

ATF1 (activating transcription factor 1)

Identity

Other names **TREB36**

Hugo [ATF1](#)

Location 12q13

DNA/RNA

Transcription 816 bp mRNA

Protein

Description 271 amino acids; possess a basic motif and a leucine-zipper; dimerisation with other ATF family members (e.g. ATF-1 homodimers and ATF-1/CREB heterodimers)

Localisation nuclear

Function DNA binding protein, binds the consensus sequence: 5'GTGACGT(A/C)(A/G)-3'; cAMP-inducible transcription factor (cAMP-responsive enhancer-binding protein (CRE), like CREB

Homology members of the CREB protein family

Implicated in

Entity [malignant melanoma of soft parts](#)

Disease very rare neuroectodermal tumour

Prognosis very poor

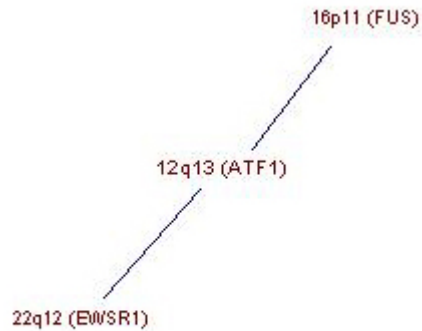
Cytogenetics characterised by the translocation t(12;22)(q13;q12)

Hybrid/Mutated Gene 5' EWSR1- 3' ATF1

Abnormal Protein the chimaeric protein is composed of the N-terminal domain of EWS linked to the bZIP domain of ATF-1

Oncogenesis binds to ATF sites present in cAMP-responsive promoters via the ATF1 bZIP domain and activates transcription constitutively, dependent on the activation domain (EAD) present in EWSR1

Breakpoints



ATF1 and partners. Editor 08/2005.

External links

Nomenclature

Hugo	ATF1
GDB	ATF1
Entrez_Gene	ATF1_466 activating transcription factor 1

Cards

Atlas	ATF1ID81
GeneCards	ATF1
Ensembl	ATF1
CancerGene	ATF1
Genatlas	ATF1
GeneLynx	ATF1
eGenome	ATF1
euGene	466

Genomic and cartography

GoldenPath	ATF1 - 12q13 chr12:49444128-49500327 + 12q13.12 (hg17-May_2004)
Ensembl	ATF1 - 12q13.12 [CytoView]
NCBI	Genes Cyto Gene Seq [Map View - NCBI]
OMIM	Disease map [OMIM]
HomoloGene	ATF1

Gene and transcription

Genbank	X55544 [SRS] X55544 [ENTREZ]
Genbank	BC029619 [SRS] BC029619 [ENTREZ]
Genbank	BG502726 [SRS] BG502726 [ENTREZ]
Genbank	BG545632 [SRS] BG545632 [ENTREZ]
Genbank	BG611151 [SRS] BG611151 [ENTREZ]
RefSeq	NM_005171 [SRS] NM_005171 [ENTREZ]

RefSeq	NT_086794 [SRS] NT_086794 [ENTREZ]
AceView	ATF1 AceView - NCBI
TRASER	ATF1 Traser - Stanford
Unigene	Hs.435267 [SRS] Hs.435267 [NCBI] HS435267 [spliceNest]
Protein : pattern, domain, 3D structure	
SwissProt	P18846 [SRS] P18846 [EXPASY] P18846 [INTERPRO]
Prosite	PS50217 BZIP [SRS] PS50217 BZIP [Expasy]
Prosite	PS00036 BZIP_BASIC [SRS] PS00036 BZIP_BASIC [Expasy]
Prosite	PS50953 KID [SRS] PS50953 KID [Expasy]
Interpro	IPR008917 Euk transcr DNA [SRS] IPR008917 Euk transcr DNA [EBI]
Interpro	IPR001630 Leuzip_CREB [SRS] IPR001630 Leuzip_CREB [EBI]
Interpro	IPR003102 pKID [SRS] IPR003102 pKID [EBI]
Interpro	IPR004827 TF_bZIP [SRS] IPR004827 TF_bZIP [EBI]
CluSTr	P18846
Pfam	PF00170 bZIP [SRS] PF00170 bZIP [Sanger] pfam00170 [NCBI-CDD]
Pfam	PF02173 pKID [SRS] PF02173 pKID [Sanger] pfam02173 [NCBI-CDD]
Smart	SM00338 BRLZ [EMBL]
Blocks	P18846
Polymorphism : SNP, mutations, diseases	
OMIM	123803 [map]
GENECLINICS	123803
SNP	ATF1 [dbSNP-NCBI]
SNP	NM_005171 [SNP-NCI]
SNP	ATF1 [GeneSNPs - Utah] ATF1 [SNP - CSHL] ATF1 [HGBASE - SRS]
General knowledge	
Family Browser	ATF1 [UCSC Family Browser]
SOURCE	NM_005171
SMD	Hs.435267
SAGE	Hs.435267
Amigo	component nucleus
Amigo	function protein binding
Amigo	process regulation of transcription, DNA-dependent
Amigo	function transcription factor activity
BIOCARTA	TNF/Stress Related Signaling
PubGene	ATF1
Other databases	
Probes	

[Probe](#) [Cancer Cytogenetics \(Bari\)](#)
[Probe](#) [ATF1 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [17 Pubmed reference\(s\) in LocusLink](#)

Bibliography

Multiple cDNA clones encoding nuclear proteins that bind to the tax-dependent enhancer of HTLV-1: all contain a leucine zipper structure and basic amino acid domain.

Yoshimura T, Fujisawa J, Yoshida M.

EMBO J 1990; 9: 2537-2542

Medline [2196176](#)

The cAMP-regulated enhancer-binding protein ATF-1 activates transcription in response to cAMP-dependent protein kinase A.

Reh fuss RP, Walton KM, Loriaux MM, Goodman RH

J Biol Chem 1991; 266: 18431-18434

Medline [1655749](#)

EWS and ATF-1 gene fusion induced by t(12;22) translocation in malignant melanoma of soft parts.

Zucman J, Delattre O, Desmaze C, Epstein AL, Stenman G, Speleman F, Fletchers CD, Aurias A, Thomas G

Nat Genet 1993; 4: 341-345.

Medline [8401579](#)

ATF1 and CREB trans-activate a cell cycle regulated histone H4 gene at a distal nuclear matrix associated promoter element.

Guo B, Stein JL, van Wijnen AJ, Stein GS.

Biochemistry 1997; 36: 14447-14455

Medline [9398163](#)

The EWS/ATF1 fusion protein contains a dispersed activation domain that functions directly.

Pan S, Ming KY, Dunn TA, Li KK, Lee KA.

Oncogene 1998; 16: 1625-1631

Medline [9569031](#)

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[BiblioGene - INIST](#)

Contributor(s)

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URL : <http://www.infobiogen.fr/services/chromcancer/Genes/ATF1ID81.html>

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