

CARS (cysteinyl-tRNA synthetase)

Identity

Other names **cysteine-tRNA ligase**
cysteinease-translase

Hugo **CARS**

Location 11p15.5
700 kb telomeric to [NUP98](#)

DNA/RNA

Description The gene spans 57 kb; 22 exons; 2,5 kb cDNA

Transcription alternate splicing

Protein

Description 748 amino acids, 85 kDa. Forms homodimers

Localisation cytoplasmic

Implicated in

Entity [Inflammatory myofibroblastic tumors](#) with a complex [t\(2;11\)\(p23;p15\)](#)

Disease rare soft tissue tumour found in children and young adults

Prognosis good prognosis

Hybrid/Mutated Gene 5' CARS - 3' [ALK](#)

Abnormal Protein N-term CARS (606 amino acids) fused to the usual 562 C-term amino acids of ALK

External links

Nomenclature

[Hugo](#) [CARS](#)
[GDB](#) [CARS](#)
[Entrez Gene](#) [CARS 833](#) cysteinyl-tRNA synthetase

Cards

[Atlas](#) [CARSID484](#)
[GeneCards](#) [CARS](#)
[Ensembl](#) [CARS](#)
[Genatlas](#) [CARS](#)
[GeneLynx](#) [CARS](#)
[eGenome](#) [CARS](#)
[euGene](#) [833](#)

Genomic and cartography

[GoldenPath](#) [CARS - 11p15.5 chr11:2978736-3035247 - 11p15.4](#) (hg18-Mar_2006)
[Ensembl](#) [CARS - 11p15.4 \[CytoView\]](#)
[NCBI](#) [Genes Cyto](#) [Gene Seq](#) [Map View - NCBI]
[OMIM](#) [Disease map \[OMIM\]](#)

HomoloGene	CARS
	Gene and transcription
Genbank	AB208814 [ENTREZ]
Genbank	AF288206 [ENTREZ]
Genbank	AF288207 [ENTREZ]
Genbank	AK096313 [ENTREZ]
Genbank	AK125503 [ENTREZ]
RefSeq	NM_001014437 [SRS] NM_001014437 [ENTREZ]
RefSeq	NM_001014438 [SRS] NM_001014438 [ENTREZ]
RefSeq	NM_001751 [SRS] NM_001751 [ENTREZ]
RefSeq	NM_139273 [SRS] NM_139273 [ENTREZ]
AceView	CARS AceView - NCBI
TRASER	CARS Traser - Stanford
Unigene	Hs.274873 [SRS] Hs.274873 [NCBI] HS274873 [spliceNest]
	Protein : pattern, domain, 3D structure
SwissProt	P49589 [SRS] P49589 [EXPASY] P49589 [INTERPRO]
Prosite	PS00178 AA_TRNA_LIGASE_I [SRS] PS00178 AA_TRNA_LIGASE_I [Expasy]
Interpro	IPR002308 Cys_tRNA-synt_1a [SRS] IPR002308 Cys_tRNA-synt_1a [EBI]
Interpro	IPR001412 tRNA-synt_I [SRS] IPR001412 tRNA-synt_I [EBI]
CluSTr	P49589
Pfam	PF01406 tRNA-synt_1e [SRS] PF01406 tRNA-synt_1e [Sanger] pfam01406 [NCBI-CDD]
Blocks	P49589
HPRD	P49589
	Protein Interaction databases
DIP	P49589
IntAct	P49589
	Polymorphism : SNP, mutations, diseases
OMIM	123859 [map]
GENECLINICS	123859
SNP	CARS [dbSNP-NCBI]
SNP	NM_001014437 [SNP-NCI]
SNP	NM_001014438 [SNP-NCI]
SNP	NM_001751 [SNP-NCI]
SNP	NM_139273 [SNP-NCI]
SNP	CARS [GeneSNPs - Utah] CARS [HGBASE - SRS]
HAPMAP	CARS [HAPMAP]
	General knowledge
Family Browser	CARS [UCSC Family Browser]
SOURCE	NM_001014437
SOURCE	NM_001014438
SOURCE	NM_001751
SOURCE	NM_139273
SMD	Hs.274873
SAGE	Hs.274873
Enzyme	6.1.1.16 [Enzyme-SRS] 6.1.1.16 [Brenda-SRS] 6.1.1.16 [KEGG] 6.1.1.16 [WIT]
Amigo	tRNA binding

[Amigo](#) [nucleotide binding](#)
[Amigo](#) [cysteine-tRNA ligase activity](#)
[Amigo](#) [receptor activity](#)
[Amigo](#) [ATP binding](#)
[Amigo](#) [soluble fraction](#)
[Amigo](#) [cytoplasm](#)
[Amigo](#) [protein biosynthesis](#)
[Amigo](#) [cysteinyl-tRNA aminoacylation](#)
[Amigo](#) [zinc ion binding](#)
[Amigo](#) [ligase activity](#)
[Amigo](#) [metal ion binding](#)
[KEGG](#) [Cysteine Metabolism](#)
[KEGG](#) [Aminoacyl-tRNA Biosynthesis](#)
[PubGene](#) [CARS](#)

Other databases

Probes

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

PubMed

[PubMed](#) [13 Pubmed reference\(s\) in LocusLink](#)

Bibliography

Identification of novel fusion partners of ALK, the anaplastic lymphoma kinase, in anaplastic large-cell lymphoma and inflammatory myofibroblastic tumor.

Cools J, Wlodarska I, Somers R, Mentens N, Pedeutour F, Maes B, De Wolf-Peeters C, Pauwels P, Hagemeijer A, Marynen P.

Genes Chromosomes Cancer 2002; 34: 354-362.

Medline [12112524](#)

[REVIEW articles](#) *automatic search in PubMed*

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Contributor(s)

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URL : <http://AtlasGeneticsOncology.org/Genes/CARSID484.html>

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