Coagulation factor VIII

Name	**Coagulation factor VIII**
Synonyms	• AHF • Antihemophilic factor • F8C • Procoagulant component
Gene Name	F8
Organism	Human
Amino acid sequence	>lcl|BSEQ0000032|Coagulation factor VIII MQIELSTCFFLCLLRFCFSATRRYYLGAVELSWDYMQSDLGELPVDARFPPRVPKSFPFN TSVVYKKTLFVEFTDHLFNIAKPRPPWMGLLGPTIQAEVYDTVVITLKNMASHPVSLHAV GVSYWKASEGAEYDDQTSQREKEDDKVFPGGSHTYVWQVLKENGPMASDPLCLTYSYLSH VDLVKDLNSGLIGALLVCREGSLAKEKTQTLHKFILLFAVFDEGKSWHSETKNSLMQDRD AASARAWPKMHTVNGYVNRSLPGLIGCHRKSVYWHVIGMGTTPEVHSIFLEGHTFLVRNH RQASLEISPITFLTAQTLLMDLGQFLLFCHISSHQHDGMEAYVKVDSCPEEPQLRMKNNE EAEDYDDDLTDSEMDVVRFDDDNSPSFIQIRSVAKKHPKTWVHYIAAEEEDWDYAPLVLA PDDRSYKSQYLNNGPQRIGRKYKKVRFMAYTDETFKTREAIQHESGILGPLLYGEVGDTL LIIFKNQASRPYNIYPHGITDVRPLYSRRLPKGVKHLKDFPILPGEIFKYKWTVTVEDGP TKSDPRCLTRYYSSFVNMERDLASGLIGPLLICYKESVDQRGNQIMSDKRNVILFSVFDE NRSWYLTENIQRFLPNPAGVQLEDPEFQASNIMHSINGYVFDSLQLSVCLHEVAYWYILS IGAQTDFLSVFFSGYTFKHKMVYEDTLTLFPFSGETVFMSMENPGLWILGCHNSDFRNRG MTALLKVSSCDKNTGDYYEDSYEDISAYLLSKNNAIEPRSFSQNSRHPSTRQKQFNATTI PENDIEKTDPWFAHRTPMPKIQNVSSSDLLMLLRQSPTPHGLSLSDLQEAKYETFSDDPS PGAIDSNNSLSEMTHFRPQLHHSGDMVFTPESGLQLRLNEKLGTTAATELKKLDFKVSST

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Number of residues	2351
Molecular Weight	267007.42
Theoretical pI	7.37

GO Classification	Functions • oxidoreductase activity • copper ion binding Processes • blood coagulation • COPII vesicle coating • ER to Golgi vesicle-mediated transport • membrane organization • platelet degranulation • platelet activation • post-translational protein modification • protein N-linked glycosylation via asparagine • cellular protein metabolic process • acute-phase response • blood coagulation, intrinsic pathway Components • extracellular region • plasma membrane • extracellular space • endoplasmic reticulum lumen • endoplasmic reticulum-Golgi intermediate compartment membrane • ER to Golgi transport vesicle • Golgi membrane • platelet alpha granule lumen
General Function	Oxidoreductase activity

Specific Function	Factor VIII, along with calcium and phospholipid, acts as a cofactor for factor IXa when it converts factor X to the activated form, factor Xa.
Pfam Domain Function	• Cu-oxidase (PF00394) (http://pfam.sanger.ac.uk/family?acc=PF00394)) • Cu-oxidase_2 (PF07731) (http://pfam.sanger.ac.uk/family?acc=PF07731)) • Cu-oxidase_3 (PF07732) (http://pfam.sanger.ac.uk/family?acc=PF07732)) • F5_F8_type_C (PF00754) (http://pfam.sanger.ac.uk/family?acc=PF00754))
Transmembrane Regions	Not Available
GenBank Protein ID	182818 (http://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?val=182818)
UniProtKB ID	P00451 (http://www.uniprot.org/uniprot/P00451)
UniProtKB Entry Name	FA8_HUMAN (http://www.uniprot.org/uniprot/FA8_HUMAN)
Cellular Location	Secreted
Gene sequence	>lcl|BSEQ0015996|Coagulation factor VIII (F8) ATGCAAATAGAGCTCTCCACCTGCTTCTTTCTGTGCCTTTTGCGATTCTGCTTTAGTGCC ACCAGAAGATACTACCTGGGTGCAGTGGAACTGTCATGGGACTATATGCAAAGTGATCTC GGTGAGCTGCCTGTGGACGCAAGATTTCCTCCTAGAGTGCCAAAATCTTTTCCATTCAAC ACCTCAGTCGTGTACAAAAAGACTCTGTTTGTAGAATTCACGGATCACCTTTTCAACATC GCTAAGCCAAGGCCACCCTGGATGGGTCTGCTAGGTCCTACCATCCAGGCTGAGGTTTAT GATACAGTGGTCATTACACTTAAGAACATGGCTTCCCATCCTGTCAGTCTTCATGCTGTT GGTGTATCCTACTGGAAAGCTTCTGAGGGAGCTGAATATGATGATCAGACCAGTCAAAGG GAGAAAGAAGATGATAAAGTCTTCCCTGGTGGAAGCCATACATATGTCTGGCAGGTCCTG AAAGAGAATGGTCCAATGGCCTCTGACCCACTGTGCCTTACCTACTCATATCTTTCTCAT GTGGACCTGGTAAAAGACTTGAATTCAGGCCTCATTGGAGCCCTACTAGTATGTAGAGAA GGGAGTCTGGCCAAGGAAAAGACACAGACCTTGCACAAATTTATACTACTTTTTGCTGTA TTTGATGAAGGGAAAAGTTGGCACTCAGAAACAAAGAACTCCTTGATGCAGGATAGGGAT GCTGCATCTGCTCGGGCCTGGCCTAAAATGCACACAGTCAATGGTTATGTAAACAGGTCT CTGCCAGGTCTGATTGGATGCCACAGGAAATCAGTCTATTGGCATGTGATTGGAATGGGC ACCACTCCTGAAGTGCACTCAATATTCCTCGAAGGTCACACATTTCTTGTGAGGAACCAT CGCCAGGCGTCCTTGGAAATCTCGCCAATAACTTTCCTTACTGCTCAAACACTCTTGATG GACCTTGGACAGTTTCTACTGTTTTGTCATATCTCTTCCCACCAACATGATGGCATGGAA GCTTATGTCAAAGTAGACAGCTGTCCAGAGGAACCCCAACTACGAATGAAAAATAATGAA GAAGCGGAAGACTATGATGATGATCTTACTGATTCTGAAATGGATGTGGTCAGGTTTGAT GATGACAACTCTCCTTCCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAAAACT

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GenBank Gene ID	M14113 (http://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?val=M14113)
GeneCard ID	Not Available
GenAtlas ID	F8 (http://www.dsi.univ-paris5.fr/genatlas/fiche1.php?symbol=F8)
HGNC ID	HGNC:3546 (http://www.genenames.org/data/hgnc_data.php?hgnc_id=HGNC:3546)
Chromosome Location	X
Locus	Xq28
References	1. Truett MA, Blacher R, Burke RL, Caput D, Chu C, Dina D, Hartog K, Kuo CH, Masiarz FR, Merryweather JP, et al.: Characterization of the polypeptide composition of human factor VIII:C and the nucleotide sequence and expression of the human kidney cDNA. DNA. 1985 Oct;4(5):333-49. 3935400 (http://www.ncbi.nlm.nih.gov/pubmed/3935400) 2. Wood WI, Capon DJ, Simonsen CC, Eaton DL, Gitschier J, Keyt B, Seeburg PH, Smith DH, Hollingshead P, Wion KL, Delwart E, Tuddenham EG, Vehar GA, Lawn RM: Expression of active human factor VIII from recombinant DNA clones. Nature. 1984 Nov 22-28;312(5992):330-7. 6438526 (http://www.ncbi.nlm.nih.gov/pubmed/6438526) 3. Levinson B, Kenwrick S, Gamel P, Fisher K, Gitschier J: Evidence for a third transcript from the human factor VIII gene. Genomics. 1992 Nov;14(3):585-9. 1427887 (http://www.ncbi.nlm.nih.gov/pubmed/1427887)

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Drugs

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DB00055 (/drugs/DB00055)	**Drotrecogin alfa**	approved, investigational, withdrawn	yes	**multitarget**	Details (/drugs/DB00055#bond-43)
DB00100 (/drugs/DB00100)	**Coagulation Factor IX (Recombinant)**	approved	yes	**cofactor**	Details (/drugs/DB00100#bond-8781)
DB13152 (/drugs/DB13152)	**Coagulation Factor IX Human**	approved	yes	**cofactor**	Details (/drugs/DB13152#bond-28665)
DB09130 (/drugs/DB09130)	**Copper**	approved	no	**binder**	Details (/drugs/DB09130#bond-28723)

DB13151 (/drugs/DB13151)	**Anti-inhibitor coagulant complex**	approved	yes	**agonist**	Details (/drugs/DB13151#bond-28857)
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