



## 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](#)

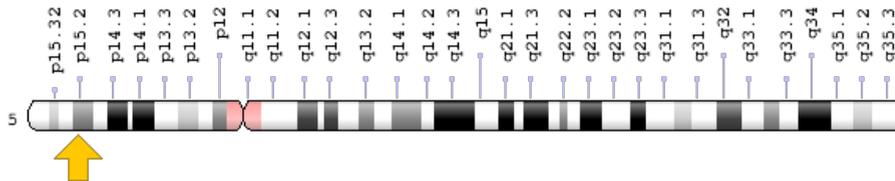
The *CTNND2* gene is located in a region of chromosome 5 that is often deleted in people with cri-du-chat syndrome. As a result of this deletion, many people with this condition are missing one copy of the *CTNND2* gene in each cell. The loss of this gene may cause severe intellectual disability in some 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 10,971,840 to 11,904,067 on chromosome 5 (Homo sapiens Annotation Release 109, GRCh38.p12) (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%28neural+plakophilin-related+armadillo-repeat+protein%5BTIAB%5D%29+OR+%28NPRAP%5BTIAB%5D%29+OR+%28neurojungin%5BTIAB%5D%29+OR+%28delta-catenin%5BTIAB%5D%29%29+AND+%28%28Genes%5BMH%5D%29+OR+%28Genetic+Phenomena%5BMH%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+3600+days%22%5Bdp%5D>

## Catalog of Genes and Diseases from OMIM

- 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](http://atlasgeneticsoncology.org/Genes/GC_CTNND2.html)
- HGNC Gene Symbol Report  
[https://www.genenames.org/data/gene-symbol-report/#!/hgnc\\_id/HGNC:2516](https://www.genenames.org/data/gene-symbol-report/#!/hgnc_id/HGNC:2516)
- Monarch Initiative  
<https://monarchinitiative.org/gene/NCBIGene:1501>
- NCBI Gene  
<https://www.ncbi.nlm.nih.gov/gene/1501>
- UniProt  
<https://www.uniprot.org/uniprot/Q9UQB3>

## **Sources for This Summary**

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*Citation on PubMed:* <https://www.ncbi.nlm.nih.gov/pubmed/15380068>
- Kosik KS, Donahue CP, Israely I, Liu X, Ochiishi T. Delta-catenin at the synaptic-adherens junction. *Trends Cell Biol.* 2005 Mar;15(3):172-8. Review.  
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- Medina M, Marinescu RC, Overhauser J, Kosik KS. Hemizygoty of delta-catenin (CTNND2) is associated with severe mental retardation in cri-du-chat syndrome. *Genomics.* 2000 Jan 15;63(2):157-64.  
*Citation on PubMed:* <https://www.ncbi.nlm.nih.gov/pubmed/10673328>

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