SANTA CRUZ BIOTECHNOLOGY, INC.

IIp45 siRNA (m): sc-146197

BACKGROUND

Glioblastoma multiforme (GBM) is considered the most common and most aggressive form of primary brain tumor in humans. It is suggested that most glioblastoma tumors appear to be sporadic, without any genetic predisposition. GBM is characterized by the presence of small areas of necrotizing tissue that are surrounded by anaplastic cells. Patients experience seizure, headache, hemiparesis, progressive memory loss and neurological problems due to temporal and frontal lobe involvement. Treatment is difficult and the survival rate remains very low. Thus, a better understanding of the glioma invasion process is required to develop new therapeutic strategies. The identification of an invasion inhibitory protein, IIp45 (invasion-inhibitory protein 45), also known as D4Wsu114e, was discovered to be underexpressed in GBM patients. It is suggested that IIp45 inhibits glioma cell migration and invasion. Considered a tumor suppressor, Il45p can be inactivated by frequent point mutations. IIp45 contains three SEG (segment of low compositional complexity) domains and an integrin-binding RGD motif. Three isoforms exist due to alternative splicing events.

REFERENCES

1. Song, S.W., et al. 2003. IIp45, an Insulin-like growth factor binding protein 2 (IGFBP-2) binding protein, antagonizes IGFBP-2 stimulation of glioma cell invasion. Proc. Natl. Acad. Sci. USA 100: 13970-13975.
2. Song, S.W., et al. 2005. Inactivation of the invasion inhibitory gene IIp45 by alternative splicing in gliomas. Cancer Res. 65: 3562-3567.
3. Frommer, K.W., et al. 2006. IGF-independent effects of IGFBP-2 on the human breast cancer cell line Hs578T. J. Mol. Endocrinol. 37: 13-23.
4. Hoelzinger, D.B., et al. 2007. Autocrine factors that sustain glioma invasion and paracrine biology in the brain microenvironment. J. Natl. Cancer Inst. 99: 1583-1593.
5. Dunlap, S.M., et al. 2007. Insulin-like growth factor binding protein 2 promotes glioma development and progression. Proc. Natl. Acad. Sci. USA 104: 11736-11741.
6. Demuth, T., et al. 2008. Glioma cells on the run-the migratory transcriptome of 10 human glioma cell lines. BMC Genomics 9: 54.

CHROMOSOMAL LOCATION

Genetic locus: Miip (mouse) mapping to 4 E2.

PRODUCT

IIp45 siRNA (m) 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 IIp45 shRNA Plasmid (m): sc-146197-SH and IIp45 shRNA (m) Lentiviral Particles: sc-146197-V as alternate gene silencing products.

For independent verification of IIp45 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146197A, sc-146197B and sc-146197C.

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

IIp45 siRNA (m) is recommended for the inhibition of IIp45 expression in mouse 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 IIp45 gene expression knockdown using RT-PCR Primer: IIp45 (m)-PR: sc-146197-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.