

p-CB1 (Ser 316): sc-17555

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. Phosphorylation of CB1 on Serine 316 leads to a disruption of CB1-mediated inhibition of calcium channels and activation of potassium currents. 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. Garcia, D.E., et al. 1998. Protein kinase C disrupts cannabinoid actions by phosphorylation of the CB1 cannabinoid receptor. *J. Neurosci.* 18: 2834-2841.
6. Ledent, C., et al. 1999. Unresponsiveness to cannabinoids and reduced addictive effects of opiates in CB1 receptor knockout mice. *Science* 283: 401-404.

CHROMOSOMAL LOCATION

Genetic locus: CNR1 (human) mapping to 6q15; Cnr1 (mouse) mapping to 4 A5.

SOURCE

p-CB1 (Ser 316) is available as either goat (sc-17555) or rabbit (sc-17555-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 316 of CB1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17555 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

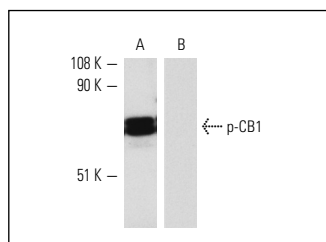
p-CB1 (Ser 316) is recommended for detection of Ser 316 phosphorylated CB1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-CB1 (Ser 316) is also recommended for detection of correspondingly phosphorylated Ser on CB1 in additional species, including equine, canine, bovine, porcine and avian.

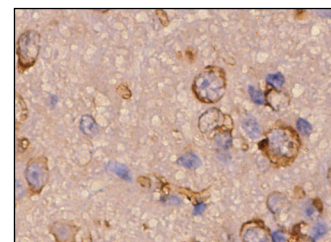
Suitable for use as control antibody for CB1 siRNA (h): sc-39910, CB1 siRNA (m): sc-39911, CB1 shRNA Plasmid (h): sc-39910-SH, CB1 shRNA Plasmid (m): sc-39911-SH, CB1 shRNA (h) Lentiviral Particles: sc-39910-V and CB1 shRNA (m) Lentiviral Particles: sc-39911-V.

Molecular Weight of p-CB1: 54/63 kDa.

DATA



Western blot analysis of CB1 phosphorylation in rat cerebellum tissue extract. Blots were probed with p-CB1 (Ser 316): sc-17555 preincubated with cognate non-phosphorylated (A) and cognate phosphorylated (B) peptides.



p-CB1 (Ser 316): sc-17555. Immunoperoxidase staining of formalin-fixed, paraffin-embedded mouse brain tissue showing membrane localization.

SELECT PRODUCT CITATIONS

1. Díaz-Asensio, C., et al. 2008. Type 1 diabetes alters brain cannabinoid receptor expression and phosphorylation status in rats. *Horm. Metab. Res.* 40: 454-458.
2. Orio, L., et al. 2009. A role for the endocannabinoid system in the increased motivation for cocaine in extended-access conditions. *J. Neurosci.* 29: 4846-4857.
3. Wallace, M.J., et al. 2009. PKC ε regulates behavioral sensitivity, binding and tolerance to the CB1 receptor agonist WIN55,212-2. *Neuropsychopharmacology* 34: 1733-1742.
4. Dall'Aglio, C., et al. 2010. Immunohistochemical localization of CB1 receptor in canine salivary glands. *Vet. Res. Commun.* 34: S9-12.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.