CTNND2 gene
catenin delta 2

Normal Function

The *CTNND2* gene provides instructions for making a protein called delta-catenin. This protein is active in the nervous system, where it likely helps cells stick together (cell adhesion) and plays a role in cell movement. In the developing brain, it may help guide nerve cells to their proper positions as part of a process known as neuronal migration.

In mature nerve cells, delta-catenin is located in specialized outgrowths called dendrites. Dendrites branch out from the cell and receive information from nearby nerve cells. This information is relayed across synapses, which are junctions between nerve cells where cell-to-cell communication occurs. Delta-catenin appears to play a crucial role in the function of synapses.

Health Conditions Related to Genetic Changes

**Autism spectrum disorder**

**Cri-du-chat syndrome**

The *CTNND2* gene is located in a region of chromosome 5 that is often deleted in people with cri-du-chat syndrome. As a result of this deletion, many people with this condition are missing one copy of the *CTNND2* gene in each cell. The loss of this gene may cause severe intellectual disability in some affected individuals. Researchers suspect that intellectual disability could result from a disruption of neuronal migration during the early development of the nervous system.

People with cri-du-chat syndrome who do not have a deletion of the *CTNND2* gene tend to have milder intellectual disability or normal intelligence.
Chromosomal Location

Cytogenetic Location: 5p15.2, which is the short (p) arm of chromosome 5 at position 15.2

Molecular Location: base pairs 10,971,836 to 11,904,446 on chromosome 5 (Homo sapiens Updated Annotation Release 109.20190607, GRCh38.p13) (NCBI)

Credit: Genome Decoration Page/NCBI

Other Names for This Gene

• catenin (cadherin-associated protein), delta 2
• CTND2_HUMAN
• GT24
• neural plakophilin-related armadillo-repeat protein
• neurojungin
• NPRAP

Additional Information & Resources

Educational Resources

• Neuroscience (second edition, 2001): Neuronal Migration
  https://www.ncbi.nlm.nih.gov/books/NBK10831/

Scientific Articles on PubMed

• PubMed
  https://www.ncbi.nlm.nih.gov/pubmed?term=%28CTNND2%5BTIAB%5D%29+OR+%28%28%28neural+plakophilin-related+armadillo-repeat+protein%29+OR+%28neurojungin%29+OR+%28NPRAP%29+OR+%28%28Genes%5BMH%5D%29+OR+%28Genetic+Phenomena%5BMH%5D%29+OR+human%5Bmh%5D+AND+%22last+3600+days%22%5Bdp%5D
CATENIN, DELTA-2
http://omim.org/entry/604275

Research Resources

- Atlas of Genetics and Cytogenetics in Oncology and Haematology
  http://atlasgeneticsoncology.org/Genes/GC_CTNND2.html
- HGNC Gene Symbol Report
- Monarch Initiative
  https://monarchinitiative.org/gene/NCBIGene:1501
- NCBI Gene
- UniProt
  https://www.uniprot.org/uniprot/Q9UQB3

Sources for This Summary


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Lister Hill National Center for Biomedical Communications
U.S. National Library of Medicine
National Institutes of Health
Department of Health & Human Services