



Product Information

PLATELET DERIVED GROWTH FACTOR - AB (PDGF-AB) HUMAN, RECOMBINANT Expressed in *E. Coli*

Product No. **P 6684**

Product Description

Platelet Derived Growth Factor (PDGF) is the principal mitogen present in serum for cells of mesenchymal origin.¹ PDGF from human platelets exists as a mixture of four glycoproteins of 27 - 31 kD with pI's of 9.5 - 10.4.^{2,3} Each PDGF molecule is comprised of two covalently linked subunits designated as chains A (16 kD) and B (14 kD). In platelets, approximately 70% of the PDGF is present as the AB dimer with most of the remainder as the BB dimer.⁴ A and B chains are 40% homologous in amino acid sequence and each chain contains 8 cysteine residues, which are involved in disulfide bonds.⁵ Cellular actions of PDGF also include chemoattraction and activation of neutrophils, monocytes and fibroblasts.^{3,6} PDGF appears to play a crucial role in the cellular response to tissue injury⁷ and is critically involved in the pathological progression of atherosclerosis.⁸ Abnormal cellular expression of PDGF is associated with certain malignant transformations.^{9,10} Natural human PDGF activates two distinct receptors, designated α (which binds to either the A or B chain) and β (which binds only to the B chain).¹¹ Binding of either PDGF receptor to its ligand induces receptor autophosphorylation at a tyrosine residue, which then becomes detectable by immunoreaction to Mouse Monoclonal Anti-Phosphotyrosine (Sigma Product No. P 3300). Recombinant human PDGF-AB is the heterodimer of the A and B chains of human PDGF expressed in *E. coli* and linked by glutathione-facilitated dimerization. PDGF-AB contains the A chain (110 amino acids) which is identical to that of human natural PDGF, and the B chain (102 amino acids) which is identical to that of human natural PDGF except for a 12 amino acid deletion at the N-terminus.

Performance Characteristics

The biological activity of recombinant human PDGF-AB was tested in culture using Swiss 3T3 fibroblasts exposed to various PDGF-AB concentrations overnight and then incubated with MTT. The EC₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Product Information

Expressed in *E. coli*
Molecular Weight: 29 kD
Purity: >95% by SDS-PAGE
EC₅₀: 20 - 200 ng/ml
Package Size: 10 μ g
Volume/Vial: 0.2 ml
Formulation: 20 mM sodium acetate, pH 5.1, containing 0.3 M sodium chloride
Sterility: Corresponds to Ph. Eur./USP guidelines
Endotoxin: <1.0 EU/ml

Dilution and Use

Dilute the contents of the vial using a solution containing 0.1-1.0% BSA or 1-10% serum in buffered saline or tissue culture medium. Immediately prior to use, dilute the PDGF-AB to the final working concentration. If aseptic technique is used, additional filtration should not be necessary and should be avoided due to possible adsorption onto the filter membrane.

Storage

Store unopened vial at -20°C . After use, the remainder of the product may be stored as aliquots at -20°C . Because of its extreme hydrophobicity, reconstituted PDGF-AB should not be stored in a glass container. Prolonged storage and repeated freezing and thawing is **not** recommended.

References

1. Ross, R., et al., Proc. Natl. Acad. Sci. USA, **71**, 1207 (1974).
2. Raines, E., and Ross, R., J. Biol. Chem., **257**, 5154 (1982).
3. Heldin, C-H., et al., Mol. Cell. Endocrinol., **39**, 169 (1985).
4. Ross, R., Lancet, **27**, 1179 (1989).
5. Giese, N., et al., Science, **236**, 1315 (1987).

6. Ross, R., et al., Cell, **46**, 155 (1986).
7. Pierce, G., et al., J. Cell Biol., **109**, 429 (1989).
8. Ross, R., et al., Science, **248**, 1009 (1990).
9. Betsholtz, C., et al., Nature, **320**, 695 (1986).
10. Waterfield, M., et al., Nature, **304**, 35 (1983).
11. Hart, C., et al., Science, **240**, 1529 (1988).

12/97

Sigma brand products are sold through Sigma-Aldrich, Inc.
Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications.
Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply.
Please see reverse side of the invoice or packing slip.