

Sigma Receptor (B-5): sc-137075

BACKGROUND

Sigma Receptor, also known as opioid receptor, Sigma 1 (Oprs 1), acts as a modulatory system influencing the analgesic activity of opioid drugs. For example, activation of the Sigma Receptor is induced during the early effects of cocaine. At the cellular level, Sigma Receptor agonists modulate intracellular calcium mobilization and extracellular calcium influx, NMDA-mediated responses, and acetylcholine release and alter monoaminergic systems. At the behavioral level, the Sigma Receptor is involved in learning and memory processes, response to stress, depression, neuroprotection and pharmacodependence. Pregnenolone, dehydroepiandrosterone and their sulfate esters behave as Sigma Receptor agonists, while progesterone is a potent antagonist. Sigma Receptor is expressed in the endocrine, immune and other peripheral organ systems and is expressed in a variety of human tumors. The Sigma Receptor is responsible for the pathogenesis of some psychiatric disorders and may be involved in several diseases of the central nervous system. Opioid analgesia is influenced by many factors, including the Sigma Receptor.

CHROMOSOMAL LOCATION

Genetic locus: SIGMAR1 (human) mapping to 9p13.3; Sigmar1 (mouse) mapping to 4 A5.

SOURCE

Sigma Receptor (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 136-169 within an internal region of Sigma Receptor of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sigma Receptor (B-5) is available conjugated to agarose (sc-137075 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137075 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137075 PE), fluorescein (sc-137075 FITC), Alexa Fluor® 488 (sc-137075 AF488), Alexa Fluor® 546 (sc-137075 AF546), Alexa Fluor® 594 (sc-137075 AF594) or Alexa Fluor® 647 (sc-137075 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137075 AF680) or Alexa Fluor® 790 (sc-137075 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-137075 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

PROTOCOLS

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

APPLICATIONS

Sigma Receptor (B-5) is recommended for detection of Sigma Receptor of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

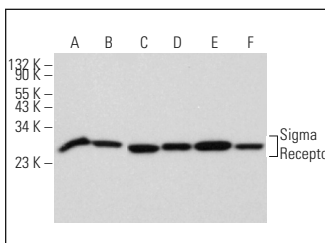
Sigma Receptor (B-5) is also recommended for detection of Sigma Receptor in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Sigma Receptor siRNA (h): sc-42250, Sigma Receptor siRNA (m): sc-42251, Sigma Receptor shRNA Plasmid (h): sc-42250-SH, Sigma Receptor shRNA Plasmid (m): sc-42251-SH, Sigma Receptor shRNA (h) Lentiviral Particles: sc-42250-V and Sigma Receptor shRNA (m) Lentiviral Particles: sc-42251-V.

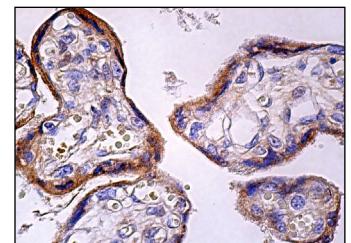
Molecular Weight of Sigma Receptor: 30 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, A549 cell lysate: sc-2413 or c4 whole cell lysate: sc-364186.

DATA



Sigma Receptor (B-5): sc-137075. Western blot analysis of Sigma Receptor expression in Hep G2 (A), JAR (B), c4 (C), A549 (D), AN3 CA (E) and Neuro-2A (F) whole cell lysates.



Sigma Receptor (B-5): sc-137075. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

1. Navarro, G., et al. 2013. Cocaine inhibits dopamine D₂ receptor signaling via α -1-D₂ receptor heteromers. *PLoS ONE* 8: e61245.
2. Dakic, V., et al. 2017. Short term changes in the proteome of human cerebral organoids induced by 5-MeO-DMT. *Sci. Rep.* 7: 12863.
3. Liu, D.Y., et al. 2018. Sigma-1 receptor activation alleviates blood-brain barrier dysfunction in vascular dementia mice. *Exp. Neurol.* 308: 90-99.
4. Bai, T., et al. 2019. Sigma-1 receptor protects against ferroptosis in hepatocellular carcinoma cells. *J. Cell. Mol. Med.* 23: 7349-7359.
5. Bravo-Caparrós, I., et al. 2020. Sigma-1 receptors control neuropathic pain and macrophage infiltration into the dorsal root ganglion after peripheral nerve injury. *FASEB J.* 34: 5951-5966.

RESEARCH USE

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