

## NUT (nuclear protein in testis)

### Identity

Other names	<b>DKFZp434O192</b> <b>MGC138683</b>
Hugo	<b><u>NUT</u></b>
Location	15q14 (position 32425358-32437221 on the chromosome 15 genomic sequence).
Note	the gene name NUT has not been approved by the HUGO Gene Nomenclature Committee.

### DNA/RNA

Description	The gene consists of 7 exons that span approximately 12 kb of genomic DNA in the centromere-to-telomere orientation. The translation initiation codon and the stop codon are predicted to exon 1 and exon 7, respectively.
Transcription	The corresponding "wildtype" mRNA transcript is 3.6 kb.

### Protein

Description	The open reading frame is predicted to encode an 1127 amino acid protein with an estimated molecular weight of 120 kDa.
Expression	Northern blot analysis has indicated that the normal expression of the NUT gene is highly restricted to the testis. No investigations have yet been made at the protein level.
Localisation	Nuclear.
Function	Unknown.

### Implicated in

Entity	<a href="#">Carcinoma with t(15;19)(q14;p13) translocation.</a>
Prognosis	Carcinoma with t(15;19) translocation is invariably fatal with a rapid clinical course when located to the midline thoracic, head and neck structures. One tumor, displaying the cytogenetic and molecular cytogenetic features of carcinoma with t(15;19) translocation, but located to the iliac bone has been reported successfully cured. It has been suggested that a critical prognostic difference exists between BRD4-NUT/t(15;19) positive tumors and tumors where NUT is rearranged but fused to an as yet unknown partner.
Cytogenetics	t(15;19)(q14;p13) [reported breakpoints: t(15;19)(q11-15;p13)].
Hybrid/Mutated Gene	The t(15;19)(q14;p13) results in an BRD4-NUT chimeric gene where exon 10 of <a href="#">BRD4</a> is fused to exon 2 of NUT.
Abnormal Protein	The BRD4-NUT fusion is composed of the N-terminal of BRD4 (amino acids 1-720 out of 1372) and almost the entire protein sequence of NUT (amino acids 6-1127). The N-terminal of BRD4 includes bromodomains 1 and 2 and other, less well characterized functional domains.
Oncogenesis	It has been suggested that the oncogenic effect of the NUT-BRD4 fusion is caused not only by the abnormal regulation of NUT by BRD4 promoter elements but also by the consequent ectopic expression of NUT in non-germinal tissues.

### Breakpoints

Note	The vast majority of reported breakpoints in carcinoma with t(15;19) translocation were assigned to band 19p13, the exception being the cytogenetic interpretation of a 19q13 breakpoint reported once. The reported breakpoints on chromosome 15 have varied (15q11-q15).
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## External links

### Nomenclature

[Hugo](#) -  
[GDB](#) [NUT](#)  
[Entrez Gene](#) [NUT\\_256646](#) nuclear protein in testis

### Cards

[Atlas](#) [NUTID41595ch15q14](#)  
[GeneCards](#) [NUT](#)  
[Ensembl](#) [NUT](#)  
[Genatlas](#) [NUT](#)  
[GeneLynx](#) [NUT](#)  
[eGenome](#) [NUT](#)  
[euGene](#) [256646](#)

### Genomic and cartography

[GoldenPath](#) [NUT](#) - [chr15:32425358-32437221 + 15q14](#) (hg18-Mar\_2006)  
[Ensembl](#) [NUT - 15q14 \[CytoView\]](#)  
[NCBI](#) [Mapview](#)  
[OMIM](#) [Disease map \[OMIM\]](#)  
[HomoloGene](#) [NUT](#)

### Gene and transcription

[Genbank](#) [AF482429](#) [ ENTREZ ]  
[Genbank](#) [AK098568](#) [ ENTREZ ]  
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[RefSeq](#) [NW\\_925840](#) [ SRS ] [NW\\_925840](#) [ ENTREZ ]  
[AceView](#) [NUT](#) AceView - NCBI  
[Unigene](#) [Hs.525769](#) [ SRS ] [Hs.525769](#) [ NCBI ] [HS525769](#) [ spliceNest ]

### Protein : pattern, domain, 3D structure

[SwissProt](#) [Q86Y26](#) [ SRS ] [Q86Y26](#) [ EXPASY ] [Q86Y26](#) [ INTERPRO ]  
[CluSTR](#) [Q86Y26](#)  
[Blocks](#) [Q86Y26](#)  
[HPRD](#) [Q86Y26](#)

### Protein Interaction databases

[DIP](#) [Q86Y26](#)  
[IntAct](#) [Q86Y26](#)

### Polymorphism : SNP, mutations, diseases

[OMIM](#) [608963](#) [ map ]  
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[SNP](#) [NUT](#) [dbSNP-NCBI]  
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#### General knowledge

[Family Browser](#) [NUT](#) [UCSC Family Browser]  
[SOURCE](#) [NM\\_175741](#)  
[SMD](#) [Hs.525769](#)  
[SAGE](#) [Hs.525769](#)  
[GO](#) [nucleus](#) [Amigo] [nucleus](#)  
[PubGene](#) [NUT](#)

#### Other databases

#### Probes

[Probe](#) [NUT Related clones \(RZPD - Berlin\)](#)

#### PubMed

[PubMed](#) [3 Pubmed reference\(s\) in LocusLink](#)

#### Bibliography

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Medline [1785673](#)

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Medline [16435379](#)

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