

Title: Spastic Paraplegia 7 GeneReview Table 4

Authors: Casari G and Marconi R

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Note: The following information is provided by the authors and has not been reviewed by *GeneReviews* staff.

**Table 4. SPG7 Pathologic Allelic Variants**

<b>SPG7 Location, Exon</b>	<b>DNA Nucleotide Change</b>	<b>Protein Amino Acid Change</b>	<b>Reference</b>	<b>Reference Sequences</b>
1	1A>T	initiation	Elleuch et al 2006	<a href="#">NM_003119.2</a> <a href="#">NP_003110.1</a>
1	28G>A	Ala10Ser	Wilkinson et al 2004	
2	233T>A	Leu78X non sense	Arnoldi et al 2008	
2	244-246delACA	Gln82del	Elleuch et al 2006	
5	698T>C	Leu233Pro	Arnoldi et al 2008	
6	784del2	Frameshift, truncated protein	Casari et al 1998	
6	850_-851 delTTinsC	Phe284ProfsX44	Elleuch et al 2006	
8	1045G>A	Gly349Ser	Bonn et al 2010	
8	1047insC	Frameshift, truncated protein	Tzoulis et al 2008	
8	1057_-1085del29	Frameshift 353-384X385	Wilkinson et al 2004	
11-13	1447-1778 del 331	Glu484_Lys593 del119	Arnoldi et al 2008	
11	1450-1458del 9	Glu,Arg,Arg484-486del	McDermott et al 2001	
11	1519 C>T	Glu507X	Elleuch et al 2006	
Intron 11	155211 G>T	splice site	Warnecke et al 2010	
12	1616delC	Val540fs	Arnoldi et al 2008	
12	1636G>A	Glu546Lys	Arnoldi et al 2008	
13	1749G>C	Trp583Cys	Bonn et al 2010	
13	1715C>T	Ala572Val	Wilkinson et al 2004	
12-17	del 9,5kb	Large deletion	Casari et al 1998	
13	1729G>A	Gly577Ser	Wilkinson et al 2004	
13	1742-1744del3	Val581del	Elleuch et al 2006	
14	1904C>T	Ser635Leu	Elleuch et al 2006	
15	1948G>C	Asp650His	Elleuch et al 2006	
15	2026T>C	Phe676Leu	Wilkinson et al 2004	
15	2075G>C	Ser692Thr	Warnecke et al 2007	
17	2191G>A	Ala731Thr	Arnoldi et al 2008	
17	2216dupA	Asn739fs	Arnoldi et al 2008	
17	2228 Ins A	Frameshift, stop	Casari et al 1998	

See [Quick Reference](#) for an explanation of nomenclature. *GeneReviews* follows the standard naming conventions of the Human Genome Variation Society ([www.hgvs.org](http://www.hgvs.org)).

## References

- Arnoldi A, Tonelli A, Crippa F, Villani G, Pacelli C, Sironi M, Pozzoli U, D'Angelo MG, Meola G, Martinuzzi A, Crimella C, Redaelli F, Panzeri C, Renieri A, Comi GP, Turconi AC, Bresolin N, Bassi MT (2008) A clinical, genetic, and biochemical characterization of SPG7 mutations in a large cohort of patients with hereditary spastic paraplegia. *Hum Mutat.* 29:522-31.
- Bonn F, Pantakani K, Shoukier M, Langer T, Mannan AU (2010) Functional evaluation of paraplegin mutations by a yeast complementation assay. *Hum Mutat.* 31:617-21.
- Casari G, De Fusco M, Ciarmatori S, Zeviani M, Mora M, Fernandez P, De Michele G, Filla A, Coccozza S, Marconi R, Dürr A, Fontaine B, Ballabio A (1998) Spastic paraplegia and OXPHOS impairment caused by mutations in paraplegin, a nuclear-encoded mitochondrial metalloprotease. *Cell.* 93:973-83.
- Elleuch N, Depienne C, Benomar A, Hernandez AM, Ferrer X, Fontaine B, Grid D, Tallaksen CM, Zemmouri R, Stevanin G, Durr A, Brice A (2006) Mutation analysis of the paraplegin gene (SPG7) in patients with hereditary spastic paraplegia. *Neurology.* 66:654-9.
- McDermott CJ, Roberts D, Tomkins J, Bushby KM, Shaw PJ (2003) Spastin and paraplegin gene analysis in selected cases of motor neurone disease (MND). *Amyotroph Lateral Scler Other Motor Neuron Disord.* 2003 Jun;4(2):96-9.
- Tzoulis C, Denora PS, Santorelli FM, Bindoff LA (2008) Hereditary spastic paraplegia caused by the novel mutation 1047insC in the SPG7 gene. *J Neurol.* 2008 Aug;255(8):1142-4. Epub 2008 Jun 23.
- Warnecke T, Duning T, Schirmacher A, Mohammadi S, Schwindt W, Lohmann H, Dziewas R, Deppe M, Ringelstein EB, Young P (2010) A novel splice site mutation in the SPG7 gene causing widespread fiber damage in homozygous and heterozygous subjects. *Mov Disord.* 25:413-20.
- Warnecke T, Duning T, Schwan A, Lohmann H, Epplen JT, Young P (2007) A novel form of autosomal recessive hereditary spastic paraplegia caused by a new SPG7 mutation. *Neurology.* 69:368-75.
- Wilkinson PA, Crosby AH, Turner C, Bradley LJ, Ginsberg L, Wood NW, Schapira AH, Warner TT (2004) A clinical, genetic and biochemical study of SPG7 mutations in hereditary spastic paraplegia. *Brain.* 127(Pt 5):973-80.