EIF4A2 (eukaryotic translation initiation factor 4A, isoform 2)

Identity

Other names	**DDX2B**
Hugo	**EIF4A2**
Location	3q28

DNA/RNA

Transcription	1.9 kb mRNA; 1223 bp coding sequence

Protein

Description	407 amino acids; 4.6 kDa; NH2-term, ATP binding site, DEAD box, COOH-term
Expression	wide; also expressed in the embryo
Function	ADP/ATP binding; RNA helicase; binds mRNA to the ribosome: role in initiation of protein synthesis; also -binds single strand DNA
Homology	DEAD box proteins, in particular other EIF4A

Implicated in

Entity	t(3;18)(q27;p11.2) --> EIF4A2/ BCL6
Disease	non-Hodgkin lymphoma
Prognosis	yet unknown (only 1case available)
Hybrid/Mutated Gene	5' EIF4A2 - 3' BCL6; EIF4A2 fuses with the second exon of BCL6
Abnormal Protein	no fusion protein, but promoter exchange
Oncogenesis	BCL6 is a transcription repressor; it is supposed that substitution of the promoter of BCL6 may be responsible for BCL6 deregulation

External links

	Nomenclature
Hugo	EIF4A2
GDB	EIF4A2
Entrez_Gene	EIF4A2_1974 eukaryotic translation initiation factor 4A, isoform 2
	Cards
Atlas	**EIF4A2ID262**

GeneCards	EIF4A2
Ensembl	EIF4A2
Genatlas	EIF4A2
GeneLynx	EIF4A2
eGenome	EIF4A2
euGene	1974
	Genomic and cartography
GoldenPath	EIF4A2 - 3q28 chr3:187984055-187990377 + 3q27.3 (hg18-Mar_2006)
Ensembl	EIF4A2 - 3q27.3 [CytoView]
NCBI	Genes Cyto Gene Seq [Map View - NCBI]
OMIM	Disease map [OMIM]
HomoloGene	EIF4A2
	Gene and transcription
Genbank	AB209021 [ENTREZ]
Genbank	AF208852 [ENTREZ]
Genbank	AK130087 [ENTREZ]
Genbank	AL117412 [ENTREZ]
Genbank	AL137681 [ENTREZ]
RefSeq	NM_001967 [SRS] NM_001967 [ENTREZ]
AceView	EIF4A2 AceView - NCBI
TRASER	EIF4A2 Traser - Stanford
Unigene	Hs.478553 [SRS] Hs.478553 [NCBI] HS478553 [spliceNest]
	Protein : pattern, domain, 3D structure
SwissProt	Q14240 [SRS] Q14240 [EXPASY] Q14240 [INTERPRO]
Prosite	PS00039 DEAD_ATP_HELICASE [SRS] PS00039 DEAD_ATP_HELICASE [Expasy]
Interpro	IPR001410 DEAD [SRS] IPR001410 DEAD [EBI]
Interpro	IPR011545 DEAD/DEAH_N [SRS] IPR011545 DEAD/DEAH_N [EBI]
Interpro	IPR000629 DEAD_box [SRS] IPR000629 DEAD_box [EBI]
Interpro	IPR001650 Helicase_C [SRS] IPR001650 Helicase_C [EBI]
CluSTr	Q14240
Pfam	PF00270 DEAD [SRS] PF00270 DEAD [Sanger] pfam00270 [NCBI-CDD]
Pfam	PF00271 Helicase_C [SRS] PF00271 Helicase_C [Sanger] pfam00271 [NCBI-CDD]
Smart	SM00487 DEXDc [EMBL]
Smart	SM00490 HELICc [EMBL]
Blocks	Q14240

	Protein Interaction databases
DIP	Q14240
IntAct	Q14240
	Polymorphism : SNP, mutations, diseases
OMIM	601102 [map]
GENECLINICS	601102
SNP	EIF4A2 [dbSNP-NCBI]
SNP	NM_001967 [SNP-NCI]
SNP	EIF4A2 [GeneSNPs - Utah] EIF4A2] [HGBASE - SRS] EIF4A2 [SNP - HAPMAP]
	General knowledge
Family Browser	EIF4A2 [UCSC Family Browser]
SOURCE	NM_001967
SMD	Hs.478553
SAGE	Hs.478553
Enzyme	3.6.1.- [Enzyme-SRS] 3.6.1.- [Brenda-SRS] 3.6.1.- [KEGG] 3.6.1.- [WIT]
Amigo	nucleotide binding
Amigo	nucleic acid binding
Amigo	DNA binding
Amigo	RNA binding
Amigo	translation initiation factor activity
Amigo	protein binding
Amigo	ATP binding
Amigo	protein biosynthesis
Amigo	regulation of translational initiation
Amigo	ATP-dependent helicase activity
Amigo	eukaryotic translation initiation factor 4F complex
Amigo	hydrolase activity
BIOCARTA	Regulation of eIF4e and p70 S6 Kinase [Genes]
BIOCARTA	Eukaryotic protein translation [Genes]
PubGene	EIF4A2
	Other databases
	Probes
Probe	EIF4A2 Related clones (RZPD - Berlin)
	PubMed
PubMed	**5 Pubmed reference(s) in LocusLink**

Bibliography

Isolation and mapping of the human EIF4A2 gene homologous to the murine protein synthesis initiation factor 4A-II gene Eif4a2.
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Cytogenet Cell Genet 1995; 71: 385-388.
Medline 96103476

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Lorsch JR, Herschlag D.
Biochemistry 1998; 37: 2194-2206.
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Li Q, Imataka H, Morino S, Rogers GW Jr, Richter-Cook NJ, Merrick WC, Sonenberg N.
Mol Cell Biol 1999; 19: 7336-7346.
Medline 99454990

Identification of heterologous translocation partner genes fused to the BCL6 gene in diffuse large B-cell lymphomas: 5'-RACE and LA - PCR analyses of biopsy samples.
Yoshida S, Kaneita Y, Aoki Y, Seto M, Mori S, Moriyama M.
Oncogene 1999; 18: 7994-7999.
Medline 20105774

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URL : http://AtlasGeneticsOncology.org/Genes/EIF4A2ID262.html

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