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Technical Data Sheet

For research use only
Not intended or approved for diagnostic or therapeutic use.

Product Name: PI-3 kinase alpha (p110α/p85α), active

Product Number: E-2000

Storage: Store at -70 ºC or below for long term storage, -20 ºC for short term storage. Avoid repeated freeze/thaw cycles.

Description: Complex of N-terminal 6X His-tagged recombinant full-length human p110α and untagged, recombinant, full-length, human p85α was coexpressed in sf9 cells using baculovirus expression vector system and purified by affinity chromatography. The p110α GenBank accession number is NM_006218; p85α GenBank accession number is NM_181523.1.

Supplied As: 10 or 50 µg in 25 mM Tris-HCl, pH 8.0, 250 mM NaCl, 150 mM imidazole, 5 mM $MgCl_2$, 1 mM sodium Orthovanadate, 1 mM benzamidine, 3 mM DTT, 45% glycerol.

Suggested Use: Enzymatic assays to study enzyme regulation and kinetics, inhibitor screening, western blot.

Purity and Activity: See Certificate of Analysis for lot specific enzyme information.

Background: Phosphoinositide-3-kinases (PI3-kinases) are a family of lipid kinases found in all eukaryotic cell types examined and linked to many intracellular signaling responses. PI3 kinases are classified into three classes (I, II, III) based on their catalytic domain. The Class 1 PI3 kinases which produce $PI(3,4,5)P_3$ in vivo is comprised of a 110 kDa catalytic subunit and a regulatory subunit. There are four isoforms in Class I: three isoforms termed alpha, beta and delta (gene names PIK3CA, PIK3CB, and PI3KCD) in Class IA and one isoform in Class IB called gamma (PI3KCG). Class IA enzymes are preferentially activated by tyrosine-kinase-mediated signals, while Class IB enzyme is linked to G-protein-coupled receptors (GPCR). Mounting evidence implicates a role for PI3 kinases in numerous human diseases including: allergy, inflammation, heart disease, diabetes, hypertention and cancer. Therefore, the inhibitors of PI3 kinase enzymes are considered potential important therapeutic agents.

References:

1. Chuan-Hsiang Huang, et al: The structure of a human p110α/p85α complex elucidates the effects of oncogenic PI3Kα mutations. Science 318 (2007) 1744-1748

2. Brigitte Boldyreef, et al: Expression and purification of PI3 kinase α and development of an ATP depletion and an AlphaScreen PI3 kinase activity assay. Journal of Biomolecular Screeening 13 (2008) 1035-1040

3. Timothy I. Meier, et al: Cloning, expression, purification and characterization of the human Class Ia phosphoinositide 3-kinase isoforms. Protein Expression and Purification 35 (2004) 218-224