099 | T/A | 0.097 | 0.985 (0.775-1.251) | 0.901 | 0.093 | 0.933 (0.628-1.385) | 0.730 |
| rs3792785 | Chr5:150451650 | 0.105 | C/T | 0.101 | 0.963 (0.762-1.219) | 0.758 | 0.092 | 0.868 (0.585-1.287) | 0.481 |
| rs13160369 | Chr5:150452196 | 0.164 | C/G | 0.141 | 0.834 (0.681-1.021) | 0.078 | 0.142 | 0.839 (0.605-1.165) | 0.295 |
| rs6869605 | Chr5:150452866 | 0.136 | C/A | 0.123 | 0.890 (0.718-1.103) | 0.288 | 0.126 | 0.915 (0.648-1.291) | 0.614 |

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| SNP | POSITION | CONTROL | A1 / A2 | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs17111727 | Chr5:150455442 | 0.064 | G/A | 0.047 | 0.730 (0.529-1.008) | 0.055 | 0.058 | 0.903 (0.555-1.469) | 0.682 |
| rs3792784 | Chr5:150455672 | 0.106 | G/A | 0.100 | 0.939 (0.741-1.190) | 0.604 | 0.092 | 0.860 (0.580-1.276) | 0.455 |
| rs3792782 | Chr5:150456677 | 0.464 | T/C | 0.451 | 0.946 (0.820-1.092) | 0.450 | 0.459 | 0.980 (0.778-1.235) | 0.867 |
| rs6889239 | Chr5:150457771 | 0.249 | C/T | 0.243 | 0.967 (0.819-1.141) | 0.692 | 0.209 | 0.795 (0.599-1.054) |  0.110 |
| rs4958438 | Chr5:150461069 | 0.088 | G/A | 0.101 | 1.160 (0.913-1.473) | 0.224 | 0.080 | 0.893 (0.586-1.360) | 0.598 |
| rs28372811 | Chr5:150461285 | 0.081 | G/A | 0.098 | 1.233 (0.964-1.575) | 0.093 | 0.067 | 0.826 (0.525-1.299) | 0.408 |
| rs13168551 | Chr5:150462638 | 0.396 | G/A | 0.382 | 0.943 (0.815-1.093) | 0.438 | 0.382 | 0.942 (0.743-1.194) | 0.622 |
| rs62383767 | Chr5:150462705 | 0.091 | A/G | 0.086 | 0.939 (0.729-1.209) | 0.626 | 0.055 | 0.586 (0.358-0.959) | 0.031 |
| rs7702954 | Chr5:150463695 | 0.502 | G/C | 0.479 | 0.910 (0.789-1.051) | 0.200 | 0.481 | 0.938 (0.746-1.181) | 0.590 |
| rs115682037 | Chr5:150464017 | 0.070 | G/A | 0.071 | 1.016 (0.770-1.341) | 0.908 | 0.077 | 1.110 (0.720-1.710) | 0.636 |
| rs75851973 | Chr5:150464579 | 0.065 | G/A | 0.055 | 0.839 (0.619-1.138) | 0.259 | 0.068 | 1.049 (0.664-1.657) | 0.836 |
| rs76956521 | Chr5:150464641 | 0.064 | C/A | 0.055 | 0.859 (0.633-1.166) | 0.328 | 0.071 | 1.119 (0.713-1.753) | 0.624 |
| rs4958883 | Chr5:150465247 | 0.419 | A/G | 0.416 | 0.987 (0.854-1.141) | 0.860 | 0.437 | 1.077 (0.853-1.358) | 0.533 |
| rs918499 | Chr5:150465555 | 0.419 | A/G | 0.415 | 0.983 (0.851-1.137) | 0.824 | 0.434 | 1.063 (0.842-1.341) | 0.606 |
| rs2017638 | Chr5:150465603 | 0.414 | G/A | 0.417 | 1.014 (0.877-1.172) | 0.851 | 0.432 | 1.076 (0.853-1.357) | 0.537 |
| rs3792780 | Chr5:150466193 | 0.360 | C/A | 0.365 | 1.019 (0.878-1.181) | 0.808 | 0.385 | 1.110 (0.875-1.406) | 0.388 |
| rs3792779 | Chr5:150466385 | 0.364 | C/A | 0.364 | 0.996 (0.859-1.156) | 0.964 | 0.385 | 1.091 (0.860-1.382) | 0.472 |
| rs2287724 | Chr5:150466498 | 0.360 | G/A | 0.365 | 1.025 (0.884-1.189) | 0.741 | 0.385 | 1.116 (0.881-1.413) | 0.362 |
| rs2287725 | Chr5:150466504 | 0.431 | G/A | 0.420 | 0.957 (0.828-1.105) | 0.549 | 0.453 | 1.094 (0.868-1.378) | 0.443 |
| rs2233279 | Chr5:150467170 | 0.360 | C/T | 0.363 | 1.011 (0.871-1.173) | 0.884 | 0.385 | 1.111 (0.876-1.408) | 0.383 |
| rs2233278 | Chr5:150467189 | 0.065 | C/G | 0.051 | 0.777 (0.568-1.063) | 0.113 | 0.07 | 1.084 (0.692-1.697) | 0.724 |
| rs2233274 | Chr5:150467475 | 0.364 | C/T | 0.362 | 0.991 (0.854-1.150) | 0.908 | 0.382 | 1.082 (0.854-1.371) | 0.512 |
| rs75970310 | Chr5:150468123 | 0.140 | G/A | 0.138 | 0.979 (0.797-1.203) | 0.841 | 0.188 | 1.419 (1.054-1.911) | 0.020 |

**Supplementary Table S4: Minor allelic frequencies of 16 single nucleotide variants in the *REL* gene in controls and patients with uni and bilateral sensorineural hearing loss.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNP | POSITION | CONTROL | A1 /A2 | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs67574266 | Chr2:61108829 | 0.382 | A/G | 0.383 | 1.004 (0.866-1.163) | 0.957 | 0.363 | 0.922 (0.726-1.172) | 0.509 |
| rs842650 | Chr2:61108996 | 0.097 | A/T | 0.104 | 1.075 (0.849-1.360) | 0.549 | 0.108 | 1.120 (0.772-1.623) | 0.550 |
| rs6545835 | Chr2:61112552 | 0.255 | T/G | 0.243 | 0.934 (0.792-1.103) | 0.420 | 0.282 | 1.146 (0.886-1.481) | 0.297 |
| rs77787761 | Chr2:61116257 | 0.096 | G/A | 0.105 | 1.111 (0.879-1.404) | 0.377 | 0.108 | 1.139 (0.785-1.651) | 0.492 |
| rs842648 | Chr2:61116481 | 0.095 | C/T | 0.105 | 1.115 (0.881-1.409) | 0.363 | 0.108 | 1.142 (0.787-1.657) | 0.482 |
| rs12713428 | Chr2:61118113 | 0.257 | C/A | 0.244 | 0.930 (0.789-1.098) | 0.395 | 0.277 | 1.109 (0.857-1.433) | 0.431 |
| rs34493725 | Chr2:61118309 | 0.243 | T/C | 0.222 | 0.888 (0.749-1.053) | 0.172 | 0.212 | 0.837 (0.632-1.109) | 0.214 |
| rs10185028 | Chr2:61118739 | 0.255 | G/A | 0.245 | 0.945 (0.801-1.115) | 0.504 | 0.277 | 1.120 (0.866-1.448) | 0.387 |
| rs10193964 | Chr2:61126664 | 0.264 | G/A | 0.256 | 0.962 (0.817-1.132) | 0.640 | 0.284 | 1.104 (0.855-1.424) | 0.448 |
| rs6707682 | Chr2:61128268 | 0.268 | A/G | 0.242 | 0.871 (0.739-1.028) | 0.103 | 0.284 | 1.082 (0.838-1.396) | 0.545 |
| rs9752570 | Chr2:61132029 | 0.263 | T/A | 0.242 | 0.896 (0.759-1.057) | 0.192 | 0.280 | 1.092 (0.845-1.411) | 0.499 |
| rs7604989 | Chr2:61133793 | 0.262 | G/A | 0.249 | 0.929 (0.788-1.095) | 0.382 | 0.284 | 1.112 (0.861-1.435) | 0.416 |
| rs72807480 | Chr2:61134764 | 0.260 | C/A | 0.249 | 0.940 (0.798-1.108) | 0.464 | 0.287 | 1.142 (0.885-1.473) | 0.306 |
| rs13031237 | Chr2:61136129 | 0.378 | T/G | 0.379 | 1.004 (0.866-1.163) | 0.959 | 0.357 | 0.912 (0.717-1.160) | 0.452 |
| rs34683507 | Chr2:61151333 | 0.212 | T/C | 0.203 | 0.944 (0.791-1.127) | 0.527 | 0.203 | 0.945 (0.711-1.257) | 0.701 |
| rs36047498 | Chr2:61151661 | 0.123 | A/T | 0.125 | 1.015 (0.818-1.258) | 0.894 | 0.117 | 0.939 (0.658-1.341) | 0.731 |

**Supplementary Table S5: Minor allelic frequencies of 34 single nucleotide variants in the *UBE2L3* gene in controls and patients with uni and bilateral sensorineural hearing loss.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNP | POSITION | CONTROL | A1 / A2 | UNILATERAL | OR (95% CI) | P | BILATERAL | OR (95% CI) | P |
| rs131654 | Chr22:21917190 | 0.289 | G/T | 0.295 | 1.027 (0.878-1.201) | 0.737 | 0.243 | 0.791 (0.606-1.032) | 0.083 |
| rs131665 | Chr22:21920903 | 0.203 | C/T | 0.203 | 1.000 (0.837-1.194) | 0.999 | 0.231 | 1.179 (0.895-1.552) | 0.241 |
| rs140489 | Chr22:21921294 | 0.217 | T/C | 0.213 | 0.978 (0.822-1.164) | 0.804 | 0.240 | 1.144 (0.873-1.498) | 0.327 |
| rs2266959 | Chr22:21922904 | 0.199 | T/G | 0.202 | 1.021 (0.854-1.219) | 0.820 | 0.220 | 1.138 (0.861-1.504) | 0.362 |
| rs140492 | Chr22:21923144 | 0.210 | C/A | 0.212 | 1.017 (0.854-1.210) | 0.851 | 0.240 | 1.193 (0.911-1.562) | 0.199 |
| rs2256609 | Chr22:21925017 | 0.203 | G/A | 0.202 | 0.998 (0.835-1.192) | 0.984 | 0.220 | 1.109 (0.839-1.466) | 0.467 |
| rs79858848 | Chr22:21926884 | 0.092 | G/A | 0.082 | 0.878 (0.680-1.134) | 0.318 | 0.095 | 1.035 (0.700-1.530) | 0.862 |
| rs140498 | Chr22:21927064 | 0.205 | A/G | 0.204 | 0.995 (0.834-1.188) | 0.963 | 0.232 | 1.176 (0.894-1546) | 0.244 |
| rs140499 | Chr22:21927231 | 0.205 | T/C | 0.203 | 0.993 (0.832-1.185) | 0.939 | 0.228 | 1.148 (0.872-1.510) | 0.325 |
| rs2266961 | Chr22:21928597 | 0.198 | C/G | 0.203 | 1.031 (0.863-1.231) | 0.733 | 0.220 | 1.142 (0.864-1.508) | 0.351 |
| rs181360 | Chr22:21928916 | 0.204 | C/A | 0.203 | 0.994 (0.833-1.186) | 0.947 | 0.228 | 1.149 (0.873-1.511) | 0.321 |
| rs181362 | Chr22:21932068 | 0.210 | T/C | 0.213 | 1.018 (0.855-1.211) | 0.841 | 0.240 | 1.190 (0.908-1.559) | 0.205 |
| rs181363 | Chr22:21932264 | 0.210 | G/A | 0.212 | 1.014 (0.852-1.207) | 0.874 | 0.240 | 1.190 (0.908-1.558) | 0.205 |
| rs181366 | Chr22:21933780 | 0.218 | A/G | 0.203 | 0.915 (0.768-1.092) | 0.327 | 0.228 | 1.058 (0.804-1.392) | 0.685 |
| rs5754217 | Chr22:21939675 | 0.217 | T/G | 0.213 | 0.976 (0.820-1.162) | 0.786 | 0.240 | 1.142 (0.871-1.495) | 0.335 |
| rs12484550 | Chr22:21941915 | 0.198 | T/C | 0.203 | 1.033 (0.864-1.233) | 0.722 | 0.217 | 1.123 (0.848-1.485) | 0.418 |
| rs5998599 | Chr22:21941981 | 0.202 | G/A | 0.203 | 1.011 (0.847-1.206) | 0.904 | 0.219 | 1.107 (0.838-1.463) | 0.471 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNP | POSITION | CONTROL | A1/A2 | UNILATERAL | OR(95%CI) | P | BILATERAL | OR(95% CI) | P |
| rs9621715 | Chr22:21942007 | 0.198 | A/G | 0.203 | 1.030 (0.863-1.230) | 0.740 | 0.217 | 1.120 (0.846-1.482) | 0.426 |
| rs2283789 | Chr22:21944478 | 0.208 | G/T | 0.204 | 0.978 (0.819-1.167) | 0.805 | 0.226 | 1.115 (0.846-1.470) | 0.437 |
| rs5998619 | Chr22:21945851 | 0.203 | A/G | 0.204 | 1.009 (0.845-1.204) | 0.921 | 0.220 | 1.110 (0.840-1.466) | 0.461 |
| rs73166630 | Chr22:21945978 | 0.201 | A/G | 0.203 | 1.013 (0.849-1.210) | 0.882 | 0.225 | 1.154 (0.875-1.520) | 0.309 |
| rs73166632 | Chr22:21946173 | 0.203 | G/A | 0.204 | 1.004 (0.841-1.198) | 0.966 | 0.226 | 1.145 (0.868-1.508) | 0.336 |
| rs2070512 | Chr22:21949411 | 0.210 | C/A | 0.212 | 1.017 (0.854-1.210) | 0.851 | 0.240 | 1.193 (0.911-1.562) | 0.199 |
| rs2283790 | Chr22:21956653 | 0.204 | G/A | 0.203 | 0.999 (0.837-1.192) | 0.991 | 0.231 | 1.175 (0.893-1.544) | 0.247 |
| rs11089629 | Chr22:21958872 | 0.208 | G/T | 0.213 | 1.030 (0.865-1.226) | 0.742 | 0.242 | 1.211 (0.924-1.587) | 0.164 |
| rs4821108 | Chr22:21959038 | 0.213 | C/G | 0.202 | 0.936 (0.784-1.117) | 0.465 | 0.225 | 1.070 (0.812-1.409) | 0.632 |
| rs4821112 | Chr22:21964761 | 0.205 | A/G | 0.204 | 0.991 (0.831-1.183) | 0.922 | 0.229 | 1.151 (0.874-1.514) | 0.316 |
| rs5754352 | Chr22:21964951 | 0.207 | T/C | 0.203 | 0.981 (0.822-1.171) | 0.834 | 0.226 | 1.123 (0.852-1.480) | 0.408 |
| rs5998672 | Chr22:21966442 | 0.211 | A/G | 0.212 | 1.006 (0.845-1.198) | 0.944 | 0.242 | 1.190 (0.908-1.559) | 0.205 |
| rs738127 | Chr22:21968221 | 0.205 | A/G | 0.203 | 0.991 (0.831-1.184) | 0.928 | 0.228 | 1.146 (0.871-1.508) | 0.329 |
| rs738129 | Chr22:21971041 | 0.212 | T/C | 0.215 | 1.016 (0.854-1.208) | 0.857 | 0.240 | 1.174 (0.896-1.538) | 0.242 |
| rs4821116 | Chr22:21973319 | 0.199 | T/C | 0.203 | 1.027 (0.860-1.226) | 0.768 | 0.216 | 1.108 (0.837-1.465) | 0.473 |
| rs7444 | Chr22:21976934 | 0.209 | C/T | 0.203 | 0.960 (0.803-1.148) | 0.656 | 0.232 | 1.143 (0.868-1.506) | 0.339 |
| rs7445 | Chr22:21977047 | 0.207 | T/C | 0.205 | 0.987 (0.828-1.177) | 0.887 | 0.231 | 1.150 (0.875-1.511) | 0.315 |

**Supplementary Table S6: Minor allelic frequencies of 9 single nucleotide variants in the *NFKB1* gene in controls and patients with uni and bilateral sensorineural hearing loss.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNP | POSITION | CONTROL | A1/A2 | UNILATERAL | OR(95%CI) | P | BILATERAL | OR(95% CI) | P |
| rs6533014 | Chr4:103349740 | 0.491 | G/A | 0.476 | 0.942 (0.817-1.088) | 0.418 | 0.453 | 0.859 (0.681-1.083) | 0.197 |
| rs6846971 | Chr4:103359744 | 0.214 | T/C | 0.218 | 1.024 (0.860-1.217) | 0.791 | 0.214 | 1.000 (0.755-1.325) | 0.998 |
| rs17032705 | Chr4:103432974 | 0.361 | A/G | 0.370 | 1.041 (0.897-1.207) | 0.594 | 0.315 | 0.814 (0.635-1.043) | 0.103 |
| rs3774937 | Chr4:103434253 | 0.323 | C/T | 0.317 | 0.970 (0.832-1.131) | 0.700 | 0.260 | 0.736 (0.567-0.956) | 0.021 |
| rs4648011 | Chr4:103475444 | 0.363 | G/T | 0.373 | 1.043 (0.898-1.210) | 0.581 | 0.335 | 0.882 (0.691-1.126) | 0.315 |
| rs13117745 | Chr4:103478703 | 0.164 | T/C | 0.152 | 0.918 (0.754-1.118) | 0.397 | 0.192 | 1.213 (0.904-1.628) | 0.196 |
| rs4648090 | Chr4:103527068 | 0.167 | A/G | 0.151 | 0.888 (0.730-1.082) | 0.239 | 0.137 | 0.792 (0.568-1.105) | 0.169 |
| rs4648128 | Chr4:103536024 | 0.067 | G/A | 0.064 | 0.958 (0.718-1.279) | 0.775 | 0.046 | 0.674 (0.393-1.155) | 0.148 |
| rs230547 | Chr4:103536261 | 0.100 | T/C | 0.091 | 0.897 (0.702-1.147) | 0.386 | 0.103 | 1.031 (0.705-1.507) | 0.875 |

**Supplementary figure S1: Scatter plot showing the principal component analysis (PCA) in our Spanish samples compared with different populations in HapMap. The eigenvalues for the first three principal components accounted for most of the population substructure in this analysis (77.5%). All individuals who were not clustering with the main cluster (> 3 Standard deviation from cluster center) were excluded from subsequent analysis. Using this method we identified a total of 48 outliers individuals in our case-control cohort. X-axis represents Principal Component 1 (PC1) and Y-axis represents Principal Component 3 (PC3) in our Spanish samples (diamonds), and the main populations in HapMap: CEU, Northern European from Utah (squares), CHB+JPB, Chinese in Beijing+ Japanese in Tokyo (triangles), MEX (crosses), TSI, Tuscans from Italy (asterisks) and YRI, Yoruba in Ibadan, Nigeria (circles).**

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