

Background

Platelet-derived growth factor subunit A is a protein that in humans is encoded by the *PDGFA* gene (1,2). The protein is a member of the platelet-derived growth factor family. The four members of this family are mitogenic factors for cells of mesenchymal origin and are characterized by a motif of eight cysteines. This gene product can exist either as a homodimer (PDGF-AA) or as a heterodimer with the platelet-derived growth factor alpha polypeptide (PDGF-AB), where the dimers are connected by disulfide bonds. Mutations in this gene are associated with meningioma. Reciprocal translocations between chromosomes 22 and 17, at sites where this gene and that for COL1A1 are located, are associated with a particular type of skin tumor called dermatofibrosarcoma protuberans resulting from unregulated expression of growth factor. Two splice variants have been identified for this gene.

Though it is synthesized, stored and released by platelets upon activation, it is produced by a plethora of cells including smooth muscle cells, activated macrophages, and endothelial cells. PDGFs are mitogenic during early developmental stages, driving the proliferation of undifferentiated mesenchyme and some progenitor populations. During later maturation stages, PDGF signalling has been implicated in tissue remodelling and cellular differentiation, and in inductive events involved in patterning and morphogenesis. In addition to driving mesenchymal proliferation, PDGFs have been shown to direct the migration, differentiation and function of a variety of specialised mesenchymal and migratory cell types, both during development and in the adult animal (3).

Reference

1. Ratner L, et al. (Sep 1985). *Nucleic Acids Res* **13** (14): 5007–18.
2. Clements JM, et al. (Jan 1992). *EMBO J* **10** (13): 4113–20.
3. Hoch RV, Soriano P (2003). *Development* **130** (20): 4769–4784.

Related products

1. GR239031 96-well microplate sealer plastic, pack of 100
2. GR238016 50 ml Reagent Reservoir, 100/case, 5 packs/case (pack of 20)
3. GR238004 Tissue Culture 96-well Microplate, individually packed, Case of 50
4. GR238002 Microplate 12x8-Well Strip High Binding, Case of 50
5. GR238003 Microplate 12x8-Well Strip Medium Binding, Case of 50
6. GR238032 42592 Costar Stripwell Microplate 1 x 8 Flat Bottom, High Binding, Case of 100
7. GR238001 468667 Thermo Microplate 12x8-Well Strip Nunc Maxisorp F8, Case of 60
8. GR238019 1.5 ml Microcentrifuge tube with screw cap and free-standing, pack of 500



Recombinant Mouse PDGF-AA Protein DataSheet

Catalog Number: GR104243

Description

Source: E. coli derived

Component: Ser62 –Arg196

Accession # P20033

N-terminal Sequence Analysis: Ser62

Structure/Form: Disulfide-linked homodimer

Predicted Molecular Mass: 15 kDa (monomer)

Specifications

SDS-PAGE: 15 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 ED50 for this effect is typically 50-200ng/mL in a fluorometric assay using the redox sensitive dye. Resazurin (Cat. AR002).

Endotoxin Level: <1.0 EU per 1 µg of the protein by the LAL method.

Purity: >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation: Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA with BSA as a carrier protein.

Preparation and Storage

Reconstitution: Reconstitute at 50 µg/mL in sterile PBS.

Shipping: The product is shipped at ambient temperature or with wet ice. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage: Use a manual defrost freezer and avoid repeated freeze thaw cycles.

- 6 months from date of receipt, -20 to -70°C as supplied.
- 2 months, -20 to -70°C under sterile conditions after reconstitution.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.