SANTA CRUZ BIOTECHNOLOGY, INC.

HGTD-P siRNA (h): sc-78235

BACKGROUND

HGTD-P (human growth and transformation-dependent protein), also known as E2IG5 or FAM162A, is a 154 amino acid single-pass membrane protein belonging to the UPF0389 family. Considered a proapoptotic protein, HGTD-P is an effector of cell death induced by hypoxia-ischemia (HI) and is therefore considered a potential target in treating HI-induced brain damage. HGTD-P localizes to the mitochondria and, when overexpressed, induces the mitochondrial permeability transition by interacting with voltage dependent anion channels. HGTD-P facilitates apoptotic cell death via the mitochondrial apoptotic cascades, including permeability transition, cytochrome c release and caspase 9 activation. HGTD-P is regulated and activated by HIF-1α through a hypoxia-responsive element on the HGTD-P promoter region.

REFERENCES

1. Lee, M.J., et al. 2004. Identification of the hypoxia-inducible factor 1 α-responsive HGTD-P gene as a mediator in the mitochondrial apoptotic pathway. Mol. Cell. Biol. 24: 3918-3927.
2. Webster, K.A., et al. 2006. Redox stress and the contributions of BH3-only proteins to infarction. Antioxid. Redox Signal. 8: 1667-1676.
3. Kim, J.Y., et al. 2006. Interaction of pro-apoptotic protein HGTD-P with heat shock protein 90 is required for induction of mitochondrial apoptotic cascades. FEBS Lett. 580: 3270-3275.
4. Cho, Y.E., et al. 2007. mHGTD-P mediates hypoxic neuronal cell death via the release of apoptosis-inducing factor. Neurosci. Lett. 416: 144-149.
5. Cho, Y.E., et al. 2009. Expression and prognostic significance of human growth and transformation-dependent protein in gastric carcinoma and gastric adenoma. Hum. Pathol. 40: 975-981.
6. Tang, B., et al. 2009. *In vitro* effects of hypoxia-inducible factor 1α on the biological characteristics of the SiHa uterine cervix cancer cell line. Int. J. Gynecol. Cancer 19: 898-904.
7. Qu, Y., et al. 2009. Proapoptotic role of human growth and transformation-dependent protein in the developing rat brain after hypoxia-ischemia. Stroke 40: 2843-2848.

CHROMOSOMAL LOCATION

Genetic locus: FAM162A (human) mapping to 3q21.1.

PRODUCT

HGTD-P siRNA (h) is a pool of 2 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 HGTD-P shRNA Plasmid (h): sc-78235-SH and HGTD-P shRNA (h) Lentiviral Particles: sc-78235-V as alternate gene silencing products.

For independent verification of HGTD-P (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-78235A and sc-78235B.

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

HGTD-P siRNA (h) is recommended for the inhibition of HGTD-P 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

HGTD-P (H-4): sc-514243 is recommended as a control antibody for monitoring of HGTD-P 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HGTD-P gene expression knockdown using RT-PCR Primer: HGTD-P (h)-PR: sc-78235-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.

PROTOCOLS

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