

Fibronectin Protein, Human, Recombinant (aa 607-1265, His)

General Information

Synonyms:	GFND;LETS;ED-B;fibronectin 1;CIG;GFND2;FNZ;FINC;FN;MSF
Protein Construction:	A DNA sequence encoding the Fragment 2 (Ser607-Pro1265) of human Fibronectin (NP_997647.1) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Ser 607
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P02751-15
Molecular Weight:	73.2 kDa (predicted); 94.1 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by the ability of the immobilized protein to support the adhesion of NIH-3T3 mouse embryonic fibroblast cells. When cells are added to Fibronectin coated plates (2.5 µg/mL and 100 µL/well), approximately 35%-60% cells will adhere specifically after 35 minutes at 37°C.
Purity:	≥ 97 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Fibronectin (FN) is a glycoprotein component of the extracellular matrix of the extracellular matrix (ECM) with roles in embryogenesis, development, and wound healing. More recently, FN has emerged as player in platelet thrombus formation and diseases associated with thrombosis including vascular remodeling, atherosclerosis, and

cardiac repair following a myocardial infarct. Each monomer of FN consists of three types of homologous repeating units, that is 12 type I repeats, two type II repeats and 15-17 type III repeats. The occurrence of multiple isoforms results from alternative mRNA splicing of the ED-A, ED-B and III-CS regions, and subsequent post-translational modification. As an ECM component and one of the primary cell adhesion molecules, Fibronectin can be a ligand for fibrin, heparin, chondroitin sulfate, collagen/gelatin, as well as many integrin receptors through which FN mediates the variety of cellular signaling pathways. The study of solid human tumors showed among the early signs of malignant transformation the fragmentation of pericellular FN, concomitant with the increase of its production by the peritumoral stroma. These results should encourage further investigations concerning the potential importance of Fn production and breakdown during cancer progression. FN1 expression has been described to increase significantly from the morula towards the early blastocyst stage, suggesting that FN1 may also be involved in early blastocyst formation. The fragment 2 of FN comprises the first 7 FN type III repeats and is suggested to be important for self association during fibril growth via the key module III2.

Reference

Labat-Robert J. (2002) Fibronectin in malignancy. *Semin Cancer Biol.* 12(3): 187-95.

Goossens K, et al. (2009) Quantification of fibronectin 1 (FN1) splice variants, including two novel ones, and analysis of integrins as candidate FN1 receptors in bovine preimplantation embryos. *BMC Dev Biol.* 9: 1.

Maurer LM, et al. (2010) Emerging roles of fibronectin in thrombosis. *Thromb Res.* 125(4): 287-91.

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