

Title: Primary Autosomal Recessive Microcephalies and Seckel Syndrome Spectrum Disorders *GeneReview* Tables 7 – 8

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

Table 7. Published Pathogenic *CDK5RAP2* Allelic Variants (Based on NM_018249.4 NP_060719.4 Reference Sequences)

DNA Nucleotide Change	Protein Amino Acid Change
c.246T>A (reported as c243T>A in Bond et al [2005]) [Hassan et al 2007, Park et al 2011]	p.Tyr82Ter
c.524_528del [Tan et al 2013]	p.Gln175ArgfsTer42
c.700G>T [Pagnamenta et al 2012]	p.Glu234Ter
c.4005-1G>A [Tan et al 2013]	Splice mutation (intron 26)
c.4186-15A>G (IVS26-15A>G) [Bond et al 2005]	p.Arg1334SerfsTer5 [Park et al 2011] (reported as Glu385fsTer4 in Bond et al [2005])
c.4441C>T [Issa et al 2013]	p.Arg1481Ter

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

Table 8. Published Pathogenic *CASC5* Allelic Variants (Based on NM_170589 and NP_733468.2 Reference Sequences)

DNA Nucleotide Change	Protein Amino Acid Change
c.6125 G>A [Genin et al 2012]	p.Met2041Ile + abnormal splicing skipping exon 18

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

References

- Bond J, Roberts E, Springell K, Lizarraga SB, Scott S, Higgins J, Hampshire DJ, Morrison EE, Leal GF, Silva EO, Costa SM, Baralle D, Raponi M, Karbani G, Rashid Y, Jafri H, Bennett C, Corry P, Walsh CA, Woods CG. A centrosomal mechanism involving CDK5RAP2 and CENPJ controls brain size. *Nat Genet.* 2005;37:353-5.
- Genin A, Desir J, Lambert N, Biervliet M, Van Der Aa N, Pierquin G, Killian A, Tosi M, Urbina M, Lefort A, Libert F, Pirson I, Abramowicz M. Kinetochore KMN network gene CASC5 mutated in primary microcephaly. *Hum Mol Genet.* 2012;21:5306-17.
- Hassan MJ, Khurshid M, Azeem Z, John P, Ali G, Chishti MS, Ahmad W. Previously described sequence variant in CDK5RAP2 gene in a Pakistani family with autosomal recessive primary microcephaly. *BMC Med Genet.* 2007;8:58.
- Issa L, Mueller K, Seufert K, Kraemer N, Rosenkotter H, Ninnemann O, Buob M, Kaindl AM, Morris-Rosendahl DJ. Clinical and cellular features in patients with primary autosomal recessive microcephaly and a novel CDK5RAP2 mutation. *Orphanet J Rare Dis.* 2013;8:59.
- Pagnamenta AT, Murray JE, Yoon G, Sadighi Akha E, Harrison V, Bicknell LS, Ajilogba K, Stewart H, Kini U, Taylor JC, Keays DA, Jackson AP, Knight SJ. A novel nonsense CDK5RAP2 mutation in a Somali child with primary microcephaly and sensorineural hearing loss. *Am J Med Genet A.* 2012;158A:2577-82.
- Park JS, Lee MK, Rosales JL, Lee KY. Primary microcephaly 3 (MCPH3): revisiting two critical mutations. *Cell Cycle.* 2011;10:1331-3.
- Tan CA, Topper S, Ward Melver C, Stein J, Reeder A, Arndt K, Das S. The first case of CDK5RAP2-related primary microcephaly in a non-consanguineous patient identified by next generation sequencing. *Brain Dev.* 2013 May 28. pii: S0387-7604(13)00164-2.