

# D3DR (9F4): sc-136170

## BACKGROUND

The members of the G protein-coupled receptor family are distinguished by their slow transmitting response to ligand binding. These transmembrane proteins include the adrenergic, serotonin and dopamine receptors. The effect of the signaling molecule can be excitatory or inhibitory depending on the type of receptor to which it binds.  $\beta$ -adrenergic receptor binds to adrenaline activates adenylyl cyclase, while  $\alpha_2$ -adrenergic receptor binds to adrenaline inhibits adenylyl cyclase. The dopamine receptors are divided into two classes, D1 and D2, which differ in their functional characteristics in that D1 receptors stimulate adenylyl cyclase while D2 receptors inhibit adenylyl cyclase activity. Five different subtypes of dopamine receptor have been described to date. D1DR and D5DR belong to the D1 subclass, while D2DR, D3DR and D4DR belong to the D2 subclass.

## CHROMOSOMAL LOCATION

Genetic locus: DRD3 (human) mapping to 3q13.31; Drd3 (mouse) mapping to 16 B4.

## SOURCE

D3DR (9F4) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 210-218 of human origin.

## PRODUCT

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

D3DR (9F4) is available conjugated to agarose (sc-136170 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136170 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136170 PE), fluorescein (sc-136170 FITC), Alexa Fluor<sup>®</sup> 488 (sc-136170 AF488), Alexa Fluor<sup>®</sup> 546 (sc-136170 AF546), Alexa Fluor<sup>®</sup> 594 (sc-136170 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-136170 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-136170 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-136170 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

D3DR (9F4) is recommended for detection of D3DR 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for D3DR siRNA (h): sc-35163, D3DR siRNA (m): sc-35164, D3DR shRNA Plasmid (h): sc-35163-SH, D3DR shRNA Plasmid (m): sc-35164-SH, D3DR shRNA (h) Lentiviral Particles: sc-35163-V and D3DR shRNA (m) Lentiviral Particles: sc-35164-V.

Molecular Weight of D3DR: 44 kDa.

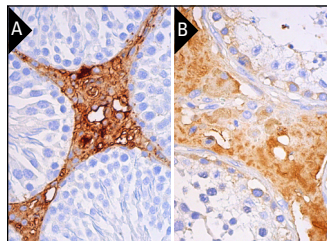
## STORAGE

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.

## DATA



D3DR (9F4): sc-136170. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat testis tissue showing membrane and cytoplasmic staining of Leydig cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of Leydig cells (B).

## SELECT PRODUCT CITATIONS

1. Kumari, R.P., et al. 2011. Role of quercetin on PCBs (Aroclor-1254) induced impairment of dopaminergic receptor mRNA expression in cerebral cortex of adult male rats. *Neurochem. Res.* 36: 1344-1352.
2. Bavithra, S., et al. 2012. Polychlorinated biphenyl (PCBs)-induced oxidative stress plays a critical role on cerebellar dopaminergic receptor expression: ameliorative role of quercetin. *Neurotox. Res.* 21: 149-159.
3. Bini, J., et al. 2020. PET imaging of pancreatic dopamine D2 and D3 receptor density with <sup>11</sup>C + PHNO in type-1 diabetes mellitus. *J. Nucl. Med.* 61: 570-576.
4. Guerrero-Bautista, R., et al. 2021. Distinct regulation of dopamine D3 receptor in the basolateral amygdala and dentate gyrus during the reinstatement of cocaine CPP induced by drug priming and social stress. *Int. J. Mol. Sci.* 22: 3100.
5. Liu, Y., et al. 2021. Dopamine receptor-mediated binding and cellular uptake of polydopamine-coated nanoparticles. *ACS Nano* 15: 13871-13890.
6. Wang, B., et al. 2022. Dopamine D3 receptor signaling alleviates mouse rheumatoid arthritis by promoting Toll-like receptor 4 degradation in mast cells. *Cell Death Dis.* 13: 240.
7. Vo, V.T.A., et al. 2022. Iron commensalism of mesenchymal glioblastoma promotes ferroptosis susceptibility upon dopamine treatment. *Commun. Biol.* 5: 593.
8. Jung, J.W., et al. 2023. Dopamine and serotonin alterations by *Hizikia fusiformis* extracts under *in vitro* cortical primary neuronal cell cultures. *Nutr. Res. Pract.* 17: 408-420.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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