

# Sigma Receptor (S-18): sc-22948

## BACKGROUND

Sigma Receptor, also known as opioid receptor, sigma 1 (Opr1), 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.

## REFERENCES

- Walker, J.M., et al. 1990. Sigma receptors: biology and function. *Pharmacol. Rev.* 42: 355-402.
- Ferris, C.D., et al. 1991. Sigma receptors: from molecule to man. *J. Neurochem.* 57: 729-737.
- Su, T.P. 1991. Sigma Receptors. Putative links between nervous, endocrine and immune systems. *Eur. J. Biochem.* 200: 633-642.
- Kekuda, R., et al. 1996. Cloning and functional expression of the human type 1 sigma receptor (h $\sigma$ R1). *Biochem. Biophys. Res. Commun.* 229: 553-558.

## CHROMOSOMAL LOCATION

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

## SOURCE

Sigma Receptor (S-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Sigma Receptor of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22948 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

Sigma Receptor (S-18) is recommended for detection of Sigma Receptor of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

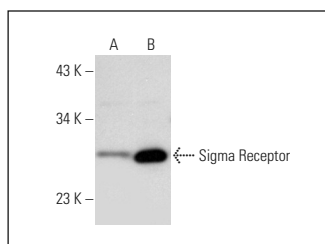
Sigma Receptor (S-18) is also recommended for detection of Sigma Receptor in additional species, including canine, bovine and porcine.

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.

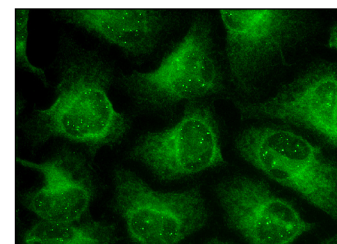
Molecular Weight of Sigma Receptor: 30 kDa.

Positive Controls: Sigma Receptor (m): 293T Lysate: sc-125996, JAR cell lysate: sc-2276 or Hep G2 cell lysate: sc-2227.

## DATA



Sigma Receptor (S-18): sc-22948. Western blot analysis of Sigma Receptor expression in non-transfected: sc-117752 (A) and mouse Sigma Receptor transfected: sc-125996 (B) 293T whole cell lysates.



Sigma Receptor (S-18): sc-22948. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Wu, Z., et al. 2008. Role of sigma-1 receptor C-terminal segment in inositol 1,4,5-trisphosphate receptor activation: constitutive enhancement of calcium signaling in MCF-7 tumor cells. *J. Biol. Chem.* 283: 28198-28215.
- Liu, L.L., et al. 2010. Expression of sigma receptor 1 mRNA and protein in rat retina. *Neuroscience* 167: 1151-1159.
- Luty, A.A., et al. 2010. Sigma nonopioid intracellular receptor 1 mutations cause frontotemporal lobar degeneration-motor neuron disease. *Ann. Neurol.* 68: 639-649.



Try **Sigma Receptor (B-5): sc-137075** or **Sigma Receptor (F-5): sc-166392**, our highly recommended monoclonal alternatives to Sigma Receptor (S-18). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Sigma Receptor (B-5): sc-137075**.