

Commonwealth of Virginia
Department of General Services
Division of Consolidated Laboratory Services
Richmond, Virginia

DCLS Cystic Fibrosis Variant List

Legacy HGVS Coding HGVS Protein	Legacy HGVS Coding HGVS Protein	Legacy HGVS Coding HGVS Protein
124del23bp c.-9_14del p.Met1?	E33X c.97G>T p.(Glu33Ter)	R75X c.223C>T p.(Arg75Ter)
M1L c.1A>C p.Met1?	241delAT c.112_113del p.(Tyr38ProfsTer6)	365-366insT c.233dup p.(Trp79LeufsTer32)
M1V c.1A>G p.Met1?	Y38X c.114C>G p.(Tyr38Ter)	c.234delC c.234del p.(Trp79GlyfsTer12)
M1K c.2T>A p.Met1?	Q39X c.115C>T p.(Gln39Ter)	366insC c.234dup p.(Trp79LeufsTer32)
M1T c.2T>C p.Met1?	A46D c.137C>A p.(Ala46Asp)	W79X c.236G>A p.(Trp79Ter)
M1R c.2T>G p.Met1?	c.142_145delAATC c.142_145del p.(Asn48TyrfsTer42)	c.243delT c.243del p.(Phe81LeufsTer10)
M1I c.3G>A p.Met1?	c.147_150delATCT c.147_150del p.(Ser50LysfsTer40)	379-381insT c.248dup p.(Tyr84LeufsTer27)
c.4delC c.4del p.(Gln2ArgfsTer23)	284delA c.156del p.(Lys52AsnfsTer39)	Y84X c.252T>A p.(Tyr84Ter)
Q2X c.4C>T p.(Gln2Ter)	295ins8 c.156_163dup p.(Arg55AsnfsTer39)	G85X c.253G>T p.(Gly85Ter)
S4X c.11C>A p.(Ser4Ter)	K52X c.154A>T p.(Lys52Ter)	G85E c.254G>A p.(Gly85Glu)
P5L c.14C>T p.(Pro5Leu)	E54X c.160G>T p.(Glu54Ter)	394delTT c.262_263del p.(Leu88IlefsTer22)
156insG c.25dup p.(Ala9GlyfsTer36)	296+1G->A c.164+1G>A p.?	c.264_268delATATT c.264_268del p.(Leu88PhefsTer21)
S13F c.38C>T p.(Ser13Phe)	296+1G->C c.164+1G>C p.?	L88X c.263T>A p.(Leu88Ter)
c.40_44delAAACT c.40_44del p.(Lys14PhefsTer29)	296+1G->T c.164+1G>T p.?	L88X c.263T>G p.(Leu88Ter)
174delA c.42del p.(Lys14AsnfsTer11)	296+2T->A c.164+2T>A p.?	G91R c.271G>A p.(Gly91Arg)
K14X c.40A>T p.(Lys14Ter)	296+2T->C c.164+2T>C p.?	405+1G->A c.273+1G>A p.?
c.43dupC c.43dup p.(Leu15ProfsTer30)	296+2T->G c.164+2T>G p.?	405+2T->G c.273+2T>G p.?
175delC c.43del p.(Leu15PhefsTer10)	296+3insT c.164+4dup p.?	405+3A->C c.273+3A>C p.?
175insT c.50dup p.(Ser18GlnfsTer27)	296+28A->G c.164+28A>G p.?	406-2A->C c.274-2A>C p.?
181_182dup c.49_50dup p.(Trp19AlafsTer7)	297-3C->T c.165-3C>T p.?	406-2A->G c.274-2A>G p.?
182delT c.50del p.(Phe17SerfsTer8)	297-2A->G c.165-2A>G p.?	406-1G->A c.274-1G>A p.?
c.49_50delTT c.49_50del p.(Phe17GlnfsTer27)	297-1G->A c.165-1G>A p.?	406-1G->C c.274-1G>C p.?
L15P c.44T>C p.(Leu15Pro)	E56K c.166G>A p.(Glu56Lys)	E92K c.274G>A p.(Glu92Lys)
183delC c.51del p.(Phe17LeufsTer8)	300delA c.168del p.(Glu56AspfsTer35)	E92X c.274G>T p.(Glu92Ter)
185+1G->T c.53+1G>T p.?	E56X c.166G>T p.(Glu56Ter)	415insA c.285dup p.(Ala96SerfsTer15)
185+2T->C c.53+2T>C p.?	W57G c.169T>G p.(Trp57Gly)	Q98X c.292C>T p.(Gln98Ter)
185+2T->G c.53+2T>G p.?	W57X c.170G>A p.(Trp57Ter)	Q98R c.293A>G p.(Gln98Arg)
186-2A->G c.54-2A>G p.?	W57X c.171G>A p.(Trp57Ter)	P99L c.296C>T p.(Pro99Leu)
186-1G->A c.54-1G>A p.?	306delTAGA c.174_177del p.(Asp58GlufsTer32)	L101X c.302T>G p.(Leu101Ter)
W19X c.56G>A p.(Trp19Ter)	305insT c.174dup p.(Arg59Ter)	435insA c.303dup p.(Leu102ThrfsTer9)
W19X c.57G>A p.(Trp19Ter)	306insA c.175dup p.(Arg59LysfsTer10)	L102R c.305T>G p.(Leu102Arg)
c.71_72delTGinsA c.71_72delinsA p.(Leu24Ter)	308insA c.177dup p.(Glu60ArgfsTer9)	G103X c.307G>T p.(Gly103Ter)
G27R c.79G>A p.(Gly27Arg)	E60K c.178G>A p.(Glu60Lys)	442delA c.310del p.(Arg104GlufsTer3)
G27X c.79G>T p.(Gly27Ter)	E60X c.178G>T p.(Glu60Ter)	R104X c.310A>T p.(Arg104Ter)
c.88_89delCA c.88_89del p.(Gln30AlafsTer14)	317insC c.185dup p.(Ser63PhefsTer6)	444delA c.313del p.(Ile105SerfsTer2)
218insA c.87dup p.(Gln30ThrfsTer15)	P67L c.200C>T p.(Pro67Leu)	c.324delC c.324del p.(Tyr109MetfsTer15)
Q30X c.88C>T p.(Gln30Ter)	K68X c.202A>T p.(Lys68Ter)	458delAT c.326_327del p.(Tyr109Ter)
R31L c.92G>T p.(Arg31Leu)	R74W c.220C>T p.(Arg74Trp)	457TAT->G c.325_327delinsG p.(Tyr109GlyfsTer4)

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Y109X c.327T>A p.(Tyr109Ter)	602del14 c.470_483del p.(Phe157Ter)	711+1G->T c.579+1G>T p.?
D110H c.328G>C p.(Asp110His)	604insA c.472dup p.(Ser158LysfsTer5)	711+2T->C c.579+2T>C p.?
464delC c.332del p.(Pro111ArgfsTer13)	605insT c.476dup p.(Leu159PhefsTer4)	711+3A->G c.579+3A>G p.?
D110E c.330C>A p.(Asp110Glu)	L159X c.476T>A p.(Leu159Ter)	711+5G->A c.579+5G>A p.?
K114X c.340A>T p.(Lys114Ter)	Y161D c.481T>G p.(Tyr161Asp)	712-2A->C c.580-2A>C p.?
E116K c.346G>A p.(Glu116Lys)	c.488delA c.488del p.(Lys163ArgfsTer3)	712-2A->G c.580-2A>G p.?
R117G c.349C>G p.(Arg117Gly)	621+1G->A c.489+1G>A p.?	712-1G->T c.580-1G>T p.?
R117C c.349C>T p.(Arg117Cys)	621+1G->T c.489+1G>T p.?	G194R c.580G>A p.(Gly194Arg)
R117H c.350G>A p.(Arg117His)	621+2T->C c.489+2T>C p.?	G194R c.580G>C p.(Gly194Arg)
R117P c.350G>C p.(Arg117Pro)	621+2T->G c.489+2T>G p.?	713delGA c.581_582del p.(Gly194AlafsTer63)
R117L c.350G>T p.(Arg117Leu)	621+3A->G c.489+3A>G p.?	G194X c.580G>T p.(Gly194Ter)
c.353delC c.353del p.(Ser118LeufsTer6)	622-2A->C c.490-2A>C p.?	G194V c.581G>T p.(Gly194Val)
489delC c.357del p.(Ile119MetfsTer5)	622-1G->A c.490-1G>A p.?	c.583delC c.583del p.(Ala196HisfsTer19)
A120T c.358G>A p.(Ala120Thr)	622-1G->C c.490-1G>C p.?	H199Y c.595C>T p.(His199Tyr)
Y122X c.366T>A p.(Tyr122Ter)	622-1G->T c.490-1G>T p.?	733delG c.601del p.(Val201CysfsTer14)
499dupC c.367dup p.(Leu123ProfsTer36)	624delT c.494del p.(Leu165Ter)	c.604_605delTG c.604_605del p.(Trp202AspfsTer55)
G126D c.377G>A p.(Gly126Asp)	L165X c.494T>A p.(Leu165Ter)	V201M c.601G>A p.(Val201Met)
c.381_382dup c.381_382dup p.(Cys128TyrfsTer7)	L165S c.494T>C p.(Leu165Ser)	W202X c.606G>A p.(Trp202Ter)
519delT c.387del p.(Leu130SerfsTer4)	630delG c.498del p.(Lys166AsnfsTer7)	746insC c.614dup p.(Leu206PhefsTer52)
525delT c.393del p.(Phe131LeufsTer3)	654del5 c.522_526del p.(Ile175TyrfsTer6)	P205S c.613C>T p.(Pro205Ser)
526_527delAT c.394_398del p.(Ile132GlufsTer25)	663insT c.531dup p.(Gly178TrpfsTer5)	749delT c.617del p.(Leu206CysfsTer9)
538insAC c.405_406dup p.(Leu136HisfsTer18)	663delT c.531del p.(Ile177MetfsTer12)	L206W c.617T>G p.(Leu206Trp)
541delC c.409del p.(Leu137SerfsTer16)	G178R c.532G>A p.(Gly178Arg)	Q207X c.619C>T p.(Gln207Ter)
541del4 c.409_412del p.(Leu137TyrfsTer15)	Q179X c.535C>T p.(Gln179Ter)	W216X c.647G>A p.(Trp216Ter)
542del7 c.410_416del p.(Leu137ProfsTer14)	675del4 c.543_546del p.(Leu183PhefsTer5)	W216X c.648G>A p.(Trp216Ter)
L138ins c.413_415dup p.(Leu138dup)	675del14 c.543_556del p.(Ser182GlnfsTer6)	c.650_659del c.650_659del p.(Glu217GlyfsTer11)
547insTA c.415_416insTA p.(His139LeufsTer15)	680delT c.548del p.(Leu183ProfsTer6)	L218X c.653T>A p.(Leu218Ter)
H139R c.416A>G p.(His139Arg)	c.551_555delTTTCC c.551_555del p.(Leu184GlnfsTer7)	Q220X c.658C>T p.(Gln220Ter)
556delA c.424del p.(Ile142PhefsTer11)	681delC c.550del p.(Leu184PhefsTer5)	C225X c.675T>A p.(Cys225Ter)
557delT c.429del p.(Phe143LeufsTer10)	690delC c.558del p.(Asn186LysfsTer3)	L227R c.680T>G p.(Leu227Arg)
565delC c.433del p.(Leu145PhefsTer8)	c.560delA c.560del p.(Asn187ThrfsTer2)	V232D c.695T>A p.(Val232Asp)
574delA c.442del p.(Ile148LeufsTer5)	F191V c.571T>G p.(Phe191Val)	840insT c.708dup p.(Gln237SerfsTer21)
G149R c.445G>A p.(Gly149Arg)	710_711+5del7 c.578_579+5del p.?	840delT c.708del p.(Gln237ArgfsTer4)
c.450delG c.450del p.(Met150IlefsTer3)	D192G c.575A>G p.(Asp192Gly)	Q237E c.709C>G p.(Gln237Glu)
582insG c.450dup p.(Gln151AlafsTer8)	708delT c.576del p.(Asp192GlufsTer23)	Q237X c.709C>T p.(Gln237Ter)
583delC c.451del p.(Gln151ArgfsTer2)	E193K c.577G>A p.(Glu193Lys)	845_846insA c.713_714insA p.(Gly239TrpfsTer19)
Q151X c.451C>T p.(Gln151Ter)	710del4 c.579_579+3del p.?	L240X c.714del p.(Leu240Ter)
593insT c.461dup p.(Ala155SerfsTer4)	E193X c.577G>T p.(Glu193Ter)	849delG c.717del p.(Leu240Ter)

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852del22 c.723_743+1del p.?	1001+2T->G c.869+2T>G p.?	L346P c.1037T>C p.(Leu346Pro)
Y247X c.741C>A p.(Tyr247Ter)	1002-2A->C c.870-2A>C p.?	R347H c.1040G>A p.(Arg347His)
Y247X c.741C>G p.(Tyr247Ter)	1002-2A->G c.870-2A>G p.?	R347P c.1040G>C p.(Arg347Pro)
875insTACA c.743_743+1insTACA p.?	1006_1007delGA c.874_875del p.(Glu292ThrfsTer15)	A349V c.1046C>T p.(Ala349Val)
875+1G->A c.743+1G>A p.?	E292X c.874G>T p.(Glu292Ter)	1185delTC c.1053_1054del p.(Arg352AlafsTer11)
875+1G->C c.743+1G>C p.?	1027delG c.895del p.(Ala299GlnfsTer4)	R352W c.1054C>T p.(Arg352Trp)
875+2T->A c.743+2T>A p.?	1037insA c.905_906insA p.(Arg303GlnfsTer5)	R352Q c.1055G>A p.(Arg352Gln)
875+2T->C c.743+2T>C p.?	1040del4 c.908_911del p.(Arg303ThrfsTer24)	Q353X c.1057C>T p.(Gln353Ter)
876-2A->G c.744-2A>G p.?	c.912delCinsGG c.912delinsGG p.(Tyr304Ter)	1200_1219del20 c.1068_1087del p.(Trp356Ter)
Q250X c.748C>T p.(Gln250Ter)	Y304X c.912C>G p.(Tyr304Ter)	1199delG c.1069del p.(Ala357LeufsTer12)
892delA c.761del p.(Lys254ArgfsTer7)	1058delC c.927del p.(Phe310SerfsTer18)	W356X c.1068G>A p.(Trp356Ter)
896delT c.764del p.(Ile255ThrfsTer6)	F312del c.935_937del p.(Phe312del)	1204_1205delGT c.1072_1073del p.(Val358ThrfsTer5)
R258G c.772A>G p.(Arg258Gly)	F311L c.933C>A p.(Phe311Leu)	Q359R c.1076A>G p.(Gln359Arg)
905delG c.773del p.(Arg258AsnfsTer3)	F311L c.933C>G p.(Phe311Leu)	1212delA c.1080del p.(Trp361GlyfsTer8)
c.775delinsGCTGGGAAGAT c.775delinsGCTGGGAAGAT p.(Leu259AlafsTer12)	c.937_938delTC c.937_938del p.(Ser313ArgfsTer50)	1213delT c.1081del p.(Trp361GlyfsTer8)
909delT c.777del p.(Val260Ter)	c.942delG c.942del p.(Phe315SerfsTer13)	1215delG c.1083del p.(Trp361CysfsTer8)
M265R c.794T>G p.(Met265Arg)	G314E c.941G>A p.(Gly314Glu)	W361X c.1082G>A p.(Trp361Ter)
935delA c.803del p.(Asn268IlefsTer17)	1078delT c.948del p.(Phe316LeufsTer12)	W361X c.1083G>A p.(Trp361Ter)
936delTA c.805_806del p.(Ile269ProfsTer4)	L320X c.959T>A p.(Leu320Ter)	c.1084_1088dup c.1084_1088dup p.(Ser364MetfsTer7)
Q270X c.808C>T p.(Gln270Ter)	c.972delC c.972del p.(Tyr325MetfsTer3)	Y362X c.1086T>A p.(Tyr362Ter)
c.811delT c.811del p.(Ser271LeufsTer14)	1112delT c.980del p.(Leu327GlnfsTer42)	Y362X c.1086T>G p.(Tyr362Ter)
954delA c.822del p.(Tyr275ThrfsTer10)	c.982delA c.982del p.(Ile328SerfsTer41)	1221delCT c.1093_1094del p.(Leu365TrpfsTer16)
Y275X c.825C>G p.(Tyr275Ter)	1119delA c.987del p.(Gly330GlnfsTer39)	c.1115delA c.1115del p.(Gln372ArgfsTer16)
C276X c.828C>A p.(Cys276Ter)	K329X c.985A>T p.(Lys329Ter)	Q372X c.1114C>T p.(Gln372Ter)
W277X c.830G>A p.(Trp277Ter)	G330X c.988G>T p.(Gly330Ter)	1248insATCAA c.1116_1116+1insATCAA p.?
W277X c.831G>A p.(Trp277Ter)	c.991_995del c.991_995del p.(Ile331ProfsTer31)	1248+1G->A c.1116+1G>A p.?
E279X c.835G>T p.(Glu279Ter)	R334W c.1000C>T p.(Arg334Trp)	1248+1G->C c.1116+1G>C p.?
982delA c.850del p.(Met284Ter)	R334Q c.1001G>A p.(Arg334Gln)	1248+1G->T c.1116+1G>T p.?
977insA c.850dup p.(Met284AsnfsTer3)	R334L c.1001G>T p.(Arg334Leu)	1248+2T->A c.1116+2T>A p.?
991del5 c.861_865del p.(Asn287LysfsTer19)	1138insG c.1006_1007insG p.(Ile336SerfsTer28)	1248+2T->C c.1116+2T>C p.?
994del9 c.863_869+2del p.?	I336K c.1007T>A p.(Ile336Lys)	1249-1G->A c.1117-1G>A p.?
c.865_869delAGACA c.865_869del p.(Arg289AsnfsTer17)	T338I c.1013C>T p.(Thr338Ile)	1249insA c.1118dup p.(Asp373GlnfsTer9)
R289X c.865A>T p.(Arg289Ter)	1154insTC c.1021_1022dup p.(Phe342HisfsTer28)	1262delA c.1130del p.(Lys377SerfsTer11)
Q290X c.868C>T p.(Gln290Ter)	S341P c.1021T>C p.(Ser341Pro)	1259insA c.1130dup p.(Gln378AlafsTer4)
1001+1G->C c.869+1G>C p.?	1157insTA c.1025_1026insTA p.(Cys343ThrfsTer27)	Q376X c.1126C>T p.(Gln376Ter)
1001+2T->A c.869+2T>A p.?	1161delC c.1029del p.(Cys343Ter)	Q378X c.1132C>T p.(Gln378Ter)

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E379X c.1135G>T p.(Glu379Ter)	S434X c.1301C>A p.(Ser434Ter)	1576insT c.1446dup p.(Lys483Ter)
K381X c.1141A>T p.(Lys381Ter)	1434delA c.1302del p.(Leu435PhefsTer7)	S489X c.1466C>A p.(Ser489Ter)
1288insTA c.1155_1156dup p.(Asn386IlefsTer3)	S434X c.1301C>G p.(Ser434Ter)	S489X c.1466C>G p.(Ser489Ter)
1288insA c.1157dup p.(Asn386LysfsTer25)	c.1312dupA c.1312dup p.(Thr438AsnfsTer8)	1601delT c.1469del p.(Phe490SerfsTer37)
1289insTA c.1157_1158insTA p.(Leu387ThrfsTer2)	D443fs c.1329_1350del p.(Asp443GlufsTer19)	1601delTC c.1470_1471del p.(Phe490LeufsTer13)
1291delTT c.1159_1160del p.(Leu387AsnfsTer23)	K442X c.1324A>T p.(Lys442Ter)	S492F c.1475C>T p.(Ser492Phe)
1294del7 c.1162_1168del p.(Thr388GlnfsTer3)	1461ins4 c.1327_1330dup p.(Ile444ArgfsTer3)	1609delCA c.1477_1478del p.(Gln493ValfsTer10)
T388X c.1162_1163delinsTA p.(Thr388Ter)	1460delAT c.1330_1331del p.(Ile444Ter)	Q493X c.1477C>T p.(Gln493Ter)
1309delG c.1177del p.(Val393Ter)	D443Y c.1327G>T p.(Asp443Tyr)	c.1486delT c.1486del p.(Trp496GlyfsTer31)
c.1190dupT c.1190dup p.(Thr398AsnfsTer13)	1465_1466insTAAT c.1333_1334insTAAT p.(Asn445IlefsTer38)	W496X c.1487G>A p.(Trp496Ter)
W401X c.1202G>A p.(Trp401Ter)	1471delA c.1340del p.(Lys447ArgfsTer2)	I502T c.1505T>C p.(Ile502Thr)
W401X c.1203G>A p.(Trp401Ter)	1474delA c.1342del p.(Ile448Ter)	E504X c.1510G>T p.(Glu504Ter)
E402X c.1204G>T p.(Glu402Ter)	Q452X c.1354C>T p.(Gln452Ter)	I507del c.1519_1521del p.(Ile507del)
1340delA c.1208del p.(Glu403GlyfsTer39)	L453S c.1358T>C p.(Leu453Ser)	F508del c.1521_1523del p.(Phe508del)
1341+1G>A c.1209+1G>A p.?	1491-1500del c.1360_1387del p.(Leu454AlafsTer6)	1660delG c.1528del p.(Val510PhefsTer17)
1341+1G>C c.1209+1G>C p.?	A455E c.1364C>A p.(Ala455Glu)	c.1530_1531delTT c.1530_1531del p.(Ser511LeufsTer2)
1341+1G>T c.1209+1G>T p.?	1498delG c.1366del p.(Val456LeufsTer13)	D513G c.1538A>G p.(Asp513Gly)
1341+2T>A c.1209+2T>A p.?	1497delGG c.1365_1366del p.(Val456CysfsTer25)	1675_1687del13 c.1543_1555del p.(Tyr515AlafsTer8)
1341+2T>G c.1209+2T>G p.?	V456F c.1366G>T p.(Val456Phe)	E514X c.1540G>T p.(Glu514Ter)
5T;TG13 c.1210-11delinsGTG p.?	V456A c.1367T>C p.(Val456Ala)	1677delTA c.1545_1546del p.(Tyr515Ter)
5T;TG12 c.1210-11T>G p.?	1504delG c.1373del p.(Gly458AspfsTer11)	c.1547_1548delGA c.1547_1548del p.(Arg516IlefsTer51)
1342-2delAG c.1210-2_1210-1del p.?	c.1375_1385del c.1375_1385del p.(Ser459ArgfsTer19)	R516G c.1546A>G p.(Arg516Gly)
1342-2A>C c.1210-2A>C p.?	1524+1delG c.1392+1del p.?	Y517X c.1551C>A p.(Tyr517Ter)
1343delG c.1211del p.(Gly404AspfsTer38)	1524+1G>A c.1392+1G>A p.?	Y517X c.1551C>G p.(Tyr517Ter)
1342-1G>A c.1210-1G>A p.?	1525-2A>G c.1393-2A>G p.?	V520F c.1558G>T p.(Val520Phe)
1342-1G>C c.1210-1G>C p.?	1525-1G>A c.1393-1G>A p.?	c.1573delC c.1573del p.(Gln525AsnfsTer2)
1342-1G>T c.1210-1G>T p.?	1525-1G>C c.1393-1G>C p.?	C524X c.1572C>A p.(Cys524Ter)
c.1219delG c.1219del p.(Glu407AsnfsTer35)	1525-1G>T c.1393-1G>T p.?	1710del17bp c.1579_1584+11del p.?
1353delA c.1221del p.(Glu407AspfsTer35)	S466X c.1397C>A p.(Ser466Ter)	Q525X c.1573C>T p.(Gln525Ter)
E407X c.1219G>T p.(Glu407Ter)	S466X c.1397C>G p.(Ser466Ter)	c.1581dupA c.1581dup p.(Glu528ArgfsTer40)
1366delG c.1234del p.(Ala412GlnfsTer30)	L467P c.1400T>C p.(Leu467Pro)	E527X c.1579G>T p.(Glu527Ter)
1367del5 c.1243_1247del p.(Asn415Ter)	1540del10 c.1409_1418del p.(Val470GlufsTer54)	E528X c.1582G>T p.(Glu528Ter)
c.1244delA c.1244del p.(Asn415ThrfsTer27)	1548delG c.1418del p.(Gly473GlufsTer54)	1716+1G>A c.1584+1G>A p.?
Q414X c.1240C>T p.(Gln414Ter)	E474K c.1420G>A p.(Glu474Lys)	1716+1G>T c.1584+1G>T p.?
1380insT c.1248dup p.(Asn417Ter)	1556delT c.1424del p.(Leu475ArgfsTer52)	1716+2delT c.1584+2del p.?
c.1262delC c.1262del p.(Thr421IlefsTer21)	1565delCA c.1433_1434del p.(Ser478Ter)	1716+2T>C c.1584+2T>C p.?
1419delC c.1287del p.(Phe430SerfsTer12)	E479X c.1435G>T p.(Glu479Ter)	1717-8G>A c.1585-8G>A p.?
1429del7 c.1301_1307del p.(Ser434LeufsTer6)	1571delG c.1439del p.(Gly480ValfsTer47)	1717-2A>G c.1585-2A>G p.?

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1717-1G->A c.1585-1G>A p.?	1812-2A->C c.1680-2A>C p.?	1898+2delT c.1766+2del p.?
1717-1G->T c.1585-1G>T p.?	1812-1G->A c.1680-1G>A p.?	1898+2T->A c.1766+2T>A p.?
S531X c.1592_1593delinsG p.(Ser531Ter)	1812-1G->C c.1680-1G>C p.?	1898+2T->C c.1766+2T>C p.?
c.1608delA c.1608del p.(Asp537ThrfsTer3)	R560S c.1680A>C p.(Arg560Ser)	1898+3A->G c.1766+3A>G p.?
K536X c.1606A>T p.(Lys536Ter)	R560S c.1680A>T p.(Arg560Ser)	1898+5G->T c.1766+5G>T p.?
1749insTA c.1616_1617dup p.(Val540Ter)	1813insC c.1682dup p.(Val562SerfsTer6)	1898-2A->G c.1767-2A>G p.?
G542X c.1624G>T p.(Gly542Ter)	A561E c.1682C>A p.(Ala561Glu)	1899-1G->A c.1767-1G>A p.?
1759delG c.1627del p.(Glu543LysfsTer6)	Y563N c.1687T>A p.(Tyr563Asn)	1918delGC c.1786_1787del p.(Ala596Ter)
1774delCT c.1642_1643del p.(Leu548GluTer19)	Y563D c.1687T>G p.(Tyr563Asp)	1924del7 c.1792_1798del p.(Lys598GlyfsTer11)
S549R c.1645A>C p.(Ser549Arg)	Y563X c.1689C>A p.(Tyr563Ter)	K598X c.1792A>T p.(Lys598Ter)
S549N c.1646G>A p.(Ser549Asn)	1824delA c.1692del p.(Asp565MetfsTer7)	1932delG c.1800del p.(Ile601PhefsTer10)
S549R c.1647T>A p.(Ser549Arg)	1833delT c.1703del p.(Leu568CysfsTer4)	I601F c.1801A>T p.(Ile601Phe)
S549R c.1647T>G p.(Ser549Arg)	L568X c.1703T>A p.(Leu568Ter)	c.1807delG c.1807del p.(Val603SerfsTer8)
G550X c.1648G>T p.(Gly550Ter)	Y569D c.1705T>G p.(Tyr569Asp)	1942del17 c.1810_1826del p.(Thr604PhefsTer5)
1782delA c.1650del p.(Gly551ValfsTer8)	c.1708_1712delTTATT c.1708_1712del p.(Leu570ArgfsTer17)	H609R c.1826A>G p.(His609Arg)
1784delG c.1652del p.(Gly551ValfsTer8)	Y569X c.1707T>A p.(Tyr569Ter)	A613T c.1837G>A p.(Ala613Thr)
G551S c.1651G>A p.(Gly551Ser)	L570X c.1709T>A p.(Leu570Ter)	D614G c.1841A>G p.(Asp614Gly)
G551D c.1652G>A p.(Gly551Asp)	1845delAG 1846delGA c.1714_1715del p.(Asp572LeufsTer16)	1978delA c.1846del p.(Ile616TyrfsTer2)
1784insATCAT c.1652_1653insATCAT p.(Gln552SerfsTer9)	P574H c.1721C>A p.(Pro574His)	1978dupA c.1846dup p.(Ile616AsnfsTer6)
1787delA c.1656del p.(Gln552HisfsTer7)	1857delT c.1725del p.(Phe575LeufsTer4)	c.1853_1863del c.1853_1863del p.(Ile618ArgfsTer2)
Q552X c.1654C>T p.(Gln552Ter)	F575Y c.1724T>A p.(Phe575Tyr)	I618T c.1853T>C p.(Ile618Thr)
R553X c.1657C>T p.(Arg553Ter)	c.1725_1727delinsAT c.1725_1727delinsAT p.(Phe575LeufsTer4)	G622D c.1865G>A p.(Gly622Asp)
R555X c.1663A>T p.(Arg555Ter)	Y577X c.1731C>A p.(Tyr577Ter)	2003del8 c.1871_1878del p.(Ser624IlefsTer15)
1802delC c.1670del p.(Ser557PhefsTer2)	D579G c.1736A>G p.(Asp579Gly)	2005delTA c.1874_1875del p.(Tyr625PhefsTer16)
1806delA c.1674del p.(Ala559GlnfsTer13)	1870delG c.1738del p.(Val580PhefsTer2)	G628R c.1882G>A p.(Gly628Arg)
L558S c.1673T>C p.(Leu558Ser)	1874insT c.1742dup p.(Leu581PhefsTer8)	G628R c.1882G>C p.(Gly628Arg)
1807delG c.1675del p.(Ala559GlnfsTer13)	1874_1875insTT c.1741_1742dup p.(Leu581PhefsTer2)	c.1894_1895del c.1894_1895del p.(Glu632ThrfsTer9)
A559T c.1675G>A p.(Ala559Thr)	L581X c.1742T>A p.(Leu581Ter)	2025dupA c.1893dup p.(Glu632ArgfsTer10)
R560K c.1679G>A p.(Arg560Lys)	c.1753delG c.1753del p.(Glu585LysfsTer10)	S631X c.1892C>G p.(Ser631Ter)
R560T c.1679G>C p.(Arg560Thr)	E585X c.1753G>T p.(Glu585Ter)	2036delA c.1904del p.(Asn635IlefsTer28)
1811+1G->A c.1679+1G>A p.?	E588X c.1762G>T p.(Glu588Ter)	Q634X c.1900C>T p.(Gln634Ter)
1811+1G->C c.1679+1G>C p.?	E588V c.1763A>T p.(Glu588Val)	2043delG c.1911del p.(Gln637HisfsTer26)
1811+2T->C c.1679+2T>C p.?	1898+1G->A c.1766+1G>A p.?	2053insTA c.1920_1921dup p.(Ser641IlefsTer23)
1811+1634A->G c.1680-886A>G p.?	1898+1G->C c.1766+1G>C p.?	2055del9->A c.1923_1931delinsA p.(Ser641ArgfsTer5)
1811+1643G->T c.1680-877G>T p.?	1898+1G->T c.1766+1G>T p.?	G646X c.1936G>T p.(Gly646Ter)

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2075delA c.1943del p.(Asp648ValfsTer15)	2189CT->A c.2057_2058delinsA p.(Ser686TyrfsTer36)	2466delC c.2335del p.(Gln779LysfsTer24)
Q652X c.1954C>T p.(Gln652Ter)	2193ins4 c.2058_2061dup p.(Lys688PhefsTer2)	c.2337delA c.2337del p.(Gly780ValfsTer23)
E656X c.1966G>T p.(Glu656Ter)	K688X c.2062A>T p.(Lys688Ter)	Q779X c.2335C>T p.(Gln779Ter)
c.1970delG c.1970del p.(Arg657LysfsTer6)	E692X c.2074G>T p.(Glu692Ter)	2472_2478del7 c.2340_2346del p.(Gln781PhefsTer20)
R657X c.1969A>T p.(Arg657Ter)	2215delG c.2083del p.(Glu695LysfsTer27)	c.2341delC c.2341del p.(Gln781ArgfsTer22)
2104insA c.1972dup p.(Arg658LysfsTer7)	c.2089delA c.2089del p.(Arg697GlyfsTer25)	Q781X c.2341C>T p.(Gln781Ter)
2105-2117del13insAGAAA c.1973_1985delinsAGAAA p.(Arg658LysfsTer4)	2221insA c.2089dup p.(Arg697LysfsTer33)	2481-2482insT c.2349dup p.(His784SerfsTer21)
2108delA c.1976del p.(Asn659IlefsTer4)	2222delG c.2091del p.(Lys698ArgfsTer24)	R785X c.2353C>T p.(Arg785Ter)
2109-2118del10 c.1977_1986del p.(Asn659LysfsTer10)	R709X c.2125C>T p.(Arg709Ter)	c.2357dupA c.2357dup p.(Thr787AspfsTer18)
S660X c.1979C>A p.(Ser660Ter)	K710X c.2128A>T p.(Lys710Ter)	R792X c.2374C>T p.(Arg792Ter)
2113delA c.1981del p.(Ile661SerfsTer2)	Q715X c.2143C>T p.(Gln715Ter)	2510delAA c.2378_2379del p.(Lys793SerfsTer11)
S660X c.1979C>G p.(Ser660Ter)	K716X c.2145_2146delinsGT p.(Lys716Ter)	2512delG c.2380del p.(Val794CysfsTer9)
2114delT c.1982del p.(Ile661ThrfsTer2)	K716X c.2146A>T p.(Lys716Ter)	2522insC c.2393dup p.(Gln799SerfsTer6)
2118del4 c.1986_1989del p.(Thr663ArgfsTer8)	c.2148delG c.2148del p.(Thr717LeufsTer5)	Q799X c.2395C>T p.(Gln799Ter)
2118del14 c.1987_2000del p.(Thr663ProfsTer21)	L719X c.2156T>A p.(Leu719Ter)	2556insAT c.2423_2424dup p.(Ser809IlefsTer13)
E664X c.1990G>T p.(Glu664Ter)	2290del16 c.2158_2173del p.(Gln720LysfsTer8)	2557delT c.2425del p.(Ser809GlnfsTer12)
2132delAC c.2000_2001del p.(His667ProfsTer21)	Q720X c.2158C>T p.(Gln720Ter)	R810X c.2428A>T p.(Arg810Ter)
2143delT c.2012del p.(Leu671Ter)	2307insA c.2175dup p.(Glu726ArgfsTer4)	c.2433_2437delinsATAA c.2433_2437delinsATA p.(Leu812TyrfsTer10)
G673X c.2017G>T p.(Gly673Ter)	E730X c.2188G>T p.(Glu730Ter)	L812X c.2435T>A p.(Leu812Ter)
c.2032_2033delTC c.2032_2033del p.(Ser678LeufsTer10)	L732X c.2195T>G p.(Leu732Ter)	Q814X c.2440C>T p.(Gln814Ter)
W679X c.2036G>A p.(Trp679Ter)	2335delA c.2203del p.(Arg735GlyfsTer4)	E815X c.2443G>T p.(Glu815Ter)
W679X c.2037G>A p.(Trp679Ter)	2347delG c.2215del p.(Val739TyrfsTer16)	2585delT c.2453del p.(Leu818TrpfsTer3)
2175insA c.2044dup p.(Thr682AsnfsTer7)	G745X c.2233G>T p.(Gly745Ter)	2586-2687insT c.2454_2455insT p.(Glu819Ter)
2176insC c.2045dup p.(Gln685ThrfsTer4)	2372del8 c.2241_2248del p.(Ile748SerfsTer28)	2594delGT c.2463_2464del p.(Ser821ArgfsTer4)
c.2045delC c.2045del p.(Thr682LysfsTer40)	P750L c.2249C>T p.(Pro750Leu)	c.2467_2470delGAAA c.2467_2470del p.(Glu823LeufsTer6)
2183delAA c.2051_2052del p.(Lys684ThrfsTer4)	c.2250delT c.2250del p.(Arg751AlafsTer4)	E822X c.2464G>T p.(Glu822Ter)
2184delA c.2052del p.(Lys684AsnfsTer38)	c.2261delT c.2261del p.(Val754GlyfsTer17)	2603delT c.2472del p.(Asn825ThrfsTer5)
2184insA c.2052dup p.(Gln685ThrfsTer4)	2406_2407delinsT c.2274_2275delinsT p.(Thr760ArgfsTer11)	E826X c.2476G>T p.(Glu826Ter)
2184del4 c.2052_2055del p.(Lys684AsnfsTer37)	2409delC c.2277del p.(Thr760ArgfsTer11)	c.2489_2490insA c.2489dup p.(Glu831GlyfsTer5)
2183AA->G c.2051_2052delinsG p.(Lys684SerfsTer38)	R764X c.2290C>T p.(Arg764Ter)	K830X c.2488A>T p.(Lys830Ter)
2185insC c.2053dup p.(Gln685ProfsTer4)	2429delG c.2298del p.(Arg766SerfsTer5)	2622+1G->A c.2490+1G>A p.?
c.2053delC c.2053del p.(Gln685AsnfsTer37)	Q767X c.2299C>T p.(Gln767Ter)	2623-2A->G c.2491-2A>G p.?
c.2053_2054insAA c.2054_2055dup p.(Ser686AsnfsTer37)	2435insC c.2303dup p.(Val769CysfsTer10)	2623-1G->C c.2491-1G>C p.?
Q685X c.2053C>T p.(Gln685Ter)	2456delAC c.2324_2325del p.(His775LeufsTer3)	E831X c.2491G>T p.(Glu831Ter)

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c.2493delG c.2493del p.(Glu831AspfsTer13)	2790-1G->T c.2658-1G>T p.?	3007delG c.2875del p.(Ala959HisfsTer9)
2634insT c.2502dup p.(Asp835Ter)	Q890X c.2668C>T p.(Gln890Ter)	3011delC c.2879del p.(Pro960LeufsTer8)
2634delT c.2502del p.(Phe834LeufsTer10)	2837delG c.2705del p.(Ser902ThrfsTer4)	c.2879_2882delCTAT c.2879_2882del p.(Pro960ArgfsTer7)
2640delT c.2508del p.(Asp836GluTer8)	c.2732_2733insA c.2732_2733insA p.(Ser911ArgfsTer64)	3012delT c.2880del p.(Met961CysfsTer7)
2655del26 c.2523_2548del p.(Ala842SerfsTer45)	c.2733insA c.2733_2734insA p.(Ser912IlefsTer63)	3015_3018dupGTCA c.2883_2886dup p.(Thr963ValfsTer13)
c.2538delG c.2538del p.(Trp846Ter)	S912X c.2735C>A p.(Ser912Ter)	S962X c.2885C>A p.(Ser962Ter)
W846X c.2537G>A p.(Trp846Ter)	S912L c.2735C>T p.(Ser912Leu)	S962X c.2885C>G p.(Ser962Ter)
W846X c.2538G>A p.(Trp846Ter)	2869insG c.2737_2738insG p.(Tyr913Ter)	3028delA c.2896del p.(Thr966ArgfsTer2)
2672delA c.2540del p.(Asn847ThrfsTer13)	Y913X c.2739T>A p.(Tyr913Ter)	3029delC c.2897del p.(Thr966SerfsTer2)
Y849X c.2547C>A p.(Tyr849Ter)	c.2745_2746delGT c.2745_2746del p.(Phe916LeufsTer58)	3031-3032delinsA c.2899_2900delinsA p.(Leu967ArgfsTer14)
R851X c.2551C>T p.(Arg851Ter)	2896insAG c.2763_2764dup p.(Val922GluTer2)	G970R c.2908G>C p.(Gly970Arg)
2686dupT c.2554dup p.(Tyr852LeufsTer44)	D924N c.2770G>A p.(Asp924Asn)	3040+1G->A c.2908+1G>A p.?
c.2556dupT c.2556dup p.(Ile853TyrfsTer43)	2909delT c.2777del p.(Leu926CysfsTer16)	3040+1G->T c.2908+1G>T p.?
2694delT c.2562del p.(Val855SerfsTer5)	2907delTT c.2776_2777del p.(Leu926AlafsTer48)	c.2909_2924dup16 c.2909_2924dup p.(Phe976TrpfsTer4)
c.2573delG c.2573del p.(Ser858ThrfsTer2)	L927P c.2780T>C p.(Leu927Pro)	3041delG c.2909del p.(Gly970ValfsTer11)
2708del13 c.2576_2588del p.(Leu859Ter)	c.2789delG c.2789del p.(Gly930AspfsTer12)	3041-1G->A c.2909-1G>A p.?
2711delT c.2583del p.(Phe861LeufsTer3)	R933G c.2797A>G p.(Arg933Gly)	3041-1G->C c.2909-1G>C p.?
2721del11 c.2589_2599del p.(Ile864SerfsTer28)	2935del11 c.2803_2813del p.(Leu935AlafsTer36)	G970D c.2909G>A p.(Gly970Asp)
2723delTT c.2592_2593del p.(Ile864MetfsTer31)	2937_2942delinsTCAGA c.2805_2810del p.(Pro936_Leu937del)	3056delGA c.2924_2925del p.(Arg975IlefsTer10)
2732insA c.2601dup p.(Val868SerfsTer28)	c.2805_2810delinsTCAGA c.2805_2810delinsTCAGA p.(Pro936GlnfsTer6)	3061insA c.2929_2930insA p.(Ser977TyrfsTer9)
2737delA c.2605del p.(Ile869PhefsTer37)	2942insT c.2810dup p.(Val938GlyfsTer37)	S977F c.2930C>T p.(Ser977Phe)
2747delC c.2615del p.(Ala872GluTer34)	2948delA c.2816del p.(His939LeufsTer3)	K978X c.2932A>T p.(Lys978Ter)
2751+1G->A c.2619+1G>A p.?	2949del5 c.2819_2823del p.(Thr940AsnfsTer33)	D979V c.2936A>T p.(Asp979Val)
2751+2T->A c.2619+2T>A p.?	c.2818_2831del c.2818_2831del p.(Thr940ValfsTer30)	3090del4 c.2958_2961del p.(Pro988LeufsTer11)
2751+2T->C c.2619+2T>C p.?	2951insA c.2819_2820insA p.(Leu941SerfsTer34)	3089insTC c.2959_2960dup p.(Pro988CysfsTer13)
2752-2A->G c.2620-2A>G p.?	2954delT c.2822del p.(Leu941GlnfsTer27)	3095insT c.2964dup p.(Leu989SerfsTer5)
2752-1G->T c.2620-1G>T p.?	2957delT c.2825del p.(Ile942ThrfsTer26)	c.2982_2988+2delCATCCAGGT c.2982_2988+2del p.?
2777insTG c.2644_2645dup p.(Trp882CysfsTer25)	2967delG c.2835del p.(Ile947PhefsTer21)	Q996X c.2986C>T p.(Gln996Ter)
W882X c.2645G>A p.(Trp882Ter)	S945L c.2834C>T p.(Ser945Leu)	3120G->A c.2988G>A p.(Gln996=)
W882X c.2646G>A p.(Trp882Ter)	c.2839delA c.2839del p.(Ile947PhefsTer21)	3120+1G->A c.2988+1G>A p.?
2787del16 c.2655_2657+13del p.?	K946X c.2836A>T p.(Lys946Ter)	3120+1G->C c.2988+1G>C p.?
2789+2insA c.2657+2_2657+3insA p.?	2975delT c.2843del p.(Leu948TyrfsTer20)	3121-2A->C c.2989-2A>C p.?
2789+5G->A c.2657+5G>A p.?	K951X c.2851A>T p.(Lys951Ter)	3121-2A->G c.2989-2A>G p.?
2790-2A->G c.2658-2A>G p.?	M952T c.2855T>C p.(Met952Thr)	3121-2A->T c.2989-2A>T p.?
2790-1G->C c.2658-1G>C p.?	2991del32 c.2859_2890del p.(Leu953PhefsTer11)	3121-1G->A c.2989-1G>A p.?

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3121-1G->T c.2989-1G>T p.?	3271+2T->C c.3139+2T>C p.?	W1098X c.3294G>A p.(Trp1098Ter)
3126delA c.2994del p.(Leu998PhefsTer2)	3272-26A->G c.3140-26A>G p.?	W1098C c.3294G>C p.(Trp1098Cys)
3129del4 c.2997_3000del p.(Ile1000Ter)	3272-1G->A c.3140-1G>A p.?	W1098C c.3294G>T p.(Trp1098Cys)
3130delA c.2998del p.(Ile1000LeufsTer2)	F1052V c.3154T>G p.(Phe1052Val)	F1099L c.3297C>A p.(Phe1099Leu)
3132delTG c.3002_3003del p.(Val1001AspfsTer45)	3293delA c.3161del p.(His1054LeufsTer6)	Q1100X c.3298C>T p.(Gln1100Ter)
3139delG c.3008del p.(Gly1003GlufsTer3)	H1054D c.3160C>G p.(His1054Asp)	M1101K c.3302T>A p.(Met1101Lys)
G1003X c.3007G>T p.(Gly1003Ter)	c.3180delA c.3180del p.(Gly1061AspfsTer22)	M1101R c.3302T>G p.(Met1101Arg)
3143del9 c.3011_3019del p.(Ala1004_Ala1006del)	L1059X c.3176T>G p.(Leu1059Ter)	R1102X c.3304A>T p.(Arg1102Ter)
3143delC c.3011del p.(Ala1004ValfsTer2)	G1061R c.3181G>A p.(Gly1061Arg)	E1104X c.3310G>T p.(Glu1104Ter)
A1006E c.3017C>A p.(Ala1006Glu)	G1061R c.3181G>C p.(Gly1061Arg)	3447delG c.3315del p.(Met1105IlefsTer16)
3152delT c.3021del p.(Val1008SerfsTer15)	W1063X c.3189G>A p.(Trp1063Ter)	c.3321dup c.3321dup p.(Val1108CysfsTer48)
3154delG c.3022del p.(Val1008SerfsTer15)	L1065P c.3194T>C p.(Leu1065Pro)	3453delT c.3321del p.(Phe1107LeufsTer14)
L1011X c.3032T>G p.(Leu1011Ter)	R1066C c.3196C>T p.(Arg1066Cys)	c.3322_3323delGT c.3322_3323del p.(Val1108HisfsTer47)
3165dupA c.3033dup p.(Gln1012ThrfsTer35)	R1066H c.3197G>A p.(Arg1066His)	3454delG c.3322del p.(Val1108SerfsTer13)
Q1012X c.3034C>T p.(Gln1012Ter)	c.3199delG c.3199del p.(Ala1067ProfsTer16)	3456delC c.3324del p.(Ile1109SerfsTer12)
3171insC c.3039dup p.(Tyr1014LeufsTer33)	G1069R c.3205G>A p.(Gly1069Arg)	c.3325delA c.3325del p.(Ile1109SerfsTer12)
3171delC c.3039del p.(Tyr1014ThrfsTer9)	R1070W c.3208C>T p.(Arg1070Trp)	c.3344_3345insA c.3344_3345insA p.(Phe1116LeufsTer40)
Y1014C c.3041A>G p.(Tyr1014Cys)	R1070Q c.3209G>A p.(Arg1070Gln)	S1118F c.3353C>T p.(Ser1118Phe)
F1016S c.3047T>C p.(Phe1016Ser)	3349insT c.3217dup p.(Tyr1073LeufsTer3)	3497delC c.3365del p.(Thr1122LysfsTer12)
3199del6 c.3067_3072del p.(Ile1023_Val1024del)	F1074L c.3220T>C p.(Phe1074Leu)	3499+1G>A c.3367+1G>A p.?
3213-3214insT c.3081dup p.(Met1028TyrfsTer19)	F1074L c.3222T>A p.(Phe1074Leu)	3499+1G>T c.3367+1G>T p.?
Y1032C c.3095A>G p.(Tyr1032Cys)	F1074L c.3222T>G p.(Phe1074Leu)	3499+2T>A c.3367+2T>A p.?
3238delA c.3106del p.(Thr1036ProfsTer24)	3359delC c.3227del p.(Thr1076IlefsTer7)	3499+2T>C c.3367+2T>C p.?
Q1035X c.3103C>T p.(Gln1035Ter)	3359delCT c.3229_3230del p.(Leu1077ValfsTer78)	3500-2A->G c.3368-2A>G p.?
T1036N c.3107C>A p.(Thr1036Asn)	3359delCTCTG c.3227_3231del p.(Thr1076IlefsTer78)	3500-2A->T c.3368-2A>T p.?
S1037X c.3110C>A p.(Ser1037Ter)	c.3231_3232delGT c.3231_3232del p.(Phe1078ProfsTer77)	3500-1G->A c.3368-1G>A p.?
Q1038X c.3112C>T p.(Gln1038Ter)	L1077P c.3230T>C p.(Leu1077Pro)	c.3380_3383del c.3380_3383del p.(Gly1127GlufsTer6)
Q1042TfsX5 c.3123dup p.(Gln1042ThrfsTer5)	H1085P c.3254A>C p.(His1085Pro)	3516del5 c.3384_3388del p.(Val1129TyrfsTer25)
Q1042X c.3124C>T p.(Gln1042Ter)	3396delC c.3264del p.(Trp1089GlyfsTer13)	R1128X c.3382A>T p.(Arg1128Ter)
E1044X c.3130G>T p.(Glu1044Ter)	W1089X c.3266G>A p.(Trp1089Ter)	3521del14 c.3389_3402del p.(Gly1130ValfsTer21)
E1046X c.3136G>T p.(Glu1046Ter)	Y1092X c.3276C>A p.(Tyr1092Ter)	3528delC c.3397del p.(Leu1133Ter)
3271+1delG c.3139+1del p.?	Y1092X c.3276C>G p.(Tyr1092Ter)	3532AC->GTA c.3400_3401delinsGTA p.(Thr1134ValfsTer22)
3271delGG c.3139_3139+1del p.?	3422del16 c.3290_3305del p.(Arg1097GlnfsTer2)	3539del16 c.3407_3422del p.(Ala1136ValfsTer7)
3271+1G->A c.3139+1G>A p.?	W1098R c.3292T>C p.(Trp1098Arg)	c.3411_3414delGAAT c.3411_3414del p.(Met1137IlefsTer3)
3271+1G->C c.3139+1G>C p.?	3425delG c.3294del p.(Trp1098CysfsTer4)	3556insAGTA c.3421_3424dup p.(Thr1142LysfsTer15)
3271+1G->T c.3139+1G>T p.?	W1098X c.3293G>A p.(Trp1098Ter)	c.3426_3427insGTAA c.3426_3427insGTAA p.(Leu1143ValfsTer14)

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Q1144X c.3430C>T p.(Gln1144Ter)	Q1186X c.3556C>T p.(Gln1186Ter)	L1243X c.3728T>A p.(Leu1243Ter)
W1145X c.3434G>A p.(Trp1145Ter)	3695delC c.3563del p.(Ser1188Ter)	G1244E c.3731G>A p.(Gly1244Glu)
W1145X c.3435G>A p.(Trp1145Ter)	c.3569_3570delITT c.3569_3570del p.(Val1190AspfsTer4)	T1246I c.3737C>T p.(Thr1246Ile)
D1152H c.3454G>C p.(Asp1152His)	S1196X c.3587C>A p.(Ser1196Ter)	G1247X c.3739G>T p.(Gly1247Ter)
V1153E c.3458T>A p.(Val1153Glu)	S1196X c.3587C>G p.(Ser1196Ter)	S1248X c.3743C>A p.(Ser1248Ter)
3600G->A c.3468G>A p.(Leu1156=)	3724delG c.3592del p.(Val1198Ter)	3876delA c.3744del p.(Lys1250ArgfsTer9)
3600+1G->A c.3468+1G>A p.?	3732delA c.3600del p.(Asp1201MetfsTer10)	S1248X c.3743C>G p.(Ser1248Ter)
3600+2insT c.3468+2dup p.?	3730A->TCT c.3598delinsTCT p.(Lys1200SerfsTer12)	3878delG c.3747del p.(Lys1250ArgfsTer9)
3600+1G->T c.3468+1G>T p.?	3731-3732AA->G c.3599_3600delinsG p.(Lys1200ArgfsTer11)	G1249R c.3745G>A p.(Gly1249Arg)
3600+5G->A c.3468+5G>A p.?	3737delA c.3605del p.(Asp1202AlafsTer9)	G1249R c.3745G>C p.(Gly1249Arg)
3601-2A->C c.3469-2A>C p.?	W1204X c.3611G>A p.(Trp1204Ter)	S1251N c.3752G>A p.(Ser1251Asn)
3601-2A->G c.3469-2A>G p.?	W1204X c.3612G>A p.(Trp1204Ter)	3886insA c.3754dup p.(Thr1252AsnfsTer13)
3601-1G->A c.3469-1G>A p.?	3747delC c.3615del p.(Ser1206GlnfsTer5)	3889dupT c.3758dup p.(Leu1253PhefsTer12)
3601-1G->C c.3469-1G>C p.?	3750delA c.3618del p.(Gly1208AlafsTer3)	3892delITT c.3760_3761del p.(Leu1254IlefsTer10)
3601-1G->T c.3469-1G>T p.?	3750delAG c.3618_3619del p.(Gly1208ProfsTer56)	L1254X c.3761T>A p.(Leu1254Ter)
R1158X c.3472C>T p.(Arg1158Ter)	S1206X c.3617C>G p.(Ser1206Ter)	L1254X c.3761T>G p.(Leu1254Ter)
S1159P c.3475T>C p.(Ser1159Pro)	3755dupG c.3623dup p.(Gln1209ProfsTer56)	S1255P c.3763T>C p.(Ser1255Pro)
S1159F c.3476C>T p.(Ser1159Phe)	3755delG c.3623del p.(Gly1208AlafsTer3)	S1255X c.3764C>A p.(Ser1255Ter)
c.3477delT c.3477del p.(Val1160Ter)	c.3635delT c.3635del p.(Val1212AlafsTer16)	3898insC c.3767dup p.(Leu1258PhefsTer7)
3613AGCCGA->GG c.3481_3486delinsGG p.(Ser1161GlyfsTer30)	3789insA c.3658dup p.(Thr1220AsnfsTer45)	3905insT c.3773dup p.(Leu1258PhefsTer7)
3617delGA c.3486_3487del p.(Val1163LeufsTer2)	3791delC c.3659del p.(Thr1220LysfsTer8)	3905delT c.3773del p.(Leu1258Ter)
R1162X c.3484C>T p.(Arg1162Ter)	c.3678delA c.3678del p.(Leu1227Ter)	L1253X c.3773T>A p.(Leu1258Ter)
3622insT c.3492dup p.(Lys1165Ter)	3821delT c.3691del p.(Ser1231ProfsTer4)	E1266X c.3796G>T p.(Glu1266Ter)
K1165X c.3493A>T p.(Lys1165Ter)	I1234V c.3700A>G p.(Ile1234Val)	I1269N c.3806T>A p.(Ile1269Asn)
c.3495delG c.3495del p.(Lys1165AsnfsTer27)	3840delT c.3708del p.(Gly1237AlafsTer22)	3940delG c.3808del p.(Asp1270MetfsTer8)
3629delT c.3497del p.(Phe1166SerfsTer26)	3847delA c.3715del p.(Arg1239GlyfsTer20)	D1270N c.3808G>A p.(Asp1270Asn)
c.3525_3537del c.3525_3537del p.(Thr1176AsnfsTer12)	3849G->A c.3717G>A p.(Arg1239=)	3944delGT c.3816_3817del p.(Ser1273LeufsTer28)
c.3524delC c.3524del p.(Pro1175LeufsTer17)	3849+1G->A c.3717+1G>A p.?	W1274X c.3822G>A p.(Trp1274Ter)
3659delC c.3528del p.(Lys1177SerfsTer15)	3849+4A->G c.3717+4A>G p.?	3959delC c.3827del p.(Ser1276Ter)
3662delA c.3530del p.(Lys1177SerfsTer15)	3849+5G->A c.3717+5G>A p.?	3960-3961delA c.3829del p.(Ile1277Ter)
3667ins4 c.3532_3535dup p.(Thr1179IlefsTer17)	3849+40A->G c.3717+40A>G p.?	3967delITT c.3835_3836del p.(Leu1279AlafsTer22)
3667del4 c.3536_3539del p.(Thr1179AsnfsTer12)	3849+10kbC->T c.3718-2477C>T p.?	Q1280X c.3838C>T p.(Gln1280Ter)
S1178X c.3533C>A p.(Ser1178Ter)	3850-3T->G c.3718-3T>G p.?	Q1281X c.3841C>T p.(Gln1281Ter)
S1178X c.3533C>G p.(Ser1178Ter)	3850-1G->A c.3718-1G>A p.?	W1282X c.3845G>A p.(Trp1282Ter)
c.3539_3554del c.3539_3554del p.(Lys1180ThrfsTer7)	V1240G c.3719T>G p.(Val1240Gly)	W1282X c.3846G>A p.(Trp1282Ter)
Y1182X c.3546C>G p.(Tyr1182Ter)	3856delC c.3724del p.(Leu1242SerfsTer17)	R1283M c.3848G>T p.(Arg1283Met)

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G1287X c.3859G>T p.(Gly1287Ter)	4096-1G->A c.3964-1G>A p.?	c.4163_4167delTAAAA c.4163_4167del p.(Leu1388ProfsTer5)
Q1291X c.3871C>T p.(Gln1291Ter)	L1324P c.3971T>C p.(Leu1324Pro)	4301delA c.4170del p.(Ala1391HisfsTer7)
Q1291R c.3872A>G p.(Gln1291Arg)	4108delT c.3976del p.(Ser1326LeufsTer2)	Q1390X c.4168C>T p.(Gln1390Ter)
Q1291H c.3873G>C p.(Gln1291His)	4120delCA c.3988_3989del p.(Gln1330ValfsTer6)	c.4187delC c.4187del p.(Thr1396LysfsTer2)
4005+1G->A c.3873+1G>A p.?	Q1330X c.3988C>T p.(Gln1330Ter)	4326delTC c.4197_4198del p.(Cys1400Ter)
4005+1G->T c.3873+1G>T p.?	c.3999delG c.3999del p.(Lys1334SerfsTer13)	4332delTG c.4200_4201del p.(Cys1400Ter)
4005+2T->C c.3873+2T>C p.?	L1335P c.4004T>C p.(Leu1335Pro)	C1400X c.4200T>A p.(Cys1400Ter)
4006-2A->G c.3874-2A>G p.?	c.4028delG c.4028del p.(Gly1343AlafsTer4)	E1401X c.4201G>T p.(Glu1401Ter)
4006-1G->A c.3874-1G>A p.?	4160insG c.4028dup p.(Cys1344LeufsTer15)	E1409X c.4225G>T p.(Glu1409Ter)
4006delA c.3876del p.(Val1293TyrfsTer35)	4165delGT c.4033_4034del p.(Val1345ProfsTer13)	C1410X c.4230C>A p.(Cys1410Ter)
4010del4 c.3883_3886del p.(Ile1295PhefsTer32)	4168delCTAAGCC c.4036_4042del p.(Leu1346MetfsTer6)	Q1411X c.4231C>T p.(Gln1411Ter)
4015delA c.3883del p.(Ile1295PhefsTer33)	c.4036dupC c.4036dup p.(Leu1346ProfsTer13)	Q1412X c.4234C>T p.(Gln1412Ter)
c.3883_3884insG c.3883_3884insG p.(Ile1295SerfsTer7)	p.S1347PfsX13 c.4035_4038dup p.(Ser1347ProfsTer13)	4374+1G->A c.4242+1G>A p.?
4016insT c.3889dup p.(Ser1297PhefsTer5)	4168delCTAAG c.4037_4041del p.(Leu1346ProfsTer11)	4374+1G->T c.4242+1G>T p.?
c.3889delT c.3889del p.(Ser1297LeufsTer31)	4172delGC c.4040_4041del p.(Ser1347ThrfsTer11)	4382delA c.4251del p.(Glu1418ArgfsTer14)
4022insT c.3891dup p.(Gly1298TrpfsTer4)	4177delG c.4046del p.(Gly1349AlafsTer5)	4428insGA c.4300_4301dup p.(Ser1435GlyfsTer14)
c.3893delG c.3893del p.(Gly1298GlufsTer30)	G1349D c.4046G>A p.(Gly1349Asp)	S1455X c.4364C>G p.(Ser1455Ter)
4040delA c.3908del p.(Asn1303ThrfsTer25)	K1351X c.4051A>T p.(Lys1351Ter)	Q1476X c.4426C>T p.(Gln1476Ter)
4040dupA c.3908dup p.(Asn1303LysfsTer6)	4197_4198delCT c.4065_4066del p.(Leu1356GlyfsTer2)	L1480P c.4439T>C p.(Leu1480Pro)
K1302X c.3904A>T p.(Lys1302Ter)	4203TAG->AA c.4071_4073delinsAA p.(Arg1358AsnfsTer22)	
N1303K c.3909C>G p.(Asn1303Lys)	4209TGTT->AA c.4077_4080delinsAA p.(Val1360ThrfsTer3)	
4048insCC c.3917_3918dup p.(Tyr1307ProfsTer22)	c.4078delG c.4078del p.(Val1360PhefsTer20)	
Y1307X c.3921T>A p.(Tyr1307Ter)	4218insT c.4086dup p.(Lys1363Ter)	
E1308X c.3922G>T p.(Glu1308Ter)	4222delG c.4090del p.(Ala1364ArgfsTer16)	
Q1309X c.3925C>T p.(Gln1309Ter)	I1366N c.4097T>A p.(Ile1366Asn)	
	4237-4242delinsAGAA c.4105_4110delinsAGAA p.(Leu1369ArgfsTer16)	
W1310X c.3929G>A p.(Trp1310Ter)	E1371X c.4111G>T p.(Glu1371Ter)	
W1310X c.3930G>A p.(Trp1310Ter)		
4064-4065delinsAATATG c.3932_3933delinsAATATG p.(Ser1311LysfsTer12)	H1375P c.4124A>C p.(His1375Pro)	
Q1313X c.3937C>T p.(Gln1313Ter)	4259del5 c.4127_4131del p.(Leu1376SerfsTer8)	
W1316X c.3947G>A p.(Trp1316Ter)	4268+2T->G c.4136+2T>G p.?	
4089delA c.3957del p.(Asp1320MetfsTer8)	4271delC c.4139del p.(Thr1380AsnfsTer4)	
4089ins4 c.3957_3958insAGGG p.(Asp1320ArgfsTer3)	Y1381X c.4143C>A p.(Tyr1381Ter)	
4095+1G->A c.3963+1G>A p.?	Y1381X c.4143C>G p.(Tyr1381Ter)	
4095+1G->C c.3963+1G>C p.?	4279insA c.4147dup p.(Ile1383AsnfsTer3)	
4095+1G->T c.3963+1G>T p.?	Q1382X c.4144C>T p.(Gln1382Ter)	