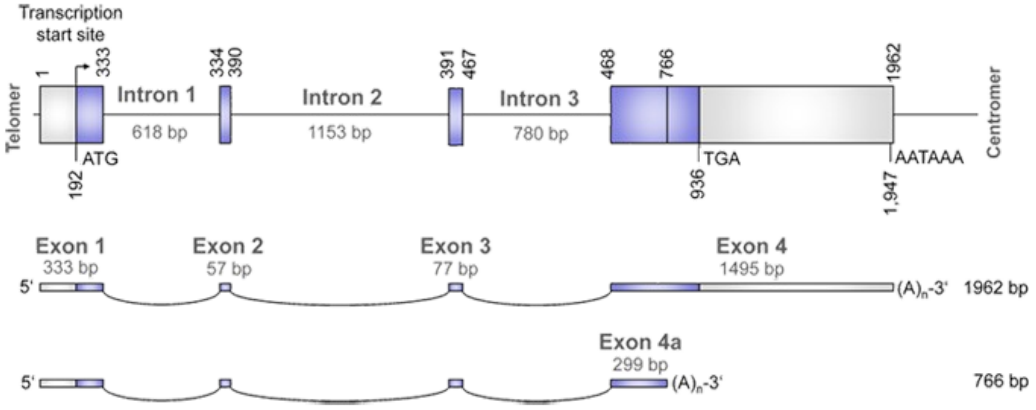
RASL11B (RAS-like, family 11, member B)

Identity

Other names	**MGC2827**
	MGC4499
HGNC (Hugo)	**RASL11B**
Location	4q12
Location_base_pair	Starts at 53423252 and ends at 53427759 bp from pter (according to hg18-Mar_2006) **[Mapping]**
Local_order	Chr4:53,423,252-53,427,759 on the + strand.
Note	Mouse: chr5:74,591,351-74,595,502 (according to Mouse July 2007 Assembly) Rat: chr14:36,392,946-36,397,168 (according to Rat November 2004 Assembly) Zebrafish: chr20:59,670,592-59,673,835 (according to Zebrafish March 2006 Assembly)

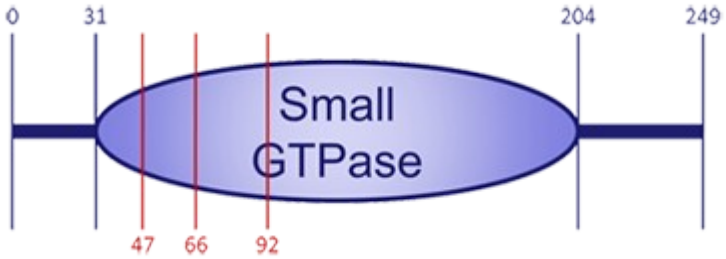
DNA/RNA



Schematic representation of human RASL11B mRNAs and genomic organization of the human RASL11B gene. The human RASL11B gene consists of 4 exons encoding a transcript with a total length of 1962 bp. One shorter variant with a length of 766 bp was found. The ATG start and TGA stop codons are located in exons 1 and 4, respectively.

Description	Gene: 4508 bp Chromosome: 4q12 mRNA: 1979 bp Exon 1: 1-333 Exon 2: 334-390 Exon 3: 391-467 Exon 4: 468-1962 CDS: 192-936 The human RASL11B gene spans about 4508 bp on chromosome 4q12 and comprises 4 exons encoding at least 2 different transcripts. Exons of the RASL11B gene are 333 bp (exon 1), 57 bp (exon 2), 77 bp (exon 3), and 1495 bp (exon 4) in size. Sizes of introns are 618 bp (intron 1), 1153 bp (intron 2), and 780 bp (exon 3). All splice sites have canonical boundaries, starting the intron with 'gt' and ending with 'ag'. A polyadenylation signal in the untranslated region of exon 4 is located at nucleotide position 1947.
Transcription	In addition to the full-length RASL11B transcript, a truncated polyadenylated transcript of 766 bp was reported. Full-length transcript: 1962 bp mRNA, 744 bp open reading frame. Truncated transcript: 766 bp mRNA, 574 bp open reading frame.
Pseudogene	No pseudogenes reported.

Protein



Domains within the human RASL11B protein. Domains positions are indicated with vertical purple lines and intron positions are indicated with vertical red lines both showing the exact position in the polypeptide sequence.

Description	RASL11B is a 248 amino acid protein containing a characteristic RAS GTPase domain with typical topology of a six-stranded beta-sheet surrounded by five alpha-helices. The RASL11B protein has no typical prenylation signal, indicating that it is probably not anchored to cellular membranes.
Expression	Expression of human RASL11B mRNA was investigated in 37 tissues and 5 cell types. In tissues, RASL11B transcript is widely expressed with highest levels in placenta. In cells RASL11B transcript shows highest abundance in primary macrophages.
Localisation	Cytosolic.
Function	Small GTPase belonging to a Ras subfamily of putative tumor suppressor genes.
Homology	The protein sequence of the RASL11 protein family is highly conserved within different species and contains five conserved regions motives that comprise the G-domain of small GTPases (P-loop, switch 1 and 2, G4 and G5 box).

Implicated in

Note

According to Stolle et al., RASL11B expression is induced during maturation of THP-1 monocytic cells into macrophages and in coronary artery smooth muscle cells after treatment with TGF-beta1 suggesting that RASL11B may play a role in developmental processes or in pathophysiologies such as inflammation or cancer.
Pezeron et al. demonstrated that Rasl11b modulates function of the EGF-CFC coreceptor one-eyed-pinhead (oep) in zebrafish independently of the TGFbeta/Nodal pathway, which is crucial for germ layer formation. Down regulation of Rasl11b partially rescued endodermal and prechordal plate defects of zygotic homozygous oep zebrafish mutants. Rasl11b inhibitory action was observed only in animals with oep-deficient backgrounds, suggesting that normal oep expression prevents function of Rasl11b. On the other hand, Rasl11b down regulation did not rescue mesendodermal defects in other Nodal pathway mutants.

External links

	Nomenclature
HGNC (Hugo)	RASL11B 23804
Entrez_Gene (NCBI)	RASL11B 65997 RAS-like, family 11, member B
	Cards
Atlas	**RASL11BID44265ch4q12**
GeneCards (Weizmann)	RASL11B
Ensembl (Hinxton)	ENSG00000128045 [Gene_View] RASL11B [Vega]
AceView (NCBI)	RASL11B
Genatlas (Paris)	RASL11B
euGene (Indiana)	65997
SOURCE (Stanford)	NM_023940
Gene Expression (Array Express)	ENSG00000128045
	Genomic and cartography
GoldenPath (UCSC)	RASL11B - 4q12 chr4:53423252-53427759 + 4q12 [Description] (hg18-Mar_2006)
Ensembl	RASL11B - 4q12 [CytoView]
Mapping of homologs : NCBI	RASL11B [Mapview]

OMIM	612404
	Gene and transcription
Gene : Genbank (Entrez)	AK027267 AK314942 AY839725 AY839726 BC001087
Reference sequence (RefSeq transcript) :SRS	NM_023940
Reference transcript : Entrez	NM_023940
RefSeq genomic : SRS	AC_000047 AC_000136 NC_000004 NT_022853 NW_001838913 NW_922162
RefSeq genomic : Entrez	AC_000047 AC_000136 NC_000004 NT_022853 NW_001838913 NW_922162
Consensus coding sequences : CCDS NCBI	RASL11B
Cluster EST : Unigene	Hs.8035 [SRS] Hs.8035 [NCBI]
Alternative Splicing : Fast-db (Paris)	4272
	Protein : pattern, domain, 3D structure
Protein : UniProt/SwissProt	Q9BPW5 (SRS) Q9BPW5 (Expasy) Q9BPW5 (Uniprot)
With graphics : InterPro	Q9BPW5
Splice isoforms : VarSplice FASTA	Q9BPW5(VarSplice FASTA)
Domaine pattern : Prosite (SRS)	RAS (PS51421)
Domain pattern : Prosite (Expaxy)	RAS (PS51421)
Domains : Interpro (SRS)	Ras Ras_GTPase Ras_small_GTPase Small_GTP_bd
Domains : Interpro (EBI)	Ras Ras_GTPase Ras_small_GTPase Small_GTP_bd
Related proteins : CluSTr	Q9BPW5
Domain families : Pfam SRS	Ras (PF00071)
Domain families : Pfam Sanger	Ras (PF00071)
Domain families : Pfam NCBI	pfam00071
Blocks (Seattle)	Q9BPW5
HPRD	15216
	Protein Interaction databases
DIP (DOE-UCLA)	Q9BPW5
IntAct (EBI)	Q9BPW5
	Polymorphism : SNP, mutations, diseases
Single Nucleotide Polymorphism (SNP) : dbSNP NCBI	RASL11B
SNP : GeneSNP Utah	RASL11B
SNP : HGBase	RASL11B
Genetic variants : HAPMAP	RASL11B
Somatic Mutations in	RASL11B

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Phylogenetic Trees/Animal Genes : TreeFam	RASL11B
Chemical/Protein Interactions : CTD	65997
	Other databases
	Probes
Probes : Imagenes	RASL11B Related clones (RZPD - Berlin)
	Literature
PubMed	**5 Pubmed reference(s) in Entrez**
PubGene	RASL11B

Bibliography

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PLoS One. 2008 Jan 16;3(1):e1434.
PMID 18197245

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