Recombinant Human PDGF-DD

Catalog Number: 1159-SB/CF

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Ser250-Arg370 Accession # Q9GZP0.1
N-terminal Sequence Analysis	Ser250
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	14 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	19 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. Raines, E.W. *et al.* (1985) Methods Enzymol. **109**:749. The ED_{50} for this effect is 15-75 ng/mL in a fluorometric assay using the redox sensitive dye, Resazurin (Catalog # AR002) and 2-5 ng/mL when measured by ^{3}H-thymidine incorporation.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 4 mM HCl.
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

The platelet-derived growth factor (PDGF) family consists of four disulfide-linked homodimers and one heterodimer (PDGF-AB). These proteins regulate diverse cellular functions through interactions with PDGF Rα and Rβ (1, 2). Mature PDGF-DD associates with PDGF Rβ and triggers signaling through PDGF Rβ homodimers and PDGF Rα/β heterodimers (3 - 5). The human PDGF-DD cDNA encodes a 370 amino acid (aa) precursor that includes a 23 aa signal sequence, one CUB domain, and one PDGF/VEGF domain (3, 4). The PDGF/VEGF domain shares 27 - 35% aa sequence identity with the corresponding regions of other PDGF family members. Human PDGF-DD shares 87% aa sequence identity with mouse and rat PDGF-DD. PDGF-DD is secreted as a100 kDa latent homodimer which is activated by proteolysis to release a 35 kDa bioactive protein containing the PDGF/VEGF homology domain (3 ,4 ,6 ,7). A splice variant of PDGF-DD has a 6 aa deletion near the N-terminus. A 72 aa deletion within the PDGF/VEGF domain generates an inactive protein in mouse but has not been detected in human (8). PDGF-DD is widely expressed in embryonic and adult tissues (3, 9, 10), and PDGF Rβ is expressed in a generally complementary pattern (9, 11, 12). PDGF-DD functions as a growth factor for renal artery smooth muscle cells and lens epithelial cells, and as a macrophage chemoattractant (5, 9 - 11). PDGF-DD is overexpressed in and contributes to several disease states, including renal and hepatic fibrosis, mesangial proliferative glomerulopathy, pulmonary lymphoid infiltration, and many cancers (6, 11 - 15). PDGF-DD functions in both paracrine and autocrine manners (6, 7, 14).

References:

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