

α -protein kinase 1 (N-16): sc-130111

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. α -protein kinase 1, also known as ALPK1, LAK or KIAA1527, is a 1,244 amino acid protein that contains one α -type protein kinase domain and belongs to the protein kinase superfamily. Expressed at high levels in liver, α -protein kinase 1 recognizes and phosphorylates specific phosphorylation sites that are surrounded by peptides which have an α -helical conformation. One of the targets of α -protein kinase 1 is Myosin I and, via its ability to phosphorylate Myosin I, α -protein kinase 1 is thought to play an important role in the apical trafficking of vesicles carrying raft-associated sucrase-isomaltase (SI).

REFERENCES

1. Ryazanov, A.G., Pavur, K.S. and Dorovkov, M.V. 1999. α -kinases: a new class of protein kinases with a novel catalytic domain. *Curr. Biol.* 9: R43-R45.
2. Nakajima, D., Okazaki, N., Yamakawa, H., Kikuno, R., Ohara, O. and Nagase, T. 2002. Construction of expression-ready cDNA clones for KIAA genes: manual curation of 330 KIAA cDNA clones. *DNA Res.* 9: 99-106.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607347. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Yamada, S., Ohira, M., Horie, H., Ando, K., Takayasu, H., Suzuki, Y., Sugano, S., Hirata, T., Goto, T., Matsunaga, T., Hiyama, E., Hayashi, Y., Ando, H., Suita, S., Kaneko, M., Sasaki, F., Hashizume, K., et al. 2004. Expression profiling and differential screening between hepatoblastomas and the corresponding normal livers: identification of high expression of the PLK1 oncogene as a poor-prognostic indicator of hepatoblastomas. *Oncogene* 23: 5901-5911.
5. Drennan, D. and Ryazanov, A.G. 2004. α -kinases: analysis of the family and comparison with conventional protein kinases. *Prog. Biophys. Mol. Biol.* 85: 1-32.
6. Heine, M., Cramm-Behrens, C.I., Ansari, A., Chu, H.P., Ryazanov, A.G., Naim, H.Y. and Jacob, R. 2005. α -kinase 1, a new component in apical protein transport. *J. Biol. Chem.* 280: 25637-25643.
7. Thébault, S., Cao, G., Venselaar, H., Xi, Q., Bindels, R.J. and Hoenderop, J.G. 2008. Role of the α -kinase domain in transient receptor potential melastatin 6 channel and regulation by intracellular ATP. *J. Biol. Chem.* 283: 19999-20007.

CHROMOSOMAL LOCATION

Genetic locus: ALPK1 (human) mapping to 4q25.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

SOURCE

α -protein kinase 1 (N-16) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of α -protein kinase 1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

α -protein kinase 1 (N-16) is recommended for detection of α -protein kinase 1 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

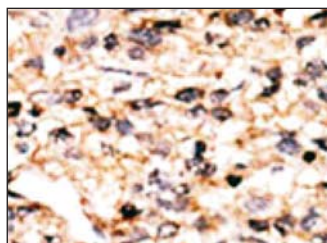
Suitable for use as control antibody for α -protein kinase 1 siRNA (h): sc-89309, α -protein kinase 1 shRNA Plasmid (h): sc-89309-SH and α -protein kinase 1 shRNA (h) Lentiviral Particles: sc-89309-V.

Molecular Weight of α -protein kinase 1: 140 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 2) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



α -protein kinase 1 (N-16): sc-130111. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cancer tissue showing cytoplasmic staining.

PROTOCOLS

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