

Variant: NM_000314.7(PTEN):c.610C>G (p.Pro204Ala)

Version: 2.0

CA000535 [↗](#)

189415 (ClinVar) [↗](#)

Gene: PTEN ([HGNC:5728](#))

Condition: PTEN hamartoma tumor syndrome ([MONDO:0017623](#))

Inheritance Mode: Autosomal dominant inheritance

UUID: b5627c7e-eb93-4a97-95aa-58fd645e077c

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HGVS expressions

NM_000314.7:c.610C>G

NM_000314.7(PTEN):c.610C>G (p.Pro204Ala)

NC_000010.11:g.87952235C>G

CM000672.2:g.87952235C>G

NC_000010.10:g.89711992C>G

CM000672.1:g.89711992C>G

NC_000010.9:g.89701972C>G

NG_007466.2:g.93797C>G

ENST00000700029.2:c.610C>G

ENST00000710265.1:c.610C>G

ENST00000472832.3:c.610C>G

ENST00000688158.2:n.1345C>G

ENST00000688922.2:c.*440C>G

ENST00000700021.1:c.565C>G

ENST00000700022.1:c.493-5618C>G

ENST00000700023.1:n.1768C>G

ENST00000700024.1:n.2002C>G

ENST00000700025.1:n.1379C>G

ENST00000700029.1:c.444C>G

ENST00000706954.1:c.610C>G

ENST00000706955.1:c.*645C>G

ENST00000686459.1:c.*196C>G

ENST00000688158.1:c.*721C>G

ENST00000688308.1:c.610C>G

ENST00000688922.1:c.531C>G

ENST00000693560.1:c.1129C>G

ENST00000371953.8:c.610C>G

ENST00000371953.7:c.610C>G

ENST00000472832.2:c.37C>G

NM_000314.5:c.610C>G

NM_000314.6:c.610C>G

NM_001304717.2:c.1129C>G

NM_001304718.1:c.19C>G

NM_001304717.5:c.1129C>G

NM_001304718.2:c.19C>G

NM_000314.8:c.610C>G

Pathogenic

Met criteria codes 6

PM2_Supporting PS4_Supporting
PP2 PP3 PS3_Moderate
PM6_Strong

Not Met criteria codes 20

PP1 PP4 PS1 PS2 PM1
PM3 PM5 PM4 BA1 PVS1
BP5 BP7 BP4 BP3 BP1 BP2
BS1 BS4 BS3 BS2

Evidence Links 2

Expert Panel

PTEN VCEP [↗](#)

Criteria Specification Information

- [Criteria Specification: ClinGen PTEN Expert Panel Specifications to the ACMG/AMP Variant Interpretation Guidelines for PTEN Version 3.0.0](#)
- [Criteria Specification Approval History](#)
- [Criteria Specifications for this VCEP](#)

Evidence submitted by expert panel

PTEN VCEP

PTEN c.610C>G (p.Pro204Ala) meets criteria to be classified as pathogenic for PTEN Hamartoma Tumor syndrome in an autosomal dominant manner using modified ACMG criteria (ACMG Classification Rules Specified for PTEN Variant Curation version 3.0.0). Please see a summary of the rules and criteria codes in the "PTEN ACMG Specifications Summary" document (assertion method column). PM6_S: One proband with presumed de novo occurrence (maternity/paternity not confirmed) for a patient with highly specific phenotype. (internal laboratory contributor SCV000222125.7) PS3_M: Functional studies supportive of a damaging effect on the gene or gene product. Score of this variant = -1.675 (≤ -1.11) on a high throughput phosphatase assay (PMID:29706350). PS4_P: Proband(s) with phenotype specificity score of 1-1.5. (internal laboratory contributor SCV000222125.7) PM2_P: Absent in large sequenced populations (PMID 27535533). PP2: PTEN is defined by the PTEN Expert Panel as a gene that has a low rate of benign missense variation and where missense variants are a common mechanism of disease. PP3: REVEL score > 0.7 (score of this variant = 0.881)

Met criteria codes

PM2_Supporting	i	✓	Absent gnomAD
PS4_Supporting	i	✓	GDx #1: F child extreme macro and autism, peds score = 5, 1 phenotype point. GDx #2: M child macro NOS and DD; mother pos macro 59cm and thy nod CC score 10. Assumed de novo, PS4_P wrapped into PM6_S upweight. GDx #2: male child with extreme macroceph (+5.5SD), delays. Inherited from HET mother with macrocephaly, thyroid nodules. Meets PS4_P, 1 meiosis towards PP1.
PP2	i	✓	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline
PP3	i	✓	Score = 0.881
PS3_Moderate	i	✓	Mighell score hypomorphic Protein abundance score 0.52, "possibly low" range. PubMed:29785012 ↗ Score -1.675 in hypomorphic range. PubMed:29706350 ↗

PM6_Strong



GDx #1 assumed de novo; patient with high phenotype specificity (meets PS4_P), data combined to upweight here.

Not Met criteria codes

PP1



1 meiosis from GDx #2, described in PS4_P

PP4



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PS1



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PS2



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PM1



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PM3



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PM5



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PM4



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

BA1



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

PVS1



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

BP5



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

BP7



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

BP4








No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

BP3



No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

BP1		✘	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline
BP2		✘	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline
BS1		✘	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline
BS4		✘	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline
BS3		✘	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline
BS2		✘	No code specific comments provided, please refer to the summary above or general recommendations provided in the guideline

Curation History [↗](#)

Showing 1 to 2 of 2 rows

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