SANTA CRUZ BIOTECHNOLOGY, INC.

Che-1 siRNA (m): sc-72889

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The Power to Question

BACKGROUND

Che-1, also known as apoptosis-antagonizing transcription factor (AATF), is a widely expressed nuclear protein that belongs to the AATF family. Hyperphosphorylated during the G_1/S phase transition, Che-1 may function as a general inhibitor of the histone deacetylase HDAC1. Che-1 binding to the pocket region of Rb may displace HDAC1 from Rb/E2F complexes, leading to activation of E2F target genes and cell cycle progression. Displacement of HDAC1 from Sp1 bound to the p21 promoter leads to increased expression of Che-1. It also antagonizes PAR4 (prostate apoptosis response 4) mediated induction of aberrant amyloid peptide production in Alzheimer's disease (AD), also known as presenile and senile dementia. PAR4 is a leucine zipper protein that is pro-apoptotic and associated with neuronal degeneration in AD. Che-1 interaction with PAR4 suggests that it might directly or indirectly participate in regulation of PAR4 activity. Che-1 also co-localizes with PAR4 in both cytoplasmic and nuclear compartments, and interacts directly and selectively with PAR4 via the leucine zipper domain in neural cells.

REFERENCES

1. Lindfors, K., et al. 2000. Identification of novel transcription factor-like gene from human intestinal cells. Biochem. Biophys. Res. Commun. 276: 660-666.
2. Di Padova, M., et al. 2003. Che-1 arrests human colon carcinoma cell proliferation by displacing HDAC1 from the $p21^{WAF1/CIP1}$ promoter. J. Biol. Chem. 278: 36496-36504.
3. Xie, J. and Guo, Q. 2004. AATF protects neural cells against oxidative damage induced by Amyloid β-peptide. Neurobiol. Dis. 16: 150-157.
4. Guo, Q. and Xie, J. 2004. AATF inhibits aberrant production of Amyloid β peptide 1-42 by interacting directly with PAR4. J. Biol. Chem. 279: 4596-4603.
5. Burgdorf, S., et al. 2004. Tsg 101 interacts with apoptosis-antagonizing transcription factor and enhances androgen receptor-mediated transcription by promoting its monoubiquitination. J. Biol. Chem. 279: 17524-17534.

CHROMOSOMAL LOCATION

Genetic locus: Aatf (mouse) mapping to 11 C.

PRODUCT

Che-1 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 Che-1 shRNA Plasmid (m): sc-72889-SH and Che-1 shRNA (m) Lentiviral Particles: sc-72889-V as alternate gene silencing products.

For independent verification of Che-1 (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-72889A, sc-72889B and sc-72889C.

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

Che-1 siRNA (m) is recommended for the inhibition of Che-1 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 Che-1 gene expression knockdown using RT-PCR Primer: Che-1 (m)-PR: sc-72889-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, D., et al. 2018. Che-1 attenuates hypoxia/reoxygenation-induced cardiomyocyte apoptosis by upregulation of Nrf2 signaling. Eur. Rev. Med. Pharmacol. Sci. 22: 1084-1093.
2. Guo, S., et al. 2018. Che-1 inhibits oxygen-glucose deprivation/reoxygenation-induced neuronal apoptosis associated with inhibition of the p53-mediated proapoptotic signaling pathway. Neuroreport 29: 1193-1200.

RESEARCH USE

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