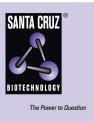
SANTA CRUZ BIOTECHNOLOGY, INC.

PLC γ1 (790-850): sc-4054



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 $\delta 1,$ PLC $\delta 2$ and PLC $\epsilon.$ PLC $\gamma 1$ 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 y1 in the brush border of intestinal epithelial cells. Villin regulates PLC y1 activity by modifying its own ability to bind phosphatidylinositol 4,5-biphosphate. PLC γ 1 binds Integrin α 1/ β 1 and modulates Integrin α 1/ β -specific adhesion. PLC $\gamma 1$ and Ca2+ play a direct role in VEGF-regulated endothelial growth, how-ever this signaling pathway is not linked to FGF-mediated effects in primary endothelial cells. PLC y1 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

- Suh, P., Ryu, S.H., Moon, K.H., Suh, H.W., and Rhee, S.G. 1988. Inositol phospholipid-specific phospholipase C: complete cDNA and protein sequences and sequence homology to tyrosine kinase-related oncogene products. Proc. Natl. Acad. Sci. USA 85: 5419-5423.
- Emori, Y., Homma, Y., Sorimachi, H., Kawasaki, H., Nakanishi, O., Suzuki, K., and Takenawa, T. 1989. A second type of rat phosphoinositide-specific phospholipase C containing a Src-related sequence not essential for phosphoinositide-hydrolyzing activity. J. Biol. Chem. 264: 21885-21890.
- 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.
- Meldrum, E., Kriz, R.W., Totty, N., and Parker, P.J. 1991. A second gene product of the inositol-phospholipid-specific phospholipase Cδ subclass. Eur. J. Biochem. 196: 159-165.
- Rhee, S.G. and Choi, K.D. 1992. Regulation of inositol phospholipidspecific phospholipase C isozymes. J. Biol. Chem. 267: 12393-12396.
- Kim, M.J., Bahk, Y.Y., Min, D.S., Lee, S., Ryu, S.H., and Suh, P. 1993. Cloning of cDNA encoding rat phospholipase Cβ4, a new member of the phospholipase C. Biochem. Biophys. Res. Commun. 194: 706-712.
- Jhon, D., Lee, H., Park, D., Lee, C., Lee, K., Yoo, O.J., and Rhee, S.G. 1993. Cloning, sequencing, purification and G_q-dependent activation of phospho-lipase Cβ3. J. Biol. Chem. 268: 6654-6661
- 8. Wu, D., Katz, A., and Simon, M.I. 1993. Activation of phospholipase C $\beta 2$ by the α and $\beta\gamma$ subunits of trimeric GTP-binding protein. Proc. Natl. Acad. Sci. USA 90: 5297-5301.

SOURCE

PLC γ 1 (790-850) is expressed in *E. coli* as a 31 kDa tagged fusion protein corresponding to amino acids 790-850 of PLC γ 1 of human origin.

PRODUCT

PLC γ 1 (790-850) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 50 µg purified protein in PBS containing 5mM DTT and 50% glycerol.

Also available in agarose conjugate form: PLC $\gamma 1$ (790-850) AC: sc-4054 AC; supplied as 100 μ g protein conjugated to 0.1 ml agarose in PBS containing 0.1% azide, 0.1% BSA and 10% glycerol.

APPLICATIONS

PLC γ 1(790-850) is recommended for the enrichment of PLC γ 1 associated proteins when used in combination with Glutathione-Agarose (sc-2009).

Agarose conjugate form, sc-4054 AC, is recommended for direct precipitation of target proteins.

STORAGE

Store PLC γ 1 (790-850): sc-4054 at -20° C and store PLC γ 1 (790-850) AC: sc-4054 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.