

LAF4 (lymphoid nuclear protein related to AF4)

Identity

Other names **MLL2-related protein, lymphoid nuclear protein 4**
 Hugo **LAF4**
 Location 2q11.2-2q12

DNA/RNA

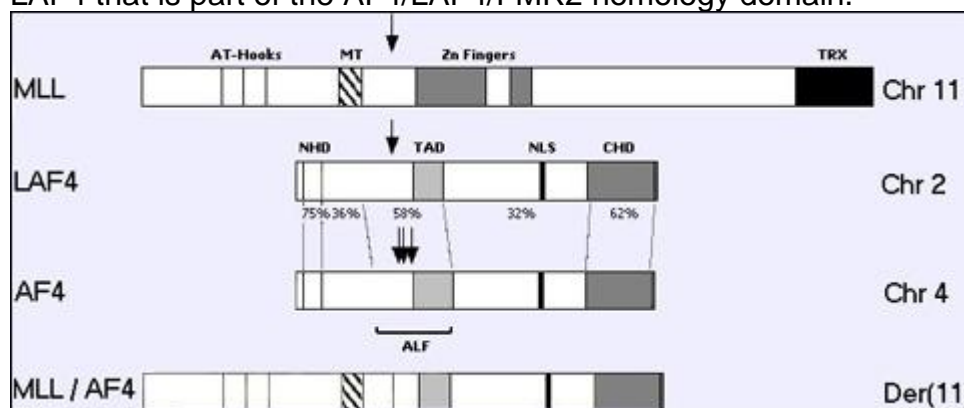
Description at least 17 exons.
 Transcription in a telomere to centromere direction; 3857 bp mRNA; 3684 bp open reading frame.

Protein

Description 1227 amino acids; 133734 Da.
 Expression Preferentially expressed in lymphoid tissues, highest levels being found in the thymus. Lower expression in brain and lung.
 Localisation Nuclear
 Function Putative transcription activator that may function in lymphoid development and oncogenesis. Binds in vitro to double-stranded DNA
 Homology Belongs to the [AF4/LAF4/FMR2/AF5q31](#) family.

Implicated in

Entity t(2;11)(q11;q23) . --> [MLL-LAF4](#)
 Note MLL fusion partner at chromosome 2 in infant ALL
 Disease The three cases reported to date were all infant-ALL with proB phenotype
 Prognosis Prognosis is poor, although based on only three cases.
 Cytogenetics The three reported cases harboured different rearrangements involving chromosomes 2 and 11: t(2;11)(q11;q23), t(2;11)(p15;p14), and ins(11;2)(q23;q11.2q11.2).
 Abnormal Protein The MLL-LAF4 fusion protein includes the transactivation domain of LAF4 that is part of the AF4/LAF4/FMR2 homology domain.



Coding sequence of LAF4 compared to AF4 and site of fusion. Schematic representation of MLL, LAF4, AF4, and the putative MLL-LAF4 fusion protein. Domains in MLL are shaded: MT, DNA methyltransferase homology region; TRX, Drosophila trithorax homology. The percentage of amino acid homology between corresponding regions of LAF4 and AF4 is indicated: NHD, N-terminal homology

domain; ALF, AF4/LAF4/FMR2 homology domain; TAD, transactivation domain; NLS, nuclear localization sequence; CHD, C-terminal homology domain. Arrows indicate the fusion sites with MLL. The breakpoint in LAF4 corresponds to one of the known breakpoints in AF4.

External links

	Nomenclature
Hugo	LAF4
GDB	LAF4
Entrez Gene	LAF4 3899 lymphoid nuclear protein related to AF4
	Cards
Atlas	LAF4ID315
GeneCards	LAF4
Ensembl	LAF4
CancerGene	LAF4
Genatlas	LAF4
GeneLynx	LAF4
eGenome	LAF4
euGene	3899
	Genomic and cartography
GoldenPath	LAF4 - chr2:99626334-100179486 - 2q11.2 (hg17-May_2004)
Ensembl	LAF4 - 2q11.2 [CytoView]
NCBI	Genes Cyto Gene Seq [Map View - NCBI]
OMIM	Disease map [OMIM]
HomoloGene	LAF4
	Gene and transcription
Genbank	AK092327 [SRS] AK092327 [ENTREZ]
Genbank	BC036895 [SRS] BC036895 [ENTREZ]
Genbank	U34360 [SRS] U34360 [ENTREZ]
RefSeq	NM_002285 [SRS] NM_002285 [ENTREZ]
RefSeq	NT_086620 [SRS] NT_086620 [ENTREZ]
AceView	LAF4 AceView - NCBI
TRASER	LAF4 Traser - Stanford
Unigene	Hs.444414 [SRS] Hs.444414 [NCBI] HS444414 [spliceNest]
	Protein : pattern, domain, 3D structure
SwissProt	P51826 [SRS] P51826 [EXPASY] P51826 [INTERPRO]
Interpro	IPR007797 AF-4 [SRS] IPR007797 AF-4 [EBI]
CluSTR	P51826
Pfam	PF05110 AF-4 [SRS] PF05110 AF-4 [Sanger] pfam05110 [NCBI-CDD]
Blocks	P51826
	Polymorphism : SNP, mutations, diseases
OMIM	601464 [map]
GENECLINICS	601464
SNP	LAF4 [dbSNP-NCBI]
SNP	NM_002285 [SNP-NCI]
SNP	LAF4 [GeneSNPs - Utah] LAF4 [SNP - CSHL] LAF4 [HGBASE - SRS]
	General knowledge
Family Browser	LAF4 [UCSC Family Browser]
SOURCE	NM_002285
SMD	Hs.444414
SAGE	Hs.444414

[Amigo](#) [function|DNA binding](#)
[Amigo](#) [process|development](#)
[Amigo](#) [component|nucleus](#)
[Amigo](#) [process|regulation of transcription, DNA-dependent](#)
[PubGene](#) [LAF4](#)

Other databases

Probes

[Probe](#) [LAF4 Related clones \(RZPD - Berlin\)](#)

PubMed

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

Bibliography

LAF-4 encodes a lymphoid nuclear protein with transactivation potential that is homologous to AF-4, the gene fused to MLL in t(4;11) leukemias.

Ma C, Staudt LM.

Blood 1996; 87(2): 734-745.

Medline [8555498](#)

LAF4, an AF4-related gene, is fused to MLL in infant acutelymphoblastic leukemia.

von Bergh ARM, Beverloo HB, Rombout P, van Wering ER, van Weel MH, Beverstock GC, Kluin PM, Slater RM, Schuurin E.

Genes Chromosomes Cancer 2002; 35 (1): 92-96.

Medline [12203795](#)

Occurrence of an MLL/LAF4 fusion gene caused by the insertion ins(11;2)(q23;q11.2q11.2) in an infant with acute lymphoblastic leukemia.

Bruch J, Wilda M, Teigler-Schlegel A, Harbott J, Borkhardt A, Metzler M.

Genes Chromosomes Cancer 2003; 37(1): 106-109.

Medline [22546698](#)

Fusion of an AF4-related gene, LAF4, to MLL in childhood acute lymphoblastic leukemia with t(2;11)(q11;q23).

Hiwatari M, Taki T, Taketani T, Taniwaki M, Sugita K, Okuya M, Eguchi M, Ida K, Hayashi Y.

Oncogene 2003; 22(18): 2851-2855.

Medline [12743608](#)

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Contributor(s)

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URL : <http://www.infobiogen.fr/services/chromcancer/Genes/LAF4ID315.html>

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