

Supplementary Table 1. Included *FBNI* variants

| Variant code | Exon | Nucleotide Change | Predicted Protein Change | Type of <i>FBNI</i> variants | Classification of <i>FBNI</i> variants | Number of cases | Effect Group | Class | Reference |
|--------------|------|-------------------------------------|--------------------------|------------------------------|--|-----------------|-------------------------------|-------|-------------------------------|
| v1 | 2 | NM_000138.4:c.111delC | p.(Arg38Glnfs*70) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v2 | 2 | NM_000138.4:c.2T>A | p.Met1Lys | PTC | PTV | 1 | Initiation codon variant | P | rs1057516934 |
| v3 | 3 | NM_000138.4:c.239G>A | p.(Cys80Tyr) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs397515767 |
| v4 | 4 | NM_000138.4:c.280T>C | p.(Cys94Arg) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v5 | 5 | NM_000138.4:c.347-2A>G | Exon 5 deletion | IFES | PTV | 2 | splice-site ±1-2 | P | rs1555405056 |
| v6 | 5 | NM_000138.4:c.364C>T | p.(Arg122Cys) | Missense | non-PTV | 3 | Cys outside cb-EGF or cb-site | LP | rs137854467 |
| v7 | 5 | NM_000138.4:c.385T>G | p.(Cys129Gly) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs199474693 |
| v8 | 5 | NM_000138.4:c.386G>A | p.(Cys129Tyr) | Missense | non-PTV | 3 | Cys outside cb-EGF or cb-site | LP | rs1566935517 |
| v9 | 5 | NM_000138.4:c.433T>C | p.(Cys145Arg) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs1555405031 |
| v10 | 5 | NM_000138.4:c.400T>G | p.(Cys134Gly) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Attanasio et al. ² |
| v11 | 6 | NM_000138.4:c.493C>T | p.(Arg165*) | PTC | PTV | 1 | Nonsense | P | rs113905529 |
| v12 | 6 | NM_000138.4:c.502T>C | p.(Cys168Arg) | Missense | non-PTV | 2 | Cys outside cb-EGF or cb-site | LP | Jin et al. ³ |
| v13 | 7 | NM_000138.4:c.718C>T | p.(Arg240Cys) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs137854480 |
| v14 | 9 | NM_000138.4:c.923_926delTCAG | p.(Val308Alafs*21) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v15 | 9 | NM_000138.4:c.939C>G | p.(Cys313Trp) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555401007 |
| v16 | 9 | NM_000138.4:c.953delG | p.(Gly318Valfs*12) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v17 | 10 | NM_000138.4:c.1129T>G | p.(Cys377Gly) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v18 | 10 | NM_000138.4:c.1090C>T | p.(Arg364*) | PTC | PTV | 2 | Nonsense | P | rs794728165 |
| v19 | 11 | NM_000138.4:c.1285C>T | p.(Arg429*) | PTC | PTV | 2 | Nonsense | P | rs112645512 |
| v20 | 12 | NM_000138.4:c.1416C>G | p.(Tyr472*) | PTC | PTV | 2 | Nonsense | P | Takeda et al. ¹ |
| v21 | 12 | NM_000138.4:c.1468+5G>A | Exon 12 deletion | IFES | PTV | 1 | splice-site non±1-2 | LP | rs397515757 |
| v22 | 13 | NM_000138.4:c.1495T>C | p.(Cys499Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Schrijver et al. ⁴ |
| v23 | 13 | NM_000138.4:c.1585C>T | p.(Arg529*) | PTC | PTV | 2 | Nonsense | P | rs137854476 |
| v24 | 13 | NM_000138.4:c.1477G>T | p.(Glu493*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v25 | 14 | NM_000138.4:c.1623C>A | p.(Cys541*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v26 | 14 | NM_000138.4:c.1637G>T | p.(Cys546Phe) | Missense | non-PTV | 4 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v27 | 14 | NM_000138.4:c.1709G>C | p.(Cys570Ser) | Missense | non-PTV | 2 | Cys in cb-EGF | LP | Ogawa et al. ⁵ |
| v28 | 14 | NM_000138.4:c.1693C>T | p.(Arg565*) | PTC | PTV | 1 | Nonsense | P | rs113422242 |
| v29 | 14 | NM_000138.4:c.1664G>A | p.(Cys555Tyr) | Missense | non-PTV | 2 | Cys in cb-EGF | LP | rs794728172 |
| v30 | 15 | NM_000138.4:c.1786T>G | p.(Cys596Gly) | Missense | non-PTV | 2 | Cys in cb-EGF | LP | rs1057520131 |
| v31 | 16 | NM_000138.4:c.1879C>T | p.(Arg627Cys) | Missense | non-PTV | 1 | Cys in cb-EGF (creating Cys) | LP | rs727503057 |
| v32 | 16 | NM_000138.4:c.1904A>G | p.(Tyr635Cys) | Missense | non-PTV | 5 | Cys in cb-EGF (creating Cys) | LP | rs1555399816 |
| v33 | 16 | NM_000138.4:c.1910G>A | p.(Cys637Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Zhao et al. ⁶ |
| v34 | 16 | NM_000138.4:c.1949G>A | p.(Arg650His) | Missense | non-PTV | 1 | Other missense | LP | Takeda et al. ¹ |
| v35 | 16 | NM_000138.4:c.1955G>A | p.(Cys652Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Comeglio et al. ⁷ |
| v36 | 16 | NM_000138.4:c.1911T>G | p.(Cys637Trp) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Ogawa et al. ⁵ |
| v37 | 17 | NM_000138.4:c.1980delA | p.(Cys661Alafs*57) | PTC | PTV | 2 | Frameshift | P | Takeda et al. ¹ |
| v38 | 17 | NM_000138.4:c.2025_2026delTTTC | p.(Phe675Valfs*42) | PTC | PTV | 1 | Frameshift | P | na |
| v39 | 17 | NM_000138.4:c.2111C>G | p.(Ser704*) | PTC | PTV | 1 | Nonsense | P | na |
| v40 | 17 | NM_000138.4:c.2113+3A>C | Exon 17 deletion | IFES | PTV | 1 | splice-site non±1-2 | LP | Ogawa et al. ⁵ |
| v41 | 18 | NM_000138.4:c.2153dupC | p.(Ser719Valfs*5) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v42 | 18 | NM_000138.4:c.2121T>G | p.(Tyr707*) | PTC | PTV | 1 | Nonsense | P | na |
| v43 | 19 | NM_000138.4:c.2201G>T | p.(Cys734Phe) | Missense | non-PTV | 2 | Cys in cb-EGF | LP | rs794728187 |
| v44 | 19 | NM_000138.4:c.2237A>G | p.(Tyr746Cys) | Missense | non-PTV | 2 | Cys in cb-EGF (creating Cys) | LP | rs1555399372 |
| v45 | 19 | NM_000138.4:c.2293+1G>C | Exon 19 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | Ogawa et al. ⁵ |
| v46 | 20 | NM_000138.4:c.2413T>G | p.(Cys805Gly) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v47 | 20 | NM_000138.4:c.2413T>C | p.(Cys805Arg) | Missense | non-PTV | 2 | Cys in cb-EGF | LP | na |
| v48 | 20 | NM_000138.4:c.2306G>A | p.(Cys769Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs794728190 |
| v49 | 20 | NM_000138.4:c.2302G>T | p.(Glu768*) | PTC | PTV | 1 | Nonsense | P | na |
| v50 | 21 | NM_000138.4:c.2447G>T | p.(Cys816Phe) | Missense | non-PTV | 2 | Cys in cb-EGF | LP | rs397515770 |
| v51 | 21 | NM_000138.4:c.2538_2539+5delAGGTATT | Exon 21 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | Takeda et al. ¹ |
| v52 | 22 | NM_000138.4:c.2586T>G | p.(Cys862Trp) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v53 | 22 | NM_000138.4:c.2638G>A | p.(Gly880Ser) | Missense | non-PTV | 1 | Other missense | LP | rs794728194 |
| v54 | 22 | NM_000138.4:c.2561G>A | p.(Trp854*) | PTC | PTV | 1 | Nonsense | P | rs1597568968 |
| v55 | 22 | NM_000138.4:c.2651delG | p.(Gly884Glnfs*28) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v56 | 22 | NM_000138.4:c.2569_2570delGT | p.(Val857Hisfs*2) | PTC | PTV | 1 | Frameshift | P | na |
| v57 | 22 | NM_000138.4:c.2645C>T | p.(Ala882Val) | Missense | non-PTV | 1 | Other missense | LP | rs794728195 |
| v58 | 22 | NM_000138.4:c.2581C>T | p.(Arg861*) | PTC | PTV | 1 | Nonsense | P | rs140583 |
| v59 | 23 | NM_000138.4:c.2722T>C | p.(Cys908Arg) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs1060501021 |
| v60 | 23 | NM_000138.4:c.2702C>G | p.(Ser901*) | PTC | PTV | 1 | Nonsense | P | na |
| v61 | 24 | NM_000138.4:c.2729-1G>C | Exon 24 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | Takeda et al. ¹ |
| v62 | 24 | NM_000138.4:c.2753delC | p.(Pro918Glnfs*24) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |

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| v63 | 24 | NM_000138.4:c.2854G>C | p.(Asp952His) | Missense | non-PTV | 1 | Other missense | LP | na |
| v64 | 25 | NM_000138.4:c.2886C>A | p.(Tyr962*) | PTC | PTV | 1 | Nonsense | P | rs772108557 |
| v65 | 25 | NM_000138.4:c.2953G>A | p.(Gly985Arg) | Missense | non-PTV | 2 | Other missense | LP | rs794728199 |
| v66 | 25 | NM_000138.4:c.2965_2966delGG | p.(Gly989Tyrfs*2) | PTC | PTV | 1 | Frameshift | P | na |
| v67 | 25 | NM_000138.4:c.2942G>A | p.(Cys981Tyr) | Missense | non-PTV | 2 | Cys outside cb-EGF or cb-site | LP | rs727505110 |
| v68 | 26 | NM_000138.4:c.3093G>C | p.(Glu1031Asp) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v69 | 26 | NM_000138.4:c.3095G>A | p.(Cys1032Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs137854481 |
| v70 | 27 | NM_000138.4:c.3209-1G>A | Exon 27 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | Takeda et al. ¹ |
| v71 | 27 | NM_000138.4:c.3302A>G | p.(Tyr1101Cys) | Missense | non-PTV | 1 | Cys in cb-EGF (creating Cys) | LP | rs1555398625 |
| v72 | 27 | NM_000138.4:c.3337+1G>A | Exon 27 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | rs397515789 |
| v73 | 28 | NM_000138.4:c.3463G>C | p.(Asp1155His) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Stheneur et al. ⁹ |
| v74 | 29 | NM_000138.4:c.3559delC | p.(His1187Ilefs*17) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v75 | 29 | NM_000138.4:c.3584G>A | p.(Cys1195Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs886038802 |
| v76 | 29 | NM_000138.4:c.3544T>G | p.(Cys1182Gly) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | na |
| v77 | 29 | NM_000138.4:c.3524_3525delATA | p.(Ile1175Argfs*17) | PTC | PTV | 1 | Frameshift | P | na |
| v78 | 30 | NM_000138.4:c.3650G>A | p.(Gly1217Asp) | Missense | non-PTV | 1 | Other missense | LP | rs1555398397 |
| v79 | 30 | NM_000138.4:c.3603C>A | p.(Cys1201*) | PTC | PTV | 1 | Nonsense | P | Ogawa et al. ⁵ |
| v80 | 30 | NM_000138.4:c.3622delT | p.(Cys1208Valfs*22) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v81 | 30 | NM_000138.4:c.3670C>T | p.(Gln1224*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v82 | 30 | NM_000138.4:c.3712G>A | p.(Asp1238Asn) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs794728208 |
| v83 | 30 | NM_000138.4:c.3712+1G>A | Exon 30 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | rs794728209 |
| v84 | 31 | NM_000138.4:c.3713-1G>A | Exon 31 deletion | IFES | PTV | 3 | splice-site ±1-2 | P | Takeda et al. ¹ |
| v85 | 31 | NM_000138.4:c.3746G>C | p.(Cys1249Ser) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs137854458 |
| v86 | 31 | NM_000138.4:c.3781T>G | p.(Tyr1261Asp) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Arbustini et al. ¹⁰ |
| v87 | 31 | NM_000138.4:c.3725G>A | p.(Cys1242Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs137854471 |
| v88 | 32 | NM_000138.4:c.3919T>C | p.(Cys1307Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v89 | 33 | NM_000138.4:c.4021A>C | p.(Asn1341His) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v90 | 33 | NM_000138.4:c.4027G>T | p.(Ala1343Ser) | Missense | non-PTV | 1 | Other missense | LP | na |
| v91 | 33 | NM_000138.4:c.4066G>T | p.(Gly1356*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v92 | 33 | NM_000138.4:c.4017T>G | p.(Cys1339Trp) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | na |
| v93 | 34 | NM_000138.4:c.4096G>A | p.(Glu1366Lys) | Missense | non-PTV | 2 | Cys outside cb-EGF or cb-site | LP | rs763449629 |
| v94 | 35 | NM_000138.4:c.4313G>A | p.(Ser1438Asn) | Missense | non-PTV | 2 | Other missense | LP | rs587782945 |
| v95 | 35 | NM_000138.4:c.4280A>G | p.(Tyr1427Cys) | Missense | non-PTV | 1 | Cys in cb-EGF (creating Cys) | LP | rs1555397548 |
| v96 | 35 | NM_000138.4:c.4331G>T | p.(Cys1444Phe) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v97 | 35 | NM_000138.4:c.4222T>C | p.(Cys1408Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs397515802 |
| v98 | 36 | NM_000138.4:c.4411_4420dupGAGTGTGAGA | p.(Ile1474Argfs*3) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v99 | 36 | NM_000138.4:c.4408T>C | p.(Cys1470Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Tjeldhorn, et al. ¹¹ |
| v100 | 36 | NM_000138.4:c.4382G>C | p.(Cys1461Ser) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1057522902 |
| v101 | 36 | NM_000138.4:c.4459G>A | p.(Asp1487Asn) | Missense | non-PTV | 1 | Other missense | LP | rs113693945 |
| v102 | 37 | NM_000138.4:c.4567C>T | p.(Arg1523*) | PTC | PTV | 1 | Nonsense | P | rs397515812 |
| v103 | 37 | NM_000138.4:c.4507_4508delGT | p.(Val1503Glnfs*9) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v104 | 38 | NM_000138.4:c.4621C>T | p.(Arg1541*) | PTC | PTV | 4 | Nonsense | P | rs794728228 |
| v105 | 38 | NM_000138.4:c.4588C>T | p.(Arg1530Cys) | Missense | non-PTV | 3 | Cys outside cb-EGF or cb-site | LP | rs111401431 |
| v106 | 38 | NM_000138.4:c.4583-1G>A | Exon 38 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | rs1555397176 |
| v107 | 38 | NM_000138.4:c.4615C>T | p.(Arg1539*) | PTC | PTV | 1 | Nonsense | P | rs111231312 |
| v108 | 39 | NM_000138.4:c.4750G>T | p.(Glu1584*) | PTC | PTV | 1 | Nonsense | P | Loeys et al. ¹² |
| v109 | 39 | NM_000138.4:c.4786C>T | p.(Arg1596*) | PTC | PTV | 1 | Nonsense | P | rs13871094 |
| v110 | 39 | NM_000138.4:c.4777G>T | p.(Glu1593*) | PTC | PTV | 1 | Nonsense | P | Ogawa et al. ⁵ |
| v111 | 40 | NM_000138.4:c.4930C>T | p.(Arg1644*) | PTC | PTV | 1 | Nonsense | P | rs140630 |
| v112 | 40 | NM_000138.4:c.4834G>T | p.(Glu1612*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v113 | 41 | NM_000138.4:c.4973delG | p.(Cys1658Leufs*24) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v114 | 41 | NM_000138.4:c.5060G>A | p.(Cys1687Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v115 | 41 | NM_000138.4:c.4993A>T | p.(Asn1665Tyr) | Missense | non-PTV | 2 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v116 | 41 | NM_000138.4:c.4973G>A | p.(Cys1658Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555396859 |
| v117 | 41 | NM_000138.4:c.5065+1G>A | Exon 41 deletion | IFES | PTV | 2 | splice-site ±1-2 | P | Ogawa et al. ⁵ |
| v118 | 42 | NM_000138.4:c.5177delG | p.(Gly1726Alafs*167) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v119 | 42 | NM_000138.4:c.5162G>A | p.(Cys1721Tyr) | Missense | non-PTV | 2 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v120 | 44 | NM_000138.4:c.5371T>C | p.(Cys1791Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555396427 |
| v121 | 44 | NM_000138.4:c.5368C>T | p.(Arg1790*) | PTC | PTV | 2 | Nonsense | P | rs113249837 |
| v122 | 44 | NM_000138.4:c.5372G>A | p.(Cys1791Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs886038848 |
| v123 | 47 | NM_000138.4:c.5672-2A>G | Exon 47 deletion | IFES | PTV | 2 | splice-site ±1-2 | P | rs1060501053 |
| v124 | 47 | NM_000138.4:c.5725_5740delinsCAGTTGAA | p.(Ile1909Glnfs*16) | PTC | PTV | 2 | Frameshift | P | Takeda et al. ¹ |
| v125 | 47 | NM_000138.4:c.5743C>A | p.(Arg1915Ser) | Missense | non-PTV | 1 | Other missense | LP | na |
| v126 | 47 | NM_000138.4:c.5726T>C | p.(Ile1909Thr) | Missense | non-PTV | 1 | Other missense | LP | rs794728333 |
| v127 | 47 | NM_000138.4:c.5729G>T | p.(Gly1910Val) | Missense | non-PTV | 1 | Other missense | LP | na |
| v128 | 47 | NM_000138.4:c.5740T>C | p.(Cys1914Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | na |
| v129 | 47 | NM_000138.4:c.5788+1G>A | Exon 47 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | rs1555395819 |

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|------|----|------------------------------------|-----------------------|----------|---------|---|-------------------------------|----|--|
| v130 | 47 | NM_000138.4:c.5788+2T>G | Exon 47 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | na |
| v131 | 47 | NM_000138.4:c.5788+5G>A | Exon 47 deletion | IFES | PTV | 2 | splice-site non±1-2 | LP | rs193922219 |
| v132 | 47 | NM_000138.4:c.5788+5G>C | Exon 47 deletion | IFES | PTV | 1 | splice-site non±1-2 | LP | Takeda et al. ¹ |
| v133 | 48 | NM_000138.4:c.5873G>A | p.(Cys1958Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Ogawa et al. ⁵ |
| v134 | 48 | NM_000138.4:c.5886T>G | p.(Tyr1962*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v135 | 49 | NM_000138.4:c.5966G>T | p.(Cys1989Phe) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1597531796 |
| v136 | 49 | NM_000138.4:c.5950T>C | p.(Cys1984Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555395659 |
| v137 | 50 | NM_000138.4:c.6113G>A | p.(Cys2038Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs363804 |
| v138 | 51 | NM_000138.4:c.6296G>T | p.(Cys2099Phe) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs1131691803 |
| v139 | 51 | NM_000138.4:c.6181T>C | p.(Cys2061Arg) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs1555395267 |
| v140 | 51 | NM_000138.4:c.6169G>T | p.(Arg2057*) | PTC | PTV | 2 | Nonsense | P | rs763091520 |
| v141 | 51 | NM_000138.4:c.6268G>T | p.(Glu2090*) | PTC | PTV | 1 | Nonsense | P | na |
| v142 | 52 | NM_000138.4:c.6379+1G>A | Exon 52 deletion | IFES | PTV | 2 | splice-site ±1-2 | P | rs397515833 |
| v143 | 53 | NM_000138.4:c.6388G>T | p.(Glu2130*) | PTC | PTV | 1 | Nonsense | P | rs794728334 |
| v144 | 53 | NM_000138.4:c.6448delC | p.(Arg2150Alafs*10) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v145 | 53 | NM_000138.4:c.6487G>T | p.(Glu2163*) | PTC | PTV | 1 | Nonsense | P | rs1555395191 |
| v146 | 53 | NM_000138.4:c.6388G>A | p.(Glu2130Lys) | Missense | non-PTV | 3 | Cys outside cb-EGF or cb-site | LP | rs794728334 |
| v147 | 54 | NM_000138.4:c.6518G>A | p.(Gly2173Asp) | Missense | non-PTV | 1 | Other missense | LP | Ogawa et al. ⁵ |
| v148 | 54 | NM_000138.4:c.6577G>T | p.(Glu2193*) | PTC | PTV | 1 | Nonsense | P | Biggin et al. ¹³ |
| v149 | 54 | NM_000138.4:c.6542G>A | p.(Cys2181Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Waldmuller et al. ¹⁴ |
| v150 | 55 | NM_000138.4:c.6703_6704delGG | p.(Gly2235Ilefs*8) | PTC | PTV | 1 | Frameshift | P | Ogawa et al. ⁵ |
| v151 | 55 | NM_000138.4:c.6665delT | p.(Val2222Glyfs*69) | PTC | PTV | 3 | Frameshift | P | Ogawa et al. ⁵ |
| v152 | 55 | NM_000138.4:c.6658C>T | p.(Arg2220*) | PTC | PTV | 1 | Nonsense | P | rs113001196 |
| v153 | 56 | NM_000138.4:c.6740-2A>G | Exon 56 deletion | IFES | PTV | 2 | splice-site ±1-2 | P | Takeda et al. ¹ |
| v154 | 56 | NM_000138.4:c.6806T>C | p.(Ile2269Thr) | Missense | non-PTV | 3 | Other missense | LP | rs193922228 |
| v155 | 56 | NM_000138.4:c.6837delG | p.(Tyr2280Ilefs*11) | PTC | PTV | 1 | Frameshift | P | Ogawa et al. ⁵ |
| v156 | 56 | NM_000138.4:c.6752G>C | p.(Cys2251Ser) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | na |
| v157 | 56 | NM_000138.4:c.6748G>A | p.(Glu2250Lys) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs1597520789 |
| v158 | 57 | NM_000138.4:c.6874G>T | p.(Glu2292*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |
| v159 | 57 | NM_000138.4:c.6947G>A | p.(Cys2316Tyr) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555394629 |
| v160 | 57 | NM_000138.4:c.6982C>T | p.(Gln2328*) | PTC | PTV | 1 | Nonsense | P | rs371097218 |
| v161 | 57 | NM_000138.4:c.6997+5G>A | Exon 57 deletion | IFES | PTV | 1 | splice-site non±1-2 | LP | Ogawa et al. ⁵ |
| v162 | 57 | NM_000138.4:c.6915delG | p.(Arg 2306 Alafs*92) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v163 | 58 | NM_000138.4:c.7039_7040delAT | p.(Met2347Valfs*19) | PTC | PTV | 2 | Frameshift | P | rs794728319 |
| v164 | 58 | NM_000138.4:c.7090T>C | p.(Cys2364Arg) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v165 | 58 | NM_000138.4:c.7184G>T | p.(Gly2395Val) | Missense | non-PTV | 1 | Other missense | LP | rs397515849 |
| v166 | 58 | NM_000138.4:c.7141C>T | p.(Gln2381*) | PTC | PTV | 2 | Nonsense | P | rs869025414 |
| v167 | 58 | NM_000138.4:c.7015T>G | p.(Cys2339Gly) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Ogawa et al. ⁵ |
| v168 | 58 | NM_000138.4:c.7180C>T | p.(Arg2394*) | PTC | PTV | 1 | Nonsense | P | rs397515848 |
| v169 | 59 | NM_000138.4:c.7266_7267delAG | p.(Gly2423Ilefs*7) | PTC | PTV | 1 | Frameshift | P | Stheneur et al. ⁹ |
| v170 | 59 | NM_000138.4:c.7240C>T | p.(Arg2414*) | PTC | PTV | 2 | Nonsense | P | rs112550005 |
| v171 | 59 | NM_000138.4:c.7330+3_6delAAAGT | Exon 59 deletion | IFES | PTV | 1 | splice-site non±1-2 | LP | Takeda et al. ¹ |
| v172 | 59 | NM_000138.4:c.7327_7330+2delGTAGGT | Exon 59 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | na |
| v173 | 60 | NM_000138.4:c.7406_7407insTGTT | p.(Cys2470Valfs*19) | PTC | PTV | 2 | Frameshift | P | Takeda et al. ¹ |
| v174 | 60 | NM_000138.4:c.7339G>A | p.(Glu2447Lys) | Missense | non-PTV | 2 | Cys outside cb-EGF or cb-site | LP | rs137854464 |
| v175 | 60 | NM_000138.4:c.7408T>C | p.(Cys2470Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555394399 |
| v176 | 60 | NM_000138.4:c.7339G>T | p.(Glu2447*) | PTC | PTV | 1 | Nonsense | P | Arbustini et al. ¹⁰ |
| v177 | 61 | NM_000138.4:c.7466G>A | p.(Cys2489Tyr) | Missense | non-PTV | 3 | Cys in cb-EGF | LP | rs1060501077 |
| v178 | 61 | NM_000138.4:c.7565delG | p.(Cys2522Serfs*160) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v179 | 61 | NM_000138.4:c.7545delT | p.(Phe2515Leufs*167) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v180 | 62 | NM_000138.4:c.7582T>C | p.(Cys2528Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1566891701 |
| v181 | 62 | NM_000138.4:c.7664G>T | p.(Gly2555Val) | Missense | non-PTV | 1 | Other missense | LP | rs1566891654 |
| v182 | 62 | NM_000138.4:c.7636G>A | p.(Gly2546Arg) | Missense | non-PTV | 1 | Other missense | LP | Bustamante-Aragones et al. ¹⁵ |
| v183 | 62 | NM_000138.4:c.7664delG | p.(Gly2555Aspfs*127) | PTC | PTV | 1 | Frameshift | P | na |
| v184 | 62 | NM_000138.4:c.7606G>A | p.(Gly2536Arg) | Missense | non-PTV | 1 | Other missense | LP | rs397515854 |
| v185 | 62 | NM_000138.4:c.7669+1G>A | Exon 62 deletion | IFES | PTV | 1 | splice-site ±1-2 | P | Baetens et al. ¹⁶ |
| v186 | 63 | NM_000138.4:c.7754T>C | p.(Ile2585Thr) | Missense | non-PTV | 9 | Other missense | LP | rs727503054 |
| v187 | 63 | NM_000138.4:c.7792dupC | p.(Gln2598Profs*10) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v188 | 63 | NM_000138.4:c.7784G>T | p.(Gly2595Val) | Missense | non-PTV | 1 | Other missense | LP | na |
| v189 | 64 | NM_000138.4:c.7831T>C | p.(Cys2611Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v190 | 64 | NM_000138.4:c.7864T>C | p.(Cys2622Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | Takeda et al. ¹ |
| v191 | 64 | NM_000138.4:c.7936T>C | p.(Cys2646Arg) | Missense | non-PTV | 1 | Cys in cb-EGF | LP | rs1555393863 |
| v192 | 64 | NM_000138.4:c.7938C>A | p.(Cys2646*) | PTC | PTV | 1 | Nonsense | P | Takeda et al. ¹ |

| | | | | | | | | | |
|-------------|-------|------------------------|----------------------|----------|---------|---|--|----|-----------------------------|
| v193 | 64 | NM_000138.4:c.7982A>G | p.(Tyr2661Cys) | Missense | non-PTV | 1 | Cys in cb-EGF (creating Cys) | LP | rs112196241 |
| v194 | 64 | NM_000138.4:c.7906G>T | p.(Gly2636Cys) | Missense | non-PTV | 1 | Cys in cb-EGF (creating Cys) | LP | Takeda et al. ¹ |
| v195 | 64 | NM_000138.4:c.7828G>A | p.(Glu2610Lys) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs111984349 |
| v196 | 65 | NM_000138.4:c.8063C>G | p.(Ser2688Cys) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | Takeda et al. ¹ |
| v197 | 65 | NM_000138.4:c.8090delC | p.(Pro2697Glnfs*55) | PTC | PTV | 1 | Frameshift | P | Takeda et al. ¹ |
| v198 | 65 | NM_000138.4:c.8188C>T | p.(Arg2730Trp) | Missense | non-PTV | 1 | Other missense | LP | na |
| v199 | 65 | NM_000138.4:c.8135delC | p.(Pro2712Glnfs*40) | PTC | PTV | 2 | Frameshift | P | Takeda et al. ¹ |
| v200 | 66 | NM_000138.4:c.8377T>G | p.(Tyr2793Asp) | Missense | non-PTV | 1 | Other missense | LP | na |
| v201 | 66 | NM_000138.4:c.8521G>T | p.(Glu2841*) | PTC | PTV | 1 | Nonsense | LP | rs587782948 |
| v202 | 66 | NM_000138.4:c.8378A>G | p.(Tyr2793Cys) | Missense | non-PTV | 1 | Cys outside cb-EGF or cb-site | LP | rs397515863 |
| v203 | 66 | NM_000138.4:c.8326C>T | p.(Arg2776*) | PTC | PTV | 1 | Nonsense | LP | rs137854466 |
| CNVs | | | | | | | | | |
| v204 | 20 | | Exon 20 deletion | IFES | PTV | 1 | Copy number variation causing exon(s) skipping | P | Takeda et al. ¹⁷ |
| v205 | 64-66 | | Exons 64-66 deletion | | PTV | 1 | Copy number variation causing exon(s) skipping | P | na |
| v206 | 23-25 | | Exons 23-25 deletion | IFES | PTV | 1 | Copy number variation causing exon(s) skipping | P | Takeda et al. ¹⁷ |
| v207 | 3 | | Exon 3 deletion | PTC | PTV | 1 | Copy number variation causing exon(s) skipping | P | Takeda et al. ¹⁷ |
| v208 | 39-40 | | Exons 39-40 deletion | IFES | PTV | 1 | Copy number variation causing exon(s) skipping | P | Takeda et al. ¹⁷ |
| v209 | 51-63 | | Exons 51-63 deletion | IFES | PTV | 1 | Copy number variation causing exon(s) skipping | P | Takeda et al. ¹⁷ |
| v210 | 1-66 | | Exons 1-66 deletion | | PTV | 1 | Copy number variation causing exon(s) skipping | P | na |

Total= 278

PTC, variant creating a premature termination codon; IFES, in-frame exon-skipping; PTV, protein-truncating variant; P, pathogenic; LP, likely-pathogenic; CNV, copy number variation.

<Supplementary Reference>

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