

MSI2 (musashi homolog 2 (drosophila))

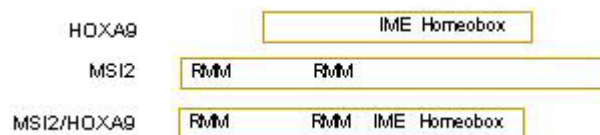
Identity

Other names	MSI2H
	FLJ36569
	MGC3245
Hugo	<u>MSI2</u>
Location	17q23.2

DNA/RNA

Description	The gene spans 424 kb.on plus strand; at least 15 exons.
Transcription	alternate splicing; at least 3 transcripts, of which are transcripts of 1,6 and 2,1 kb.

Protein



Description	328 amino acids, 35 kDa, and 251 amino acidsThe Musashi (Msi) family genes possess 2 ribonucleoprotein (RNP or ribonucleo particle)-type RNA recognition motifs (RRMs) in the N-term; each RRM comprises 2 highly conserved sequences called RNP1 and RNP2. Heterogeneous nuclear ribonucleoparticle (hnRNP) proteins are nuclear proteins implicated in hnRNA (pre-mRNA transcript) processing; Msi2 and Msi1 have similar RNA-binding specificity.
Expression	Ubiquitously expressed in various tissues; expressed predominantly in precursor cells in the ventricular zone and subventricular zone of the central nervous system (CNS); in CNS stem cells during embryogenesis; in the postnatal and adult CNS, the expression of Msi2 and Msi1 disappear in most post mitotic or migrating cells, but is found in cells of the astrocyte lineage; coexpressed with Msi1.
Function	RNA-binding protein. Some RNA-binding proteins are neural-specific. The development of neural cells from precursors may be partly regulated at the post-transcriptional level by mRNA stabilization or translational control in the cytoplasm. Msi2 may have a unique role in CNS stem cells through life.
Homology	MSI1

Mutations

Germinal Defective MSI2 might play a role in certain dementia (although this chromosomal region also contain several loci known to be involved in neurological disorders ([NF1](#) and others).

Somatic see below.

Implicated in

Entity [Chronic myelogenous leukemia](#) (CML) in accelerated phase (AP-CML) with either a [t\(7;17\)\(p15;q23\)](#) and a [HOXA9](#) / MSI2 hybrid gene, or a [t\(7;17\)\(q32-34;q23\)](#) and a ? possible gene of the plexin family/MSI2 hybrid gene.

Hybrid/Mutated Gene 5' MSI2 - 3' HOXA9 in the t(7;17)(p15;q23)

Oncogenesis In the t(7;17)(p15;q23) the fusion protein contains, from N-term to C-term, the 2 RNA recognition motifs of MSI2 and the the IME and the homeobox domain of HOXA9

External links

Nomenclature

[Hugo](#) [MSI2](#)
[GDB](#) [MSI2](#)
[Entrez Gene](#) [MSI2_124540](#) musashi homolog 2 (Drosophila)

Cards

[Atlas](#) [MSI2ID42893ch17q23](#)
[GeneCards](#) [MSI2](#)
[Ensembl](#) [MSI2](#)
[Genatlas](#) [MSI2](#)
[GeneLynx](#) [MSI2](#)
[eGenome](#) [MSI2](#)
[euGene](#) [124540](#)

Genomic and cartography

[GoldenPath](#) [MSI2 - 17q23.2](#) [chr17:52688930-53112298 + 17q23.2](#) (hg17-May_2004)
[Ensembl](#) [MSI2 - 17q23.2 \[CytoView\]](#)
[NCBI](#) [Genes Cyto](#) [Gene Seq](#) [Map View - NCBI]
[OMIM](#) [Disease map \[OMIM\]](#)
[HomoloGene](#) [MSI2](#)

Gene and transcription

[Genbank](#) [AI798817](#) [SRS] [AI798817](#) [ENTREZ]
[Genbank](#) [AK093888](#) [SRS] [AK093888](#) [ENTREZ]
[Genbank](#) [BC001526](#) [SRS] [BC001526](#) [ENTREZ]

[Genbank](#) [BC017560](#) [SRS] [BC017560](#) [ENTREZ]
[Genbank](#) [BE836557](#) [SRS] [BE836557](#) [ENTREZ]
[RefSeq](#) [NM_138962](#) [SRS] [NM_138962](#) [ENTREZ]
[RefSeq](#) [NM_170721](#) [SRS] [NM_170721](#) [ENTREZ]
[RefSeq](#) [NT_086883](#) [SRS] [NT_086883](#) [ENTREZ]
[AceView](#) [MSI2](#) AceView - NCBI
[TRASER](#) [MSI2](#) Traser - Stanford
[Unigene](#) [Hs.134470](#) [SRS] [Hs.134470](#) [NCBI] [HS134470](#) [spliceNest]

Protein : pattern, domain, 3D structure

Polymorphism : SNP, mutations, diseases

[OMIM](#) [607897](#) [[map](#)]

[GENECLINICS](#) [607897](#)

[SNP](#) [MSI2](#) [dbSNP-NCBI]

[SNP](#) [NM_138962](#) [SNP-NCI]

[SNP](#) [NM_170721](#) [SNP-NCI]

[SNP](#) [MSI2](#) [GeneSNPs - Utah] [MSI2](#) [SNP - CSHL] [MSI2](#) [HGBASE - SRS]

General knowledge

[Family Browser](#) [MSI2](#) [UCSC Family Browser]

[SOURCE](#) [NM_138962](#)

[SOURCE](#) [NM_170721](#)

[SMD](#) [Hs.134470](#)

[SAGE](#) [Hs.134470](#)

[Amigo](#) [function|RNA binding](#)

[PubGene](#) [MSI2](#)

Other databases

Probes

[Probe](#) [MSI2 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [5 Pubmed reference\(s\) in LocusLink](#)

Bibliography

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Sakakibara S, Nakamura Y, Satoh H, Okano H.

J Neurosci. 2001; 21: 8091-8107.

Medline [11588182](#)

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Medline [12407178](#)

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Barbouti A, Johansson B, Hoglund M, Mauritzson N, Strombeck B, Nilsson PG, Tanke HJ, Hagemeijer A, Mitelman F, Fioretos T.
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Medline [12203776](#)

A novel gene, MSI2, encoding a putative RNA-binding protein is recurrently rearranged at disease progression of chronic myeloid leukemia and forms a fusion gene with HOXA9 as a result of the cryptic t(7;17)(p15;q23).

Barbouti A, Hoglund M, Johansson B, Lassen C, Nilsson PG, Hagemeijer A, Mitelman F, Fioretos T.
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Comput Biol Chem. 2005; 29: 13-23.
Medline [15680582](#)

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Contributor(s)

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Citation

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