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## Technical Data Sheet

### For research use only

Not intended or approved for  
diagnostic or therapeutic use.

<b>Product Name:</b>	<b>PI3K (p110<math>\beta</math>/p85<math>\alpha</math>), Active</b> Full-length recombinant human protein expressed in Sf9 cells
<b>Catalog Number:</b>	<b>P28-10H</b>
<b>Size:</b>	10 $\mu$ g
<b>Concentration:</b>	0.1 mg/mL
<b>Description:</b>	Recombinant full-length human p110 $\beta$ and human p85 $\alpha$ co-expressed by baculovirus in Sf9 insect cells with N-terminal His tag on both proteins. The gene accession number is NM_006219 for p110 $\beta$ , and NM_181523 for p85 $\alpha$ .
<b>Gene Aliases:</b>	p110 $\beta$ : PI3KCB, PIK3CB, PI3K, PIK3C1, PI3Kbeta, p110-BETA, p85 $\alpha$ : PIK3R1, GRB1, p85-alpha
<b>Formulation:</b>	50 mM sodium phosphate, pH 7.0, 300 mM NaCl, 150 mM imidazole, 0.1 mM PMSF, 0.25 mM DTT, and 25% glycerol.
<b>Specificity:</b>	Convert PI(4,5)P <sub>2</sub> to PI(3,4,5)P <sub>3</sub> ; convert PI to PI(3)P, and PI(4)P to PI(3,4)P <sub>2</sub> <i>in vitro</i> .
<b>Assay Condition:</b>	1X KBZ Kinase Reaction Buffer (cat# K-KBZ) with 2 mM DTT, 25 $\mu$ M ATP, 5 $\mu$ M PI(4,5)P <sub>2</sub> substrate and 0.05 – 1 ng/ $\mu$ L PI3K $\beta$ (optimize by enzyme titration as needed). Perform reactions at room temperature for 30 - 90 min.
<b>Suggested Use:</b>	PI3K activity assay and PI3K $\beta$ inhibitor screening.
<b>Storage:</b>	Store product at -70 $^{\circ}$ C or below. Enzyme is stable for 6 months from date of shipment. For best result, aliquot enzyme into small quantities after centrifugation, flash freeze aliquots, and store at recommended temperature. Avoid repeated handling and multiple freeze/thaw cycles.
<b>Scientific Background:</b>	The PI3K comprises of a 110 kDa catalytic subunit and a 85 kDa regulatory subunit. A number of isoforms of the 110 kDa catalytic subunit and the 85 kDa regulatory subunit exist in cells. The p110 $\beta$ catalytic subunit (PIK3CB) plays a role in regulating the formation and stability of alpha-2B-beta-3 integrin adhesion bonds, which are necessary for shear force-induced platelet activation <sup>1</sup> . In animal model of prostate tumor formation induced by the tumor suppressor PTEN loss, ablation of p110 $\beta$ impedes tumorigenesis with a concomitant diminution of AKT phosphorylation <sup>2</sup> .
<b>References:</b>	1. Jackson, S. P. et al: PI 3-kinase p110-beta: a new target for antithrombotic therapy. <i>Nature Med.</i> 11: 507-514, 2005. 2. Jia, S. et al: Essential roles of PI(3)K-p110-beta in cell growth, metabolism and tumorigenesis. <i>Nature</i> 454: 776-779, 2008.
<b>Related Products:</b>	<u>PI3K Activity Assay kits:</u> K-1000S (ELISA), K-1100 (FP), and K-1300 (AlphaScreen <sup>TM</sup> ) <u>PI(4,5)P<sub>2</sub> substrates:</u> P-4508, P-4516, C-45B6, C-45F6, C-45M6, H-45BT, H-45FL, H-45TR, and H-45TM <u>PI3-Kinase reaction buffer:</u> K-KBZ (5x KBZ Buffer) <u>Active PI3-K Enzymes:</u> E-2000 (human p110 $\alpha$ /p85 $\alpha$ ), P27-15H (human PI3-K $\alpha$ , E545K mutant), P27-18H (mouse p110 $\alpha$ /human p85 $\alpha$ )