SANTA CRUZ BIOTECHNOLOGY, INC.

PASK siRNA (h): sc-76070

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. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. PASK (PAS domain containing serine/threonine kinase), also known as STK37, PASKIN or KIAA0135, is a 1,323 amino acid cytoplasmic protein that belongs to the Ser/Thr protein kinase family and contains one protein kinase domain and two PAS domains. Expressed ubiquitously with higher levels present in brain, testis and prostate, PASK functions to catalyze the ATP-dependent phosphorylation of target proteins and is functionally activated via autophosphorylation on Thr 1161 and Thr 1165. Multiple isoforms of PASK exist due to alternative splicing events.

REFERENCES

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2. Hanks, S.K., Quinn, A.M. and Hunter, T. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. Science 241: 42-52.
3. Hofer, T., Spielmann, P., Stengel, P., Stier, B., Katschinski, D.M., Desbaillets, I., Gassmann, M. and Wenger, R.H. 2001. Mammalian PASKIN, a PAS-serine/threonine kinase related to bacterial oxygen sensors. Biochem. Biophys. Res. Commun. 288: 757-764.
4. Rutter, J., Michnoff, C.H., Harper, S.M., Gardner, K.H. and McKnight, S.L. 2001. PAS kinase: an evolutionarily conserved PAS domain-regulated serine/threonine kinase. Proc. Natl. Acad. Sci. USA 98: 8991-8996.
5. da Silva Xavier, G., Rutter, J. and Rutter, G.A. 2004. Involvement of Per-Arnt-Sim (PAS) kinase in the stimulation of preproinsulin and pancreatic duodenum homeobox 1 gene expression by glucose. Proc. Natl. Acad. Sci. USA 101: 8319-8324.

CHROMOSOMAL LOCATION

Genetic locus: PASK (human) mapping to 2q37.3.

PRODUCT

PASK siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PASK shRNA Plasmid (h): sc-76070-SH and PASK shRNA (h) Lentiviral Particles: sc-76070-V as alternate gene silencing products.

For independent verification of PASK (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76070A, sc-76070B and sc-76070C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PASK siRNA (h) is recommended for the inhibition of PASK expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PASK gene expression knockdown using RT-PCR Primer: PASK (h)-PR: sc-76070-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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