

## LASP1 (LIM and SH3 protein)

### Identity

Other names **MLN50, EVI149**

Hugo [LASP1](#)

Location 17q12-21

from centromere to telomere are: [TRAF4](#) (alias MLN62/CART1), [MLLT6](#) (alias AF17), [LASP1](#), [STARD3](#) (alias MLN64), [ERBB2](#) (alias c-erbB2), and [RARA](#)

### DNA/RNA

Description [LASP1](#) encompasses 51.65 kb on the genomic level and consists of 7 exons

Transcription 3845 bp mRNA, 783 bp coding sequence

### Protein

Description 261 amino acids; 29 kDa. [LASP1](#) encodes a member of a LIM (Lin-11, Isl-1 and Mec-3) protein subfamily and is characterized by a LIM motif (cysteine-rich LIM/double zinc finger motif) at the N-terminus, an SH3 domain (Src homology region 3) at the C-terminus, and two actin-binding domains in the core of the protein

Expression ubiquitous

Localisation intracellular, cytoplasmic; associated with the F-actin rich cortical cytoskeleton

Function [LASP1](#) plays an important role in the regulation of dynamic actin-based, cytoskeletal activities and cell motility. Agonist-dependent changes in [LASP1](#) phosphorylation may also serve to regulate actin-associated ion transport activities, not only in the parietal cell but also in certain other F-actin-rich secretory epithelial cell types. Together, (LIM-) nebulin, [Lasp-1](#), and [zyxin](#) may play an important role in the organization of focal adhesions.

Homology [LASP](#) family of proteins: actin-binding repeats similar to those in [LASP1](#) are also present in other nebulin-related proteins such as [NEBL](#) (nebulin, 107 kD actin-binding Z-disk protein) and [NRAP](#) (nebulin-related anchoring protein); [NRAP](#) also contains an N-terminal LIM domain and [NEB](#) (nebulin) a C-terminal SH3 domain, both of which are highly homologous to the respective domains of [LASP1](#).

### Implicated in

Entity t(11;17)(q23;q12) --> [MLL](#)-[LASP1](#)

Disease infant AML-M4; only one case described so far

Abnormal Protein the MLL-LASP1 chimeric protein consists of the AT-hook DNA-binding domain and the methyltransferase motif including the CXXC zinc-finger domain of MLL and the SH3 domain of LASP1

**Entity** [breast carcinomas](#)

Disease 17q11-q21 amplification is found in about 25% of primary breast carcinomas; simultaneous amplification and overexpression of LASP1 and ERBB2

Prognosis poor clinical outcome; increase risk of relapse

## External links

### Nomenclature

[Hugo](#) [LASP1](#)

[GDB](#) [LASP1](#)

[Entrez\\_Gene](#) [LASP1\\_3927](#) LIM and SH3 protein 1

### Cards

[Atlas](#) [Lasp1ID203](#)

[GeneCards](#) [LASP1](#)

[Ensembl](#) [LASP1](#)

[CancerGene](#) [LASP1](#)

[Genatlas](#) [LASP1](#)

[GeneLynx](#) [LASP1](#)

[eGenome](#) [LASP1](#)

[euGene](#) [3927](#)

### Genomic and cartography

[GoldenPath](#) [LASP1](#) - [chr17:34279894-34331541 + 17q12](#) (hg17-May\_2004)

[Ensembl](#) [LASP1 - 17q12 \[CytoView\]](#)

[NCBI](#) [Genes Cyto](#) [Gene Seq](#) [Map View - NCBI]

[OMIM](#) [Disease map \[OMIM\]](#)

[HomoloGene](#) [LASP1](#)

### Gene and transcription

[Genbank](#) [AK095958](#) [SRS] [AK095958](#) [ENTREZ]

[Genbank](#) [BC007367](#) [SRS] [BC007367](#) [ENTREZ]

[Genbank](#) [BC007560](#) [SRS] [BC007560](#) [ENTREZ]

[Genbank](#) [BC012460](#) [SRS] [BC012460](#) [ENTREZ]

[Genbank](#) [X82456](#) [SRS] [X82456](#) [ENTREZ]

[RefSeq](#) [NM\\_006148](#) [SRS] [NM\\_006148](#) [ENTREZ]

<a href="#">RefSeq</a>	<a href="#">NT_086877</a> [SRS] <a href="#">NT_086877</a> [ENTREZ]
<a href="#">AceView</a>	<a href="#">LASP1</a> AceView - NCBI
<a href="#">TRASER</a>	<a href="#">LASP1</a> Traser - Stanford
<a href="#">Unigene</a>	<a href="#">Hs.334851</a> [SRS] <a href="#">Hs.334851</a> [NCBI] <a href="#">HS334851</a> [spliceNest]
<b>Protein : pattern, domain, 3D structure</b>	
<a href="#">SwissProt</a>	<a href="#">Q14847</a> [SRS] <a href="#">Q14847</a> [EXPASY] <a href="#">Q14847</a> [INTERPRO]
<a href="#">Prosite</a>	<a href="#">PS00478 LIM DOMAIN 1</a> [SRS] <a href="#">PS00478 LIM DOMAIN 1</a> [Expasy]
<a href="#">Prosite</a>	<a href="#">PS50023 LIM DOMAIN 2</a> [SRS] <a href="#">PS50023 LIM DOMAIN 2</a> [Expasy]
<a href="#">Prosite</a>	<a href="#">PS50002 SH3</a> [SRS] <a href="#">PS50002 SH3</a> [Expasy]
<a href="#">Interpro</a>	<a href="#">IPR001781 LIM</a> [SRS] <a href="#">IPR001781 LIM</a> [EBI]
<a href="#">Interpro</a>	<a href="#">IPR000900 Nebulin</a> [SRS] <a href="#">IPR000900 Nebulin</a> [EBI]
<a href="#">Interpro</a>	<a href="#">IPR001452 SH3</a> [SRS] <a href="#">IPR001452 SH3</a> [EBI]
<a href="#">CluSTr</a>	<a href="#">Q14847</a>
<a href="#">Pfam</a>	<a href="#">PF00412 LIM</a> [SRS] <a href="#">PF00412 LIM</a> [Sanger] <a href="#">pfam00412</a> [NCBI-CDD]
<a href="#">Pfam</a>	<a href="#">PF00880 Nebulin</a> [SRS] <a href="#">PF00880 Nebulin</a> [Sanger] <a href="#">pfam00880</a> [NCBI-CDD]
<a href="#">Pfam</a>	<a href="#">PF00018 SH3</a> [SRS] <a href="#">PF00018 SH3</a> [Sanger] <a href="#">pfam00018</a> [NCBI-CDD]
<a href="#">Smart</a>	<a href="#">SM00132 LIM</a> [EMBL]
<a href="#">Smart</a>	<a href="#">SM00227 NEBU</a> [EMBL]
<a href="#">Smart</a>	<a href="#">SM00326 SH3</a> [EMBL]
<a href="#">Prodom</a>	<a href="#">PD000094 LIM</a> [INRA-Toulouse]
<a href="#">Prodom</a>	<a href="#">Q14847 LAS1 HUMAN</a> [Domain structure] <a href="#">Q14847 LAS1 HUMAN</a> [sequences sharing at least 1 domain]
<a href="#">Prodom</a>	<a href="#">PD000094</a> [INRA-Toulouse]
<a href="#">Prodom</a>	<a href="#">Q14847 LAS1 HUMAN</a> [Domain structure] <a href="#">Q14847 LAS1 HUMAN</a> [sequences sharing at least 1 domain]
<a href="#">Blocks</a>	<a href="#">Q14847</a>
<b>Polymorphism : SNP, mutations, diseases</b>	
<a href="#">OMIM</a>	<a href="#">602920</a> [ <a href="#">map</a> ]
<a href="#">GENECLINICS</a>	<a href="#">602920</a>
<a href="#">SNP</a>	<a href="#">LASP1</a> [dbSNP-NCBI]
<a href="#">SNP</a>	<a href="#">NM_006148</a> [SNP-NCI]
<a href="#">SNP</a>	<a href="#">LASP1</a> [GeneSNPs - Utah] <a href="#">LASP1</a> [SNP - CSHL] <a href="#">LASP1</a> [HGBASE - SRS]
<b>General knowledge</b>	
<a href="#">Family Browser</a>	<a href="#">LASP1</a> [UCSC Family Browser]
<a href="#">SOURCE</a>	<a href="#">NM_006148</a>
<a href="#">SMD</a>	<a href="#">Hs.334851</a>
<a href="#">SAGE</a>	<a href="#">Hs.334851</a>
<a href="#">Amigo</a>	<a href="#">function SH3 SH2 adaptor protein activity</a>

[Amigo](#) [function|actin binding](#)  
[Amigo](#) [component|cortical actin cytoskeleton](#)  
[Amigo](#) [process|cortical cytoskeleton organization and biogenesis](#)  
[Amigo](#) [component|cytoskeleton](#)  
[Amigo](#) [process|ion transport](#)  
[Amigo](#) [function|ion transporter activity](#)  
[Amigo](#) [function|zinc ion binding](#)  
[PubGene](#) [LASP1](#)

#### Other databases

#### Probes

[Probe](#) [LASP1 Related clones \(RZPD - Berlin\)](#)

#### PubMed

[PubMed](#) [10 Pubmed reference\(s\) in LocusLink](#)

### Bibliography

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Medline [15372503](#)

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**Rio MC** . LASP1 (LIM and SH3 protein). Atlas Genet Cytogenet Oncol Haematol. March 2000 .

URL : <http://www.infobiogen.fr/services/chromcancer/Genes/Lasp1ID203.html>

**Strehl S** . LASP1 (LIM and SH3 protein). Atlas Genet Cytogenet Oncol Haematol. August 2005 .

URL : <http://www.infobiogen.fr/services/chromcancer/Genes/Lasp1ID203.html>

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