

WFDC1 (WAP four-disulfide core domain 1)

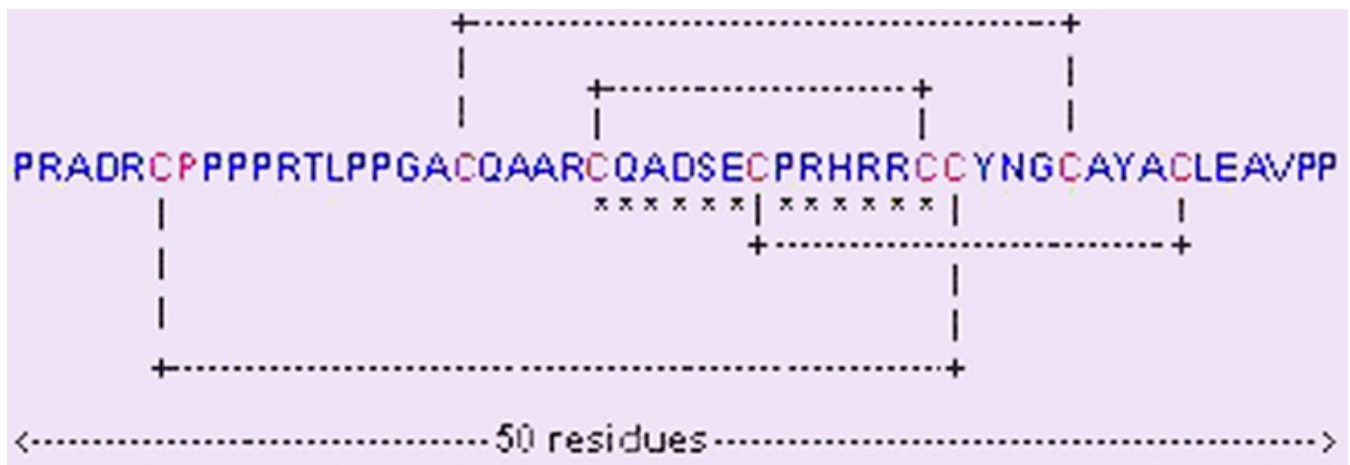
Identity

Other names **ps20**
 Hugo [WFDC1](#)
 Location 16q24.1

DNA/RNA

Description The gene encompasses 35 kb of DNA; 7 exons.
 Transcription 1366 nucleotides mRNA; 660 bp open reading frame.

Protein



Representation of the position of the conserved cysteines for the category of "four-disulfide core" domain and the location of the signature pattern for such a domain in the human WFDC1 amino acid sequence.

Description 220 amino acids; 24 kDa protein. Like rat ps20, human ps20 protein contains a WAP signature domain.

Expression Widely expressed, absent in thymus.

Function The rat homologue of ps20 was originally identified as a secreted growth inhibitor. These growth regulatory effects and the cell phenotypic properties in vitro, suggest that ps20 may function as a mediator of stromal-epithelial interactions and contribute to the maintenance of tissue homeostasis. The ps20 protein is assumed to function as a protease inhibitor. In vitro studies indicate that exogeneous addition of ps20 protein stimulates endothelial cell migration, and promotes angiogenesis and tumour growth in a xenograft model of prostate cancer.

Homology The human WFDC1 protein shares approximately 86% and 88% identity with the rat and mouse proteins, respectively. WFDC1 is related to a family of human proteins that also have homology with WAP. The WFDC1 gene organization presents similarities with that of the KAL gene, which extends on 210 kb of DNA, includes 14 exons and is the largest gene in the WAP signature domain family.

Mutations

Note Although WFDC1 was mapped to human chromosome 16q24, an area of frequent loss of heterozygosity (LOH) in prostate and hepatocellular carcinomas, no tumour-associated mutations were identified in the coding region of WFDC1 in these cancer types. Mutations in WFDC1 gene resulting in Gly9Asp, Pro211Ser and Lys217Arg substitutions have been found at low frequency in the stroma of breast carcinomas. One mutation resulting in a Pro167Ser substitution has been identified in the epithelium of breast carcinoma.

Implicated in

Disease Prostate cancer

Oncogenesis WFDC1 is significantly down-regulated in prostate cancer making it a candidate tumour suppressor gene. However, WFDC1 seems predominantly expressed in the stroma of normal prostate. In tumors, decreased stromal WFDC1 expression has been associated with increased epithelial WFDC1 expression. This correlate with shorter recurrence-free survival times and may indicate progression to a more aggressive epithelial phenotype and an epithelial mesenchymal transition process.

External links

	Nomenclature
Hugo	WFDC1
GDB	WFDC1
Entrez_Gene	WFDC1_58189 WAP four-disulfide core domain 1
	Cards
Atlas	WFDC1ID424
GeneCards	WFDC1
Ensembl	WFDC1
CancerGene	WFDC1
Genatlas	WFDC1
GeneLynx	WFDC1
eGenome	WFDC1
euGene	58189
	Genomic and cartography
GoldenPath	WFDC1 - 16a24.1 chr16:82885902-82920950 + 16a24.1 (ha17-

May_2004)

[Ensembl](#) [WFDC1 - 16q24.1 \[CytoView\]](#)
[NCBI](#) [Genes Cyto](#) [Gene Seq](#) [Map View - NCBI]
[OMIM](#) [Disease map \[OMIM\]](#)
[HomoloGene](#) [WFDC1](#)

Gene and transcription

[Genbank](#) [AF169631](#) [SRS] [AF169631](#) [ENTREZ]
[Genbank](#) [AF302109](#) [SRS] [AF302109](#) [ENTREZ]
[Genbank](#) [AK075061](#) [SRS] [AK075061](#) [ENTREZ]
[Genbank](#) [AL713785](#) [SRS] [AL713785](#) [ENTREZ]
[Genbank](#) [BC029159](#) [SRS] [BC029159](#) [ENTREZ]
[RefSeq](#) [NM_021197](#) [SRS] [NM_021197](#) [ENTREZ]
[RefSeq](#) [NT_086855](#) [SRS] [NT_086855](#) [ENTREZ]
[AceView](#) [WFDC1](#) AceView - NCBI
[TRASER](#) [WFDC1](#) Traser - Stanford
[Unigene](#) [Hs.36688](#) [SRS] [Hs.36688](#) [NCBI] [HS36688](#) [spliceNest]

Protein : pattern, domain, 3D structure

[SwissProt](#) [Q9HC57](#) [SRS] [Q9HC57](#) [EXPASY] [Q9HC57](#) [INTERPRO]
[Prosite](#) [PS00317 4 DISULFIDE CORE](#) [SRS] [PS00317 4 DISULFIDE CORE](#) [Expasy]
[Interpro](#) [IPR008197 WAP](#) [SRS] [IPR008197 WAP](#) [EBI]
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[Blocks](#) [Q9HC57](#)

Polymorphism : SNP, mutations, diseases

[OMIM](#) [605322](#) [map]
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[SNP](#) [WFDC1](#) [dbSNP-NCBI]
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[SNP](#) [WFDC1](#) [GeneSNPs - Utah] [WFDC1](#) [SNP - CSHL] [WFDC1](#) [HGBASE - SRS]

General knowledge

[Family Browser](#) [WFDC1](#) [UCSC Family Browser]
[SOURCE](#) [NM_021197](#)
[SMD](#) [Hs.36688](#)
[SAGE](#) [Hs.36688](#)
[Amigo](#) [component|extracellular space](#)

[Amigo](#) [process|negative regulation of cell growth](#)
[Amigo](#) [function|serine-type endopeptidase inhibitor activity](#)
[PubGene](#) [WFDC1](#)
Other databases
Probes
[Probe](#) [WFDC1 Related clones \(RZPD - Berlin\)](#)
PubMed
[PubMed](#) [4 Pubmed reference\(s\) in LocusLink](#)

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Medline [3567912](#)

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Medline [15305342](#)

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URL : <http://www.infobiogen.fr/services/chromcancer/Genes/WFDC1ID424.html>

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URL : <http://www.infobiogen.fr/services/chromcancer/Genes/WFDC1ID424.html>

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