Recombinant Human Fibronectin Fragment 4

Catalog Number: 3624-FN

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Val1913-Glu2477, with a C-terminal 6-His tag Accession # NP_997647
N-terminal Sequence Analysis	Val1913
Predicted Molecular Mass	63.5 kDa

SPECIFICATIONS

SDS-PAGE	70-95 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of B16-F1 mouse melanoma cells. When 5 x 10^4 cells/well are added to rhFN1.4 coated plates (3 µg/mL and 100 µL/well), approximately 60-80% will adhere after 30 minutes at 37° C.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Fibronectin (FN) is a large modular glycoprotein that is found in a polymeric fibrillar network in the extracellular matrix (ECM). It also forms a soluble disulfide-linked dimeric protomers in plasma and other body fluids (1,2). The protein subunit is made up of three types of homologous structural motifs termed FN type I, type II, and type III repeats (3-5). Alternative splicing generates multiple isoforms of fibronectin which may have insertions of extra type III domains (EDA and EDB) or alteration of the type III connecting segment (IIICS) (5). Fibronectin is a ligand for fibrin, heparin, chondroitin sulfate, collagen/gelatin, and integrins. It is involved in multiple cellular processes including cell adhesion/migration, blood clotting, morphogenesis, tissue repair, and cell signaling. Fibronectin functions are mediated by the insoluble polymeric fibrils in the ECM. Conversion of soluble fibronectin to fibronectin fibrils in the ECM is initiated by binding to cell surface integrins, resulting in exposure of cryptic epitopes necessary for polymerization (1). FN1.4 contains one type III domain, the IIICS domain, three type I domains, and the site of interchain disulfide linkage. Within FN1.4, human fibronectin shares 91% and 88% aa sequence identity with mouse and rat fibronectin, respectively. FN1.4 contains regions that enable association with heparin and fibrin. The IIICS domain contains two sites (CS1 and CS2) that interact with integrin α4β1 (6-8). The CS1 sequence is not accessible in full length fibronectin but is exposed by protease digestion, thereby enabling cell adhesion *via* integrin α4β1 (9). This is distinct from integrin α5β1-mediated adhesion through an RGD motif located N-terminal to FN1.4 (10). Differential splicing within the IIICS domain determines the presence of CS1 and CS2 sequences and the sensitivity to proteases (6,11).

References:

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