

BIRC3

Identity

Other names

API2

c-IAP2

HIAP1

MIHC

HAIP1

Hugo

BIRC3

Location

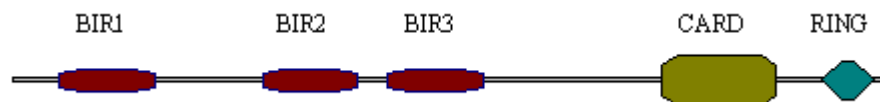
11q21

DNA/RNA

Description centromere to telomere orientation; 10 exons; large 5' untranslated region, start codon in exon 3, stop codon in exon 10.

Transcription 6.5 kb mRNA

Protein



BIRC3 protein - Baens Mathijs, Peter Marynen

Description 68 kDa; 604 amino acids. The protein contains three 'inhibitor of apoptosis' (BIR) repeats, a caspase recruitment domain or CARD and a carboxyterminal 'Zn-binding' RING domain.

Expression wide, most abundantly in kidney, liver, small intestine and lung

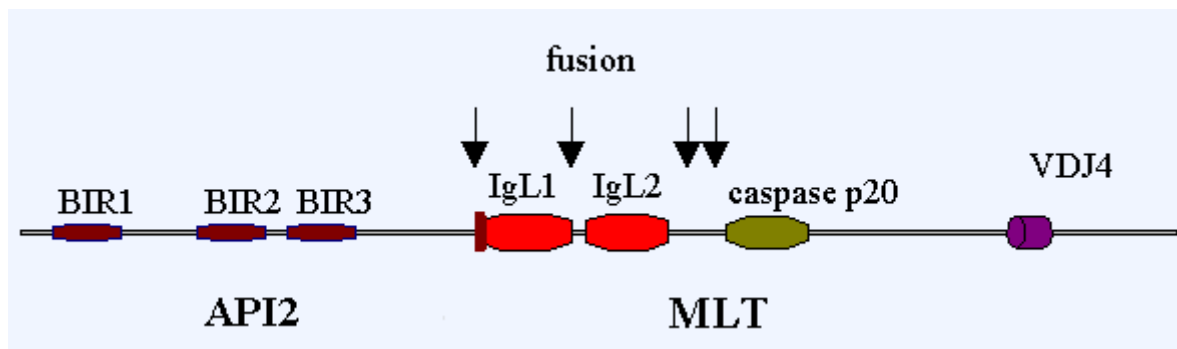
Function Member of the 'inhibitor of apoptosis' (IAP) protein family. Binds to the tumor necrosis factor receptor via its associated factors TRAF1 and TRAF2 and inhibits apoptosis, probably by interfering with activation of caspases.

Homology with Baculovirus IAP proteins, Drosophila DIAP1 and DIAP2

Implicated in

Entity [t\(11;18\)\(q21;q21\)](#) / [marginal zone B-cell lymphoma](#) of MALT-type --> BIRC3 - [MALT1](#)

Disease	B-cell non Hodgkin lymphoma (NHL); marginal zone B-cell lymphoma (MZBCL) of mucosa-associated lymphoid tissue (MALT); found in extranodal MZBCL or MALT-type, absent in splenic and nodal MZBCL
Prognosis	For gastric MALT-type lymphomas, t(11;18) is a clonal marker for resistance to Helicobacter pylori eradication therapy and antigen independent growth
Cytogenetics	t(11;18) is frequently associated with deletions affecting 3' API2 on chromosome 11 or 5' MALT1 on chromosome 18.
Hybrid/Mutated Gene	5' API2 on chromosome 11q21 translocated on chromosome 18 in frame with 3' MALT1. Deletions often exclude the expression of the reciprocal 5' MALT API2 3' transcript.
Abnormal Protein	All MALT-type lymphomas reported with a t(11;18) express an in frame API2-MLT fusion protein with consistently the three BIR domains of API2 fused to the caspase p20 domain and VDJ4-like domain of MLT.



BIRC3/MALT1 fusion protein - Baens Mathijs, Peter Marynen

Oncogenesis	Transient expression of the API2-MLT fusion protein activates an NF-κB luciferase reporter construct, suggesting the involvement of this signaling cascade in MALT lymphomagenesis
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External links

Nomenclature

Hugo	BIRC3
GDB	BIRC3
Entrez_Gene	BIRC3_330 baculoviral IAP repeat-containing 3

Cards

Atlas	BIRC3ID239
GeneCards	BIRC3
Ensembl	BIRC3
CancerGene	API2
GenAtlas	BIRC3
GeneLynx	BIRC3
eGenome	BIRC3
euGene	330

Genomic and cartography

GoldenPath	BIRC3 - 11q21 chr11:101693404-101713674 + 11q22.2 (hg17-May_2004)
Ensembl	BIRC3 - 11q22.2 [CytoView]
NCBI	Genes Cyto Gene Seq [Map View - NCBI]
OMIM	Disease map [OMIM]
HomoloGene	BIRC3

Gene and transcription

Genbank	AF178945 [SRS] AF178945 [ENTREZ]
Genbank	AF070674 [SRS] AF070674 [ENTREZ]
Genbank	AY764389 [SRS] AY764389 [ENTREZ]
Genbank	BC027485 [SRS] BC027485 [ENTREZ]
Genbank	BC037420 [SRS] BC037420 [ENTREZ]
RefSeq	NM_001165 [SRS] NM_001165 [ENTREZ]
RefSeq	NM_182962 [SRS] NM_182962 [ENTREZ]
RefSeq	NT_086787 [SRS] NT_086787 [ENTREZ]
AceView	BIRC3 AceView - NCBI
TRASER	BIRC3 Traser - Stanford
Unigene	Hs.127799 [SRS] Hs.127799 [NCBI] HS127799 [spliceNest]

Protein : pattern, domain, 3D structure

SwissProt	Q13489 [SRS] Q13489 [EXPASY] Q13489 [INTERPRO]
Prosite	PS01282 BIR_REPEAT_1 [SRS] PS01282 BIR_REPEAT_1 [Expasy]
Prosite	PS50143 BIR_REPEAT_2 [SRS] PS50143 BIR_REPEAT_2 [Expasy]
Prosite	PS50209 CARD [SRS] PS50209 CARD [Expasy]
Prosite	PS00518 ZF_RING_1 [SRS] PS00518 ZF_RING_1 [Expasy]
Prosite	PS50089 ZF_RING_2 [SRS] PS50089 ZF_RING_2 [Expasy]
Interpro	IPR001370 BIR [SRS] IPR001370 BIR [EBI]
Interpro	IPR001315 CARD [SRS] IPR001315 CARD [EBI]
Interpro	IPR011029 DEATH_like [SRS] IPR011029 DEATH_like [EBI]
Interpro	IPR001841 Znf_ring [SRS] IPR001841 Znf_ring [EBI]
CluSTr	Q13489
Pfam	PF00653 BIR [SRS] PF00653 BIR [Sanger] pfam00653 [NCBI-CDD]
Pfam	PF00619 CARD [SRS] PF00619 CARD [Sanger] pfam00619 [NCBI-CDD]
Pfam	PF00097 zf-C3HC4 [SRS] PF00097 zf-C3HC4 [Sanger] pfam00097 [NCBI-CDD]
Smart	SM00238 BIR [EMBL]
Smart	SM00114 CARD [EMBL]
Smart	SM00184 RING [EMBL]

[Blocks](#) [Q13489](#)

Polymorphism : SNP, mutations, diseases

[OMIM](#) [601721](#) [[map](#)]

[GENECLINICS](#) [601721](#)

[SNP](#) [BIRC3](#) [dbSNP-NCBI]

[SNP](#) [NM_001165](#) [SNP-NCI]

[SNP](#) [NM_182962](#) [SNP-NCI]

[SNP](#) [BIRC3](#) [GeneSNPs - Utah] [BIRC3](#) [SNP - CSHL] [BIRC3](#) [HGBASE - SRS]

General knowledge

[Family Browser](#) [BIRC3](#) [UCSC Family Browser]

[SOURCE](#) [NM_001165](#)

[SOURCE](#) [NM_182962](#)

[SMD](#) [Hs.127799](#)

[SAGE](#) [Hs.127799](#)

[Amigo](#) [process|anti-apoptosis](#)

[Amigo](#) [process|cell surface receptor linked signal transduction](#)

[Amigo](#) [function|protein binding](#)

[Amigo](#) [function|protein binding](#)

[Amigo](#) [process|protein ubiquitination](#)

[Amigo](#) [process|regulation of apoptosis](#)

[Amigo](#) [component|ubiquitin ligase complex](#)

[Amigo](#) [function|ubiquitin-protein ligase activity](#)

[Amigo](#) [function|zinc ion binding](#)

[BIOCARTA](#) [HIV-I Nef: negative effector of Fas and TNF](#)

[BIOCARTA](#) [Caspase Cascade in Apoptosis](#)

[BIOCARTA](#) [Role of Mitochondria in Apoptotic Signaling](#)

[BIOCARTA](#) [SODD/TNFR1 Signaling Pathway](#)

[PubGene](#) [BIRC3](#)

Other databases

Probes

[Probe](#) [BIRC3 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [27 Pubmed reference\(s\) in LocusLink](#)

Bibliography

The apoptosis inhibitor gene API2 and a novel 18q gene, MLT, are recurrently rearranged in the t(11;18)(q21;q21) associated with mucosa-associated lymphoid tissue lymphomas.

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Medline [10339464](#)

The Product of the t(11;18), an API2-MLT Fusion, Marks Nearly Half of Gastric MALT Type Lymphomas without Large Cell Proliferation.

Baens M , Maes B, Steyls A, Geboes K, Marynen P, Wolf-Peeters C.
Am J Pathol 2000; 156: 1433-1439.
Medline [10751367](#)

The product of the t(11;18), an API2-MLT fusion, is an almost exclusive finding in marginal zone cell lymphoma of extranodal MALT-type.

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Ann Oncol 2000; 11: 521-526.
Medline [10907943](#)

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Dierlamm J, Baens M, Stefanova-Ouzounova M, Hinz K, Wlodarska I, Maes B, Steyls A, Driessen A, Verhoef G, Gaulard P, Hagemeyer A, Hossfeld DK, Wolf-Peeters C, Marynen P.
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Medline [10979968](#)

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Baens M, Steyls A, Dierlamm J, De-Wolf-Peeters C, Marynen P.
Genes Chromosom Cancer 2000; 29: 281-291.
Medline [11066071](#)

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Contributor(s)

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URL : <http://www.infobiogen.fr/services/chromcancer/Genes/BIRC3ID239.html>

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