

IKZF2 (IKAROS family zinc finger 2)

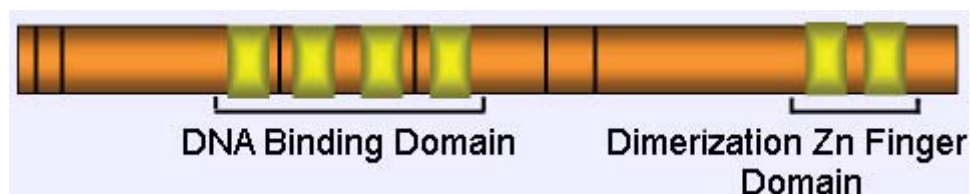
Identity

Other names	Helios ZNFN1A2 Mouse Ikzf2
Hugo	<u>IKZF2</u>
Location	2q34
Note	Belongs to the Ikaros family of zinc finger containing DNA binding proteins.

DNA/RNA

Description	143kb encoding 7 exons.
Transcription	12kb transcript, alternatively spliced to give two predominant isoforms.

Protein



Helios with the zinc finger domain shown as blocks and the exon junctions in black lines.

Note	526 amino acids. Mouse protein migrates at 70kD.
Description	Largest isoform contains four N-terminal zinc fingers used for DNA binding and two C terminal zinc fingers for homodimerization and heterodimerization with other Ikaros family members.
Expression	Largely restricted to the thymus. In mice, besides thymocytes and T cells, low levels are found in proB cells and bone marrow multipotent progenitors.
Localisation	Nuclear. Often localizes to the pericentric heterochromatin as punctate spots in cycling cells, with diffuse nuclear localization in non-cycling cells.
Function	Helios is thought to be important for T cell development and may function as a repressor of transcription. However, Helios mutant mice have not been reported. In mice, Helios can recruit the NuRD chromatin remodeling complex to the pericentric heterochromatin.
Homology	High level of identity to Ikaros over the zinc finger domains.

Implicated in

Entity	Leukemia
Note	Shorter isoforms of Helios are expressed in certain human leukemias. They may function as dominant negative inhibitors of full-length proteins due to the lack of DNA binding domain. However, dominant negative functions have not been demonstrated experimentally.
Disease	T cell acute lymphoblastic leukemia .
Entity	Lymphoma
Note	Overexpression of Helios in B cells of mice promotes lymphomagenesis.

Overexpression of a DNA binding mutant in hematopoietic progenitors leads to aggressive and transplantable [T cell lymphomas](#) in 60% of the mice.

External links

Nomenclature

Hugo	IKZF2
GDB	IKZF2
Entrez_Gene	IKZF2_22807 IKAROS family zinc finger 2 (Helios)

Cards

Atlas	IKZF2ID42885ch2q34
GeneCards	IKZF2
Ensembl	IKZF2
Genatlas	IKZF2
GeneLynx	IKZF2
eGenome	IKZF2
euGene	22807

Genomic and cartography

GoldenPath	IKZF2 - 2q34 chr2:213572658-213724578 - 2q34 (hg18-Mar_2006)
Ensembl	IKZF2 - 2q34 [CytoView]
NCBI	Mapview
OMIM	Disease map [OMIM]
HomoloGene	IKZF2

Gene and transcription

Genbank	AF130863 [ENTREZ]
Genbank	AI458439 [ENTREZ]
Genbank	AY008294 [ENTREZ]
Genbank	AY587062 [ENTREZ]
Genbank	AY587063 [ENTREZ]
RefSeq	NM_001079526 [SRS] NM_001079526 [ENTREZ]
RefSeq	NM_016260 [SRS] NM_016260 [ENTREZ]
RefSeq	AC_000045 [SRS] AC_000045 [ENTREZ]
RefSeq	NC_000002 [SRS] NC_000002 [ENTREZ]
RefSeq	NT_005403 [SRS] NT_005403 [ENTREZ]
RefSeq	NW_921618 [SRS] NW_921618 [ENTREZ]
AceView	IKZF2 AceView - NCBI
Unigene	Hs.604950 [SRS] Hs.604950 [NCBI] HS604950 [spliceNest]

Protein : pattern, domain, 3D structure

SwissProt	Q53QP1 [SRS] Q53QP1 [EXPASY] Q53QP1 [INTERPRO]
Prosite	PS00028 ZINC_FINGER_C2H2_1 [SRS] PS00028 ZINC_FINGER_C2H2_1 [Expasy]
Prosite	PS50157 ZINC_FINGER_C2H2_2 [SRS] PS50157 ZINC_FINGER_C2H2_2 [Expasy]
Interpro	IPR007087 Znf_C2H2 [SRS] IPR007087 Znf_C2H2 [EBI]
CluSTr	Q53QP1
Pfam	PF00096 zf-C2H2 [SRS] PF00096 zf-C2H2 [Sanger] pfam00096 [NCBI-CDD]

[Smart](#) [SM00355 ZnF_C2H2](#) [EMBL]

[Blocks](#) [Q53QP1](#)

[HPRD](#) [05872](#)

Protein Interaction databases

[DIP](#) [Q53QP1](#)

[IntAct](#) [Q53QP1](#)

Polymorphism : SNP, mutations, diseases

[OMIM](#) [606234](#) [[map](#)]

[GENECLINICS](#) [606234](#)

[SNP](#) [IKZF2](#) [dbSNP-NCBI]

[SNP](#) [NM_001079526](#) [SNP-NCI]

[SNP](#) [NM_016260](#) [SNP-NCI]

[SNP](#) [IKZF2](#) [GeneSNPs - Utah] [IKZF2](#) [HGBASE - SRS]

[HAPMAP](#) [IKZF2](#) [HAPMAP]

[COSMIC](#) [IKZF2](#) [Somatic mutation (COSMIC-CGP-Sanger)]

[HGMD](#) [IKZF2](#)

General knowledge

[Family Browser](#) [IKZF2](#) [UCSC Family Browser]

[SOURCE](#) [NM_001079526](#)

[SOURCE](#) [NM_016260](#)

[SMD](#) [Hs.604950](#)

[SAGE](#) [Hs.604950](#)

[GO](#) [molecular_function](#) [Amigo] [molecular_function](#)

[GO](#) [nucleic_acid_binding](#) [Amigo] [nucleic_acid_binding](#)

[GO](#) [DNA_binding](#) [Amigo] [DNA_binding](#)

[GO](#) [intracellular](#) [Amigo] [intracellular](#)

[GO](#) [nucleus](#) [Amigo] [nucleus](#)

[GO](#) [transcription](#) [Amigo] [transcription](#)

[GO](#) [regulation_of_transcription,_DNA-dependent](#) [Amigo] [regulation_of_transcription,_DNA-dependent](#)

[GO](#) [biological_process](#) [Amigo] [biological_process](#)

[GO](#) [zinc_ion_binding](#) [Amigo] [zinc_ion_binding](#)

[GO](#) [metal_ion_binding](#) [Amigo] [metal_ion_binding](#)

[PubGene](#) [IKZF2](#)

Other databases

Probes

[Probe](#) [IKZF2 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [12 Pubmed reference\(s\) in LocusLink](#)

Bibliography

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Blood. 2007; 109(5):2190-2197.
Medline [17110463](#)

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

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[BiblioGene - INIST](#)

Search in all [EBI](#) [NCBI](#)

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