

Dopamine Receptor (D₁) Polyclonal Antibody

Product Specifications

Catalog Number:	905-789-100						
Host:	Rabbit						
Species Reactivity:	Rat (predicted to react with mouse based on epitope sequence identity) Other species not tested						
Applications:	WB: Yes Membrane ELISA* : Yes Other applications not tested. <i>The optimal dilution for a specific application must be determined by the investigator.</i> <i>*Under certain conditions, this antibody has been shown to display activation-state specificity⁶. The dilution required to achieve activation-state specificity will vary, and should be optimized by the researcher.</i>						
Predicted M.W.:	~49 kDa. Higher m.w. species (~100 kDa) and intermediates also observed which reflect post-translational modification of the receptor ^{7,8} .						
Concentration:	See product label						
Purification:	Peptide Affinity						
Format:	PBS, 50% glycerol, 0.01% sodium azide						
Storage:	Store at -20°C <i>Shipping conditions may differ from the recommended storage temperature.</i>						
Immunogen:	Synthetic peptide derived from sequence near the amino-terminus of rat Dopamine Receptor (D ₁)						
Related Products:	<table border="0"> <tr> <td>SAB-300</td> <td>Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate</td> </tr> <tr> <td>900-066</td> <td>cAMP (direct) EIA Kit</td> </tr> <tr> <td>905-740-100</td> <td>Dopamine Receptor (D₂) Polyclonal Antibody</td> </tr> </table>	SAB-300	Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate	900-066	cAMP (direct) EIA Kit	905-740-100	Dopamine Receptor (D ₂) Polyclonal Antibody
SAB-300	Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate						
900-066	cAMP (direct) EIA Kit						
905-740-100	Dopamine Receptor (D ₂) Polyclonal Antibody						

Background:

Dopamine is the predominant catecholamine neurotransmitter in the mammalian brain, where it regulates locomotor, emotional, memory, and dietary intake functions, as well as peripheral roles such as hormone secretion and renal function¹. Dopamine receptors (D₁-D₅) are members of the seven transmembrane domain containing G-protein coupled receptor (GPCR) family A, and are the target of several anti-psychosis and anti-Parkinsonian drugs^{1,2}. The D₂, D₃, and D₄ dopamine receptors are encoded by homologous intron-containing genes, and signal via coupling of G_i/G_o alpha G-protein subunits to inhibit adenylyl cyclase activity, as well as modulate cellular ion channel conductance of K⁺ and Ca²⁺^{1,2}. This is in contrast to D₁ and D₅ dopamine receptors, which signal via G_s alpha subunits to activate adenylyl cyclase activity. Coactivation of D₁ and D₂ receptors has been shown to activate a G_q mediated pathway, stimulating phospholipase C (PLC) and mobilizing intracellular calcium stores³. D₁ receptors were initially characterized in the striatum and retina and are expressed throughout the brain in the olfactory tubercle, islands of Calleja, entopeduncular nucleus, neocortex, hippocampus, and amygdala^{4,5}. Expression of the D₂ receptor is found primarily in the brain (striatum, olfactory tubercle, and nucleus accumbens) and in the anterior and intermediate lobes of the pituitary^{1,4}.

References:

1. Missale, C. *et al.* (1998) *Physiol Rev.* **78**, 189-225.
2. Wettschureck, N. and Offermanns, S. (2005) *Physiol Rev.* **85**, 1159-1204.
3. Lee, S.P., *et al.* (2004) *J Biol Chem.* **279**, 35671-35678.
4. Levey, A., *et al.* (1993) *Proc Natl Acad Sci U.S.A.* **90**, 8861-8865.
5. Fremeau, R.T., *et al.* (1991) *Proc Natl Acad Sci U.S.A.* **88**, 3772-3776.
6. Gupta, A., *et al.* (2007) *J Biol Chem.* **282**, 5116-5124.
7. Lee, S.P., *et al.* (2000) *Neuropsychopharmacology* **23**, S32-40
8. Guo, W., *et al.* (2005) *Proc Natl Acad Sci USA* **102**, 17495-17500.



Visit the Scientific Resources section of our website for ELISA, IHC, and WB protocols.

Generally reagents are good for one year from the date of receipt, except for conjugates which are good for six months and reagents with an expiration date indicated on the label or other supporting document.

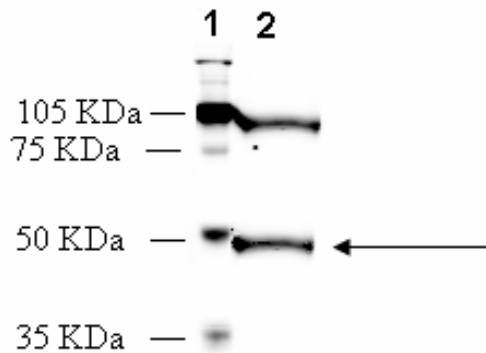
Assay Designs makes every effort to provide a consistent source of high quality polyclonal antibodies. However, due to variations inherent in this technology, investigators are urged to purchase sufficient quantities of a specific lot number if an identical antibody is required throughout a study.

(OVER)

FOR RESEARCH USE ONLY; NOT FOR THERAPEUTIC OR DIAGNOSTIC USE

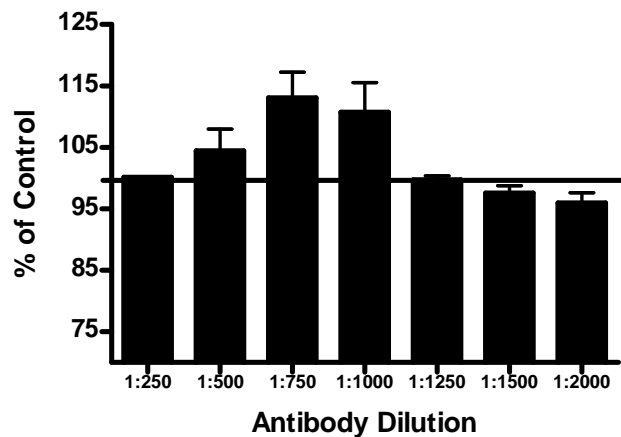
5777 Hines Drive • Ann Arbor, MI • 48108 | Tel: 800-833-8651 or 800-668-6113 | Fax: 734-668-2793
www.assaydesigns.com | orders@assaydesigns.com | technical@assaydesigns.com

Last Revised: 9-26-2008



Western Blot Analysis: MW marker (1) and 25 µg of rat brain membrane extract (2) probed with Dopamine Receptor (D₁) Polyclonal Antibody at 2.2 µg/mL.

Striatum Membranes



Membrane ELISA: Lewis rat striatum membranes (5 µg/well) were treated with 1 µM concentrations of agonist (SKF- 38393) and probed with Dopamine Receptor (D₁) Polyclonal Antibody (1:250 to 1:2000 of a 1 µg/µL stock solution) by ELISA. Data from vehicle treated cells were taken as 100%. Results are the mean ± SEM (n=3).