

## PI3 Kinase gamma D946A<sup>GST</sup> Phosphoinositide 3-Kinase $\gamma$ , p110 $\gamma$ , inactive mutant human, recombinant, Sf9 cells

Cat. No.	Amount
PR-346	10 $\mu$ g

For *in vitro* use only  
Quality guaranteed for 12 months  
Store at -20°C

### Avoid freeze / thaw cycles

### Form

Liquid. Supplied in 25 mM Tris-HCl pH 8.0, 50 mM NaCl, 0.5 mM MgCl<sub>2</sub> and 50% glycerol.

### Molecular Weight

126.3 kDa (without Tag)

### Purity

≥95% by SDS-PAGE

### Description

The PI3K $\gamma$ D946A protein is a catalytically inactive mutant of PI3K $\gamma$  with a D946A mutation in the ATP binding site. This recombinant catalytically inactive protein can be used as a negative control in any kind of PI3K $\gamma$  kinase activity studies.

Recombinant full length PI3K $\gamma$ DA mutant carries a N-terminal GST-Tag and was purified by affinity chromatography. The GST-Tag facilitates the protein's application in typical GST pull-down assays.

### General

Phosphoinositide 3-kinases (PI3Ks) phosphorylate phosphatidylinositols (PIs) at their 3'-OH position generating lipid second messengers and thereby regulate numerous biological processes including cell growth, differentiation, survival, proliferation, migration and metabolism. On the basis of structural similarities and substrate specificity, the PI3K family can be subdivided into three classes termed I, II, and III. All human class I members are heterodimers consisting of a catalytic subunit (MW approx. 110 kDa) and a noncatalytic subunit (MW 50, 55, 85, or 101 kDa) and are known to phosphorylate phosphatidylinositol (PI), phosphatidylinositol-4-mono-phosphate (PIP) and phosphatidylinositol-4,5-bisphosphate (PIP<sub>2</sub>) *in vitro*. The class I members can be further subdivided into class IA and IB PI3Ks. Class IA exists in three isoforms (p110 $\alpha$ , p110 $\beta$  and p110 $\delta$ ) whereas the only class IB member is termed p110 $\gamma$ . Class IA PI3Ks are activated by adaptor proteins such as Ras or BCAP, or tyrosine-kinase-associated receptors including antigen, co-stimulatory and cytokine receptors (e.g. CD19, CD28, Insulin receptor, EGFR, and PDGFR). p110 $\gamma$  is activated by G-protein-coupled receptors (GPCRs). Effectors of class I PI3Ks are pleckstrin-homology domain proteins such as Akt/PKB, BTK, TEC, ITK, BAM32, and small GTPases (e.g. Cdc42, Rac, or Ras). The action of PI3Ks is regulated by the phosphatidylinositol-3,4,5-trisphosphate phosphatases SHIP and PTEN.

### Selected References:

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