Recombinant Mouse PDGF-AB

Catalog Number: 10839-AB

DESCRIPTION

Source	*E. coli*-derived mouse PDGF-AB protein

Mouse PDGF-A
(Ser87-Thr211)
Accession # P20033.2

Mouse PDGF-B
(Ser82-Thr190)
Accession # P31240.1

N-terminus C-terminus

N-terminal Sequence Analysis	Ser87 (A chain) & Ser82 (B chain)
Structure / Form	Disulfide-linked heterodimer
Predicted Molecular Mass	14 kDa (A chain) & 12 kDa (β chain)

SPECIFICATIONS

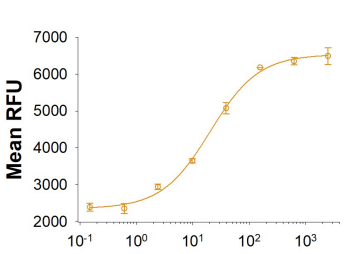
SDS-PAGE	17.5 kDa (A chain) & 12.5 kDa (B chain), under reducing conditions.
Activity	Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. Raines, E.W. *et al*. (1985) Methods Enzymol. **109**:749. The ED_{50} for this effect is 15.0-75.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 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.

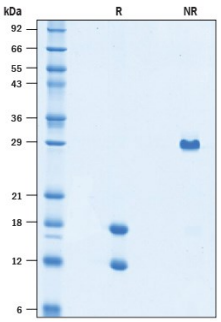
DATA

Bioactivity



Recombinant Mouse PDGF-AB Protein Bioactivity. Recombinant Mouse PDGF-AB induces NR6R-3T3 mouse fibroblast cell proliferation. The ED_{50} for this effect is 15.0-75.0 ng/mL.

SDS-PAGE



Recombinant Mouse PDGF-AB Protein SDS-PAGE. 2 µg/lane of Recombinant Mouse PDGF-AB (Catalog # 10839-AB) was resolved by SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 17.5 kDa (A chain) & 12.5 kDa (B chain) and 29 kDa (heterodimer), respectively.

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BACKGROUND

Platelet-Derived Growth Factors (PDGFs) are a family of four cystine-knot-type growth factors (PDGF-A, -B, -C and -D) which control the growth of connective tissue cells such as fibroblasts and smooth muscle cells (1, 2). They comprise of four homodimers (PDGF-AA, PDGF-BB, PDGF-CC and PDGF-DD) and one heterodimer (PDGF-AB). All four PDGF genes contain a signal sequence, a propeptide and a mature form (2, 3). Mature mouse PDGFA is 95% and 98% identical to human and rat PDGFA respectively whereas mature mouse PDGFB is 89% and 98% homologous to human and rat PDGFB respectively. In general, PDGFs are expressed by a number of different cells and tissues including endothelial cells, epithelial cells, hematopoietic cells, connective tissue, nervous tissue, brain, muscle, kidney and liver. PDGF expression is highly regulated with PDGF levels increasing following injury and/or disease. An analysis of PDGF purified from human platelets suggest that approximately 70% of sera-derived PDGF is PDGF-AB (4). PDGF isoforms exert their cellular effect by binding to the structurally similar receptor tyrosine kinases PDGF receptor-alpha and PDGF receptor-beta. PDGF-AB binding induces receptor dimerization resulting in alpha alpha receptor homodimers and alpha beta receptor heterodimers. Binding of PDGF receptors has been reported to result in stimulation of mitogenicity and chemotaxis of fibroblasts, stimulation of granule release by neutrophils and monocytes, facilitation of steroid synthesis by Leydig cells, stimulation of neutrophil phagocytosis, stimulation of collagen, fibronectin, proteoglycan, and hyaluronic acid synthesis, modulation of thrombospondin expression and secretion, stimulation of collagenase activity and secretion, induction of contraction of rat aorta strips *in vitro*, and transient induction of T cell IL-2 secretion accompanied by a down-regulation of IL-4 and IFN-gamma production (5).

References:

1. Kohler, N. Lipton, A. (1974) Exp Cell Res. **87**:297.
2. Ross, R. *et al.* (1974) Proc Natl Acad Sci U.S.A. **71**:1207.
3. Fredriksson, L. *et al.* (2004) Cytokine Growth Factor Rev. **15**:197.
4. Chen, P-H. *et al.* (2013) BiochimBiophysActa **1834**:2176.
5. Heldin, C-H. Eriksson, U. and Ostman, A. (2002) Arch. Biochem. Biophysic. **398**:284.

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