



## Recombinant Canine PDGFA Protein DataSheet

Catalog Number: GR104205

### Background

Platelet-derived growth factor subunit A is a protein that is encoded by the *PDGFA* gene (1,2). It is crucial for cell proliferation, chemotaxis, and survival, primarily acting on cells of mesenchymal origin. It also regulates branching during organ development. Elevated PDGFA expression is linked to tumor angiogenesis, oncogenesis, and poor prognosis in cancers like pancreatic cancer, esophageal squamous cell carcinoma (ESCC), and glioma. It is also identified as a direct target of the SOX11 transcription factor in mantle cell lymphoma (MCL). Studies using knockout mice have shown cellular defects in oligodendrocytes, alveolar smooth muscle cells, and Leydig cells in the testis; knockout mice die either as embryos or shortly after birth. 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. This gene product can exist either as a homodimer (PDGF-AA) or as a heterodimer with the platelet-derived growth factor beta polypeptide (PDGF-AB), where the dimers are connected by disulfide bonds. Mutations in this gene are associated with meningioma. 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 signaling has been implicated in tissue remodeling 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 specialized 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.



**Recombinant Canine PDGFA Protein DataSheet**  
Catalog Number: GR104205

**Description**

**Source:** E. coli derived  
**Compositions:** Ser62 –Arg196  
**Accession #** NP\_001177101  
**N-terminal Sequence Analysis:** Ser62  
**Structure/Form:** Disulfide-linked homodimer  
**Predicted Molecular Mass:** 15 kDa (monomer)

**Specifications**

**SDS-PAGE:** 30 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 20 µg/ml in sterile PBS with 0.1% BSA.  
**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.

**FOR LABORATORY RESEARCH USE ONLY**  
**NOT FOR USE IN HUMANS AND ANIMALS**