PLATELET DERIVED GROWTH FACTOR β-RECEPTOR FRAGMENT 771-778 [pTyr^{771}]

ProductInformation

Product Number **P 5490**

Product Description

Platelet Derived Growth Factor β-Receptor Fragment 771-778 [pTyr^{771}] has the amino acid sequence pTyr-Met-Ala-Pro-Tyr-Asp-Asn-Tyr corresponding to amino acids 771 through 778 of human PDGF β-Receptor (Swiss-Prot Accession Number P09619). This phosphorylated peptide inhibits the binding of the GTPase activating protein (GAP), an SH2 domain-containing protein, to the PDGF β-Receptor. The peptide has a molecular weight of 1116 Daltons.

Platelet derived growth factor (PDGF) isoforms are potent mitogens, survival factors and chemoattractants. They exert their actions via specific receptors on the cell surface. Two distinct human PDGF receptor transmembrane binding proteins have been identified, a 170 kDa α-receptor (PDGF Rα)[1] and a 190 kDa β-receptor (PDGF Rβ)[2]. These two receptor proteins are structurally related and consist of an extracellular portion containing five immunoglobulin-like domains, a single transmembrane region, and an intracellular portion with a protein-tyrosine kinase domain.

PDGF binding induces receptor homo- or hetero-dimerization and the receptors then phosphorylate each other in trans on specific tyrosines.[3] The phosphorylated receptor then associates with various SH2 domain containing proteins including phospholipase C-γ (PLCγ), the GTPase activating protein of Ras (GAP),[4] and the regulatory subunit of phosphatidylinositol-3′ kinase (PI3K). A number of different signaling pathways are thus initiated leading to cell growth, actin reorganization, migration and differentiation.[5-7]

One of the known functions of GAP is to regulate the steady-state level of activated Ras,[8] a guanine-nucleotide binding protein that couples tyrosine kinase receptor signals to the MAP kinase cascade.[9] Studies indicate that removing the ability of PDGF β-Receptor to bind GAP improves signaling by the PDGF β-Receptor, suggesting that GAP plays a negative role signaling by this receptor.[7,10]

Reagent

PDGF β-Receptor Fragment 771-778 [pTyr^{771}] is supplied as a lyophilized trifluoroacetate salt.

Preparation Instructions

The product is soluble in water.

Storage/Stability

Store at –20 °C.

Product Profile

Purity: >96%

References

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