SANTA CRUZ BIOTECHNOLOGY, INC.

CB2 siRNA (m): sc-39913

BACKGROUND

The cannabinoid receptors (CB1 and CB2) are G protein-coupled receptors that inhibit adenylate cyclase activity in response to psychoactive cannabinoids. CB1 is expressed in brain tissue and, in low levels, in testis. CB2 has been shown to be expressed only by cells of the immune system, specifically by HL-60 cells. The cannabinoid receptors mediate most of the cannabinoid-induced responses in a dose-dependent, stereoselective manner. This response system is thought to be involved in specific brain functions, such as nociception, control of movement, memory, and neuroendocrine regulation as well as having a possible role in brain development. In addition, CB1 may mediate the addictive behavior involved with the use of psychoactive cannabinoids, such as THC in marijuana.

REFERENCES

1. Matsuda, L.A., et al. 1990. Structure of a cannabinoid receptor and functional expression of the cloned cDNA. Nature 346: 561-564.
2. Gerard, C.M., et al. 1991. Molecular cloning of a human cannabinoid receptor which is also expressed in testis. Biochem. J. 179: 129-134.
3. Munro, S., et al. 1993. Molecular characterization of a peripheral receptor for cannabinoids. Nature 365: 61-65.
4. Shire, D., et al. 1996. Molecular cloning, expression and function of the murine CB2 peripheral cannabinoid receptor. Biochim. Biophys. Acta 1307: 132-136.
5. Ledent, C., et al. 1999. Unresponsiveness to cannabinoids and reduced addictive effects of opiates in CB1 receptor knockout mice. Science 283: 401-404.
6. Sugiura, T., et al. 2000. Evidence that 2-arachidonoylglycerol but not N-palmitoylethanolamine or anandamide is the physiological ligand for the cannabinoid CB2 receptor. Comparison of the agonistic activities of various cannabinoid receptor ligands in HL-60 cells. J. Biol. Chem. 275: 605-612.
7. Fernandez-Ruiz, J., et al. 2000. The endogenous cannabinoid system and brain development. Trends Neurosci. 23: 14-20.
8. Valverde, O., et al. 2000. Reduction of stress-induced analgesia but not of exogenous opioid effects in mice lacking CB1 receptors. Eur. J. Neurosci. 12: 533-539.

CHROMOSOMAL LOCATION

Genetic locus: Cnr2 (mouse) mapping to 4 D3.

PRODUCT

CB2 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 CB2 shRNA Plasmid (m): sc-39913-SH and CB2 shRNA (m) Lentiviral Particles: sc-39913-V as alternate gene silencing products.

For independent verification of CB2 (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-39913A, sc-39913B and sc-39913C.

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

CB2 siRNA (m) is recommended for the inhibition of CB2 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 CB2 gene expression knockdown using RT-PCR Primer: CB2 (m)-PR: sc-39913-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. Merighi, S., et al. 2012. Cannabinoid CB2 receptors modulate ERK-1/2 kinase signalling and NO release in microglial cells stimulated with bacterial lipopolysaccharide. Br. J. Pharmacol. 165: 1773-1788.
2. Merighi, S., et al. 2012. Cannabinoid CB2 receptor attenuates morphine-induced inflammatory responses in activated microglial cells. Br. J. Pharmacol. 166: 2371-2385.
3. Tang, M., et al. 2018. Celastrol alleviates renal fibrosis by upregulating cannabinoid receptor 2 expression. Cell Death Dis. 9: 601.
4. Yang, X., et al. 2024. Cannabidiol inhibits IgE-mediated mast cell degranulation and anaphylaxis in mice. Mol. Nutr. Food Res. 68: e2300136.

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.