SANTA CRUZ BIOTECHNOLOGY, INC.

Bek siRNA (h): sc-29218

BACKGROUND

Acidic and basic fibroblast growth factors (FGFs) are members of a family of multifunctional polypeptide growth factors that stimulate proliferation of cells of mesenchymal, epithelial and neuroectodermal origin. Like other growth factors, FGFs act by binding and activating specific cell surface receptors. These include the Flg receptor or FGFR-1, the Bek receptor (or FGFR-2), FGFR-3, FGFR-4, FGFR-5 and FGFR-6. These receptors usually contain an extracellular ligand-binding region containing three immunoglobulin-like domains, a transmembrane domain and a cytoplasmic tyrosine kinase domain. The gene encoding human Bek (also designated K-sam) maps to chromosome 10q26.13 and is alternatively spliced to produce several isoforms. Heterogeneous mutations in Bek are associated with a range of craniosynostosis syndromes including Pfeiffer syndrome, Crouzon syndrome, Jackson-Weiss syndrome and Apert syndrome.

REFERENCES

1. Rifkin, D.B. and Moscatelli, D. 1989. Recent developments in the cell biology of fibroblast growth factor. J. Cell Biol. 109: 1-6.
2. Dionne, C.A., et al. 1990. Cloning and expression of two distinct high-affinity receptors cross-reacting with acidic and basic fibroblast growth factors. EMBO J. 9: 2685-2692.

CHROMOSOMAL LOCATION

Genetic locus: FGFR2 (human) mapping to 10q26.13.

PRODUCT

Bek siRNA (h) is a pool of 4 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 Bek shRNA Plasmid (h): sc-29218-SH and Bek shRNA (h) Lentiviral Particles: sc-29218-V as alternate gene silencing products.

For independent verification of Bek (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-29218A, sc-29218B, sc-29218C and sc-29218D.

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

Bek siRNA (h) is recommended for the inhibition of Bek 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.

GENE EXPRESSION MONITORING

Bek (C-8): sc-6930 is recommended as a control antibody for monitoring of Bek gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bek gene expression knockdown using RT-PCR Primer: Bek (h)-PR: sc-29218-PR (20 µl, 558 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Belleudi, F., et al. 2011. Expression and signaling of the tyrosine kinase FGFR2b/KGFR regulates phagocytosis and melanosome uptake in human keratinocytes. FASEB J. 25: 170-181.
2. Kim, S.Y., et al. 2013. ARS-interacting multi-functional protein 1 induces proliferation of human bone marrow-derived mesenchymal stem cells by accumulation of β-catenin via fibroblast growth factor receptor 2-mediated activation of Akt. Stem Cells Dev. 22: 2630-2640.
3. Belleudi, F., et al. 2014. FGF7/KGF regulates autophagy in keratinocytes: a novel dual role in the induction of both assembly and turnover of autophagosomes. Autophagy 10: 803-821.
4. Ranieri, D., et al. 2015. HPV16 E5 expression induces switching from FGFR2b to FGFR2c and epithelial-mesenchymal transition. Int. J. Cancer 137: 61-72.
5. Ranieri, D., et al. 2016. Expression of the FGFR2 mesenchymal splicing variant in epithelial cells drives epithelial-mesenchymal transition. Oncotarget 7: 5440-5460.
6. Wang, Z., et al. 2016. Antioxidants inhibit advanced glycosylation end-product-induced apoptosis by downregulation of miR-223 in human adipose tissue-derived stem cells. Sci. Rep. 6: 23021.
7. Ceccarelli, S., et al. 2018. Neuropilin 1 mediates keratinocyte growth factor signaling in adipose-derived stem cells: potential involvement in adipogenesis. Stem Cells Int. 2018: 1075156.

RESEARCH USE

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