SANTA CRUZ BIOTECHNOLOGY, INC.

PLC γ1 (530-850): sc-4019

BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a crucial role in the initiation of receptor mediated signal transduction through the generation of the two second messengers, inositol 1,4,5-triphosphate and diacylglycerol from phosphatidylinositol 4,5-bisphosphate. There are many mammalian PLC isozymes, including PLC β1, PLC β2, PLC β3, PLC β4, PLC γ1, PLC γ2, PLC δ1, PLC δ2 and PLCε. PLC γ1 is widely distributed in bronchiolar epithelium, type I and II pneumocytes and fibroblasts of the interstitial tissue. Actin-regulatory protein Villin is tyrosine phosphorylated and associates with PLC γ1 in the brush border of intestinal epithelial cells. Villin regulates PLC γ1 activity by modifying its own ability to bind phosphatidylinositol 4,5-biphosphate. PLC γ1 binds Integrin α1/β1 and modulates Integrin α1/β-specific adhesion. PLC γ1 and $Ca2^{+}$ play a direct role in VEGF-regulated endothelial growth, however this signaling pathway is not linked to FGF-mediated effects in primary endothelial cells. PLC γ1 is rapidly activated in response to growth factor stimulation and plays an important role in regulating cell proliferation and differentiation. It may also have a protective function during cellular response to oxidative stress.

REFERENCES

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3. Koch, C.A., Anderson, D.A., Moran, M.F., Ellis, C., and Pawson, T. 1991. SH2 and SH3 domains: elements that control interactions of cytoplasmic signaling proteins. Science 252: 668-674.
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CHROMOSOMAL LOCATION

Genetic locus: PLCG1 (human) mapping to 20q13.1; Plcg1 (mouse) mapping to 2 H2.

SOURCE

PLC γ1 (530-850) is expressed in *E. coli* as a 61 kDa tagged fusion protein corresponding to amino acids 530-850 of rat PLC γ1 containing the complete SH2-SH2-SH3 domains.

PRODUCT

PLC γ1 (530-850) is purified from bacterial lysates (>98%) by glutathione agarose chromatography and supplied as 50 µg purified protein in PBS containing 5 mM DTT and 50% glycerol.

Also available in agarose conjugate format; 100 µg purified PLC γ1 (530-850) protein conjugated to 0.1 ml agarose in PBS containing 0.1% azide, 0.1% BSA and 10% glycerol: PLC γ1 (530-850) AC: sc-4019 AC.

APPLICATIONS

PLC γ1 (530-850) is recommended for the enrichment of PLC γ1 associated proteins when used in combination with glutathione agarose (sc-2009). It is also suitable as a Western blotting control for sc-426.

SELECT PRODUCT CITATIONS

1. Jhun, B.H., Rivnay, B., Price, D. and Avraham, H. 1995. The MATK tyrosine kinase interacts in a specific and SH2-dependent manner with c-Kit. J. Biol. Chem. 270: 9661-9666.
2. Venema, R.C., Ju, H., Venema, V.J., Schieffer, B., Harp, J.B., Ling, B.N., Eaton, D.C. and Marrero, M.B. 1998. Angiotensin II-induced association of phospholipase C γ1 with the G-protein-coupled AT1 receptor. J. Biol. Chem. 273: 7703-7708.

STORAGE

Store PLC γ1 (530-850): sc-4019 at -20° C and PLC γ1 (530-850) AC: sc-4019 AC at 4° C. Stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.