SANTA CRUZ BIOTECHNOLOGY, INC.

bradykinin B2 R siRNA (h): sc-29822

BACKGROUND

Kinins are important biologically active peptides that mediate cardiovascular homeostasis, inflammation and nociception. Bradykinin, the major effector peptide of the kallikrein-kinin system, is regulated by angiotensin-converting enzyme (ACE), which degrades the peptide. Bradykinin normally exerts its effects through the activation of two seven transmembrane G protein-coupled receptors, named B1 and B2. The B2 receptor is constitutively expressed and preferentially binds full length bradykinin. Deletion of the B2 receptor leads to salt-sensitive hypertension and altered nociception in mice. The B1 receptor binds to derivatives of bradykinin and kallidin, which are produced by carboxypeptidase action to generate the products des-Arg9-bradykinin and des-Arg10-kallidin, respectively. The expression of the B1 receptor is inducible by inflammatory mediators, such as bacterial lipopolysaccharide (LPS) and cytokines. The B1 and B2 receptors represent potential therapeutic targets for treatment of inflammatory disorders and cardiovascular diseases.

REFERENCES

1. Trifilieff, A., et al. 1993. Kinins and respiratory tract diseases. Eur. Respir. J. 6: 576-587.
2. Borkowski, J.A., et al. 1995. Targeted disruption of a B2 bradykinin receptor gene in mice eliminates bradykinin action in smooth muscle and neurons. J. Biol. Chem. 270: 13706-13710.
3. Rupniak, N.M., et al. 1997. Effects of the bradykinin B1 receptor antagonist des-Arg^{9}[Leu^{8}]bradykinin and genetic disruption of the B2 receptor on nociception in rats and mice. Pain 71: 89-97.

CHROMOSOMAL LOCATION

Genetic locus: BDKRB2 (human) mapping to 14q32.2.

PRODUCT

bradykinin B2 R 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 bradykinin B2 R shRNA Plasmid (h): sc-29822-SH and bradykinin B2 R shRNA (h) Lentiviral Particles: sc-29822-V as alternate gene silencing products.

For independent verification of bradykinin B2 R (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-29822A, sc-29822B and sc-29822C.

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

bradykinin B2 R siRNA (h) is recommended for the inhibition of bradykinin B2 R 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 bradykinin B2 R gene expression knockdown using RT-PCR Primer: bradykinin B2 R (h)-PR: sc-29822-PR (20 µl, 584 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lee, C.H., et al. 2008. Bradykinin-induced IL-6 expression through bradykinin B2 receptor, phospholipase C, protein kinase Cδ and NFκB pathway in human synovial fibroblasts. Mol. Immunol. 45: 3693-3702.
2. Yang, W.H., et al. 2010. Bradykinin enhances cell migration in human chondrosarcoma cells through BK receptor signaling pathways. J. Cell. Biochem. 109: 82-92.
3. Vassou, D., et al. 2011. Opioids increase bladder cancer cell migration via bradykinin B2 receptors. Int. J. Oncol. 39: 697-707.
4. Yu, H.S., et al. 2013. Bradykinin enhances cell migration in human prostate cancer cells through B2 receptor/PKCδ/c-Src dependent signaling pathway. Prostate 73: 89-100.
5. Li, G., et al. 2017. Bradykinin regulates cell growth and migration in cultured human cardiac c-Kit^{+} progenitor cells. Oncotarget 8: 10822-10835.
6. Li, G., et al. 2018. Bradykinin-mediated Ca^{2+} signalling regulates cell growth and mobility in human cardiac c-Kit^{+} progenitor cells. J. Cell. Mol. Med. 22: 4688-4699.

RESEARCH USE

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

PROTOCOLS

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