Product Datasheet

Dopamine D1R/DRD1 Antibody (SG2-D1a)
NB110-60017SS

Unit Size: 0.025 ml

Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.

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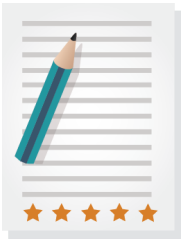
Updated 12/9/2024 v.20.1



NB110-60017SS

Dopamine D1R/DRD1 Antibody (SG2-D1a)

Product Information

Unit Size	0.025 ml
Concentration	1.0 mg/ml
Storage	Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.
Clonality	Monoclonal
Clone	SG2-D1a
Preservative	0.02% Sodium Azide
Isotype	IgG2b Kappa
Purity	Protein A purified
Buffer	PBS

Product Description

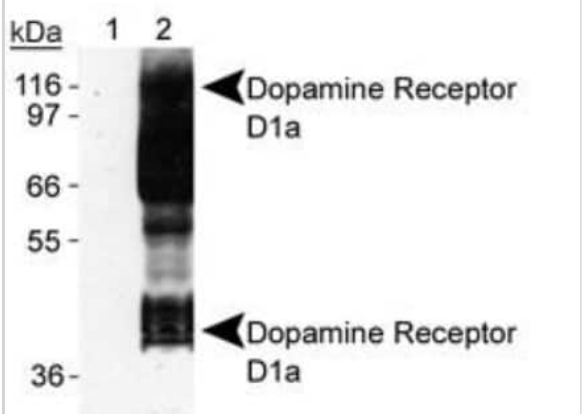
Host	Mouse
Gene ID	1812
Gene Symbol	DRD1
Species	Mouse, Rat, Bovine (Negative), Canine (Negative), Human (Negative), Porcine (Negative), Rabbit (Negative), Sheep (Negative)
Specificity/Sensitivity	This antibody is specific for Dopamine Receptor D1A. There is no cross-reactivity with D1B (D5) receptor.
Immunogen	Recombinant rat Dopamine Receptor D1 protein near the C-terminus. [Swiss-Prot# P18901]

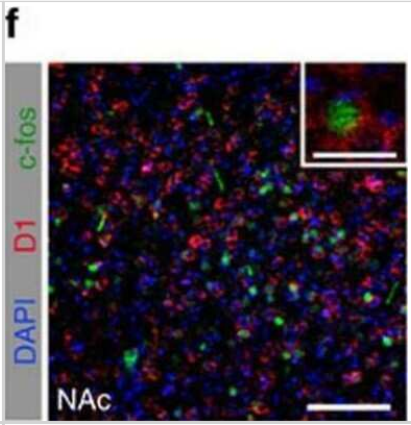
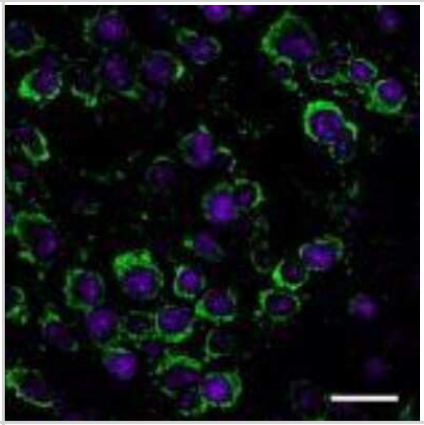
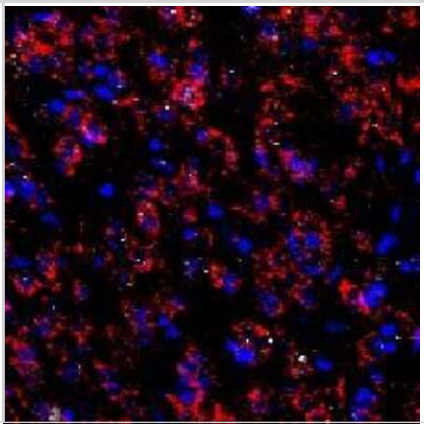
Product Application Details

Applications	Western Blot, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry Free-Floating
Recommended Dilutions	Western Blot 1:200-1:500, Immunohistochemistry 1:1000, Immunocytochemistry/ Immunofluorescence reported in scientific literature (PMID 31462765), Immunohistochemistry-Frozen 1:1000, Immunohistochemistry Free-Floating
Application Notes	In Western blot multiple bands are seen around 45 and 100 kDa (dimer) in SF9 cell lysates overexpressing D1a and a single band at 90 kDa in striatal tissue lysate. Do NOT boil samples.

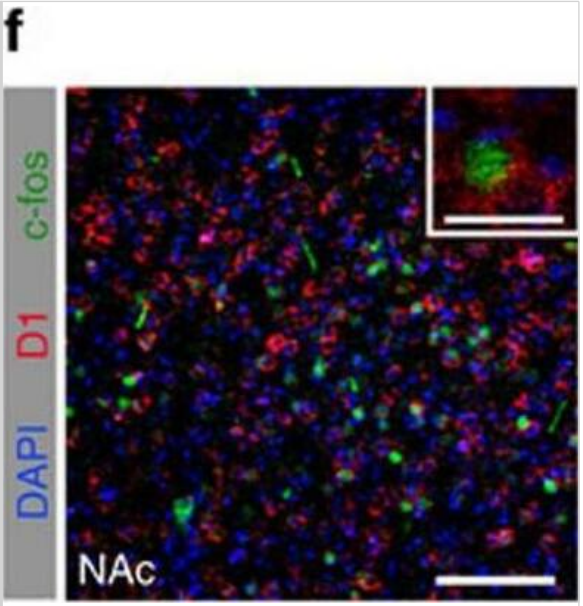
Images

Western Blot: Dopamine D1R/DRD1 Antibody (SG2-D1a) [NB110-60017] - Analysis of lysates from Sf9 cells which were transfected with rat DR-D1b (Lane 1) or DR-D1a (Lane 2) using DRD1 antibody (clone SG2-D1a). This clone detected D1a receptor only and was not cross-reactive against DR-D1b (Note: these results are similiar to those shown in J. Neuroimmunol. 101:170-187 publication.)



Immunohistochemistry: Dopamine D1R/DRD1 Antibody (SG2-D1a) [NB110-60017] - Representative images of immunofluorescence for c-fos and dopamine receptor D1 in the NAc. Image collected and cropped by CiteAb from the following publication (nature.com/articles/ncomms11829), licensed under a CC-BY license.	
Immunohistochemistry: Dopamine D1R/DRD1 Antibody (SG2-D1a) [NB110-60017] - Dopamine D1 R/DRD1 Antibody (SG2-D1a) [NB110-60017] - Analysis of Dopamine Receptor D1 in rat retinal whole mounts and sections. Image from verified customer review.	
Immunohistochemistry Free-Floating: Dopamine D1R/DRD1 Antibody (SG2-D1a) [NB110-60017] - Dopamine D1 R/DRD1 Antibody (SG2-D1a) [NB110-60017] - Analysis of Dopamine D1 R in free floating rat brain slices using Dopamine D1 R antibody. Image from verified customer review.	

Immunocytochemistry/ Immunofluorescence: Dopamine D1R/DRD1 Antibody (SG2-D1a) [NB110-60017] - NAc D1 & D2 neuronal activation predicts performance in motivation-related tasks.(a) PIT outcome (n=10). (b) Breakpoint for two PR sessions (n=10). (c) Representative immunostaining of c-fos in the NAc; Scale bar: 100 µm; inset: 20 µm. (d) Animals performing PIT or PR tests have increased c-fos+ cells in the NAc (n=6). (e) Principal factor analysis was done to evaluate the contribution of each brain region for the behavioural performance. This analysis shows that the NAc core & shell regions (NAcc & NAcs; factor 2) are grouped distinctively from other limbic regions (BLA, CeA & VTA; factor 3) & from cortical regions that are all grouped together in factor 1 (ACC, PLC, ILC, lOFC & vOFC). Representative images of immunofluorescence for c-fos & dopamine receptor D1 (f) or c-fos & dopamine receptor D2 (i) in the NAc of animals that performed PR task; Scale bar: 100 µm; inset: 20 µm. Insets represent double positive cells. (g) Number of c-fos+/D1+ cells & c-fos+/D2+ (j) cells in the NAc (n=6). (h) Correlation between individual Breakpoint & number of c-fos+/D1+ cells in the NAc (n=9). (k) Correlation between individual breakpoint & number of c-fos+/D2+ cells in the NAc (n=12). Error bars denote s.e.m. *P≤0.05, **P ≤0.01, ***P≤0.001. Image collected & cropped by CiteAb from the following publication (https://www.nature.com/articles/ncomms11829), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Struzyna LA, Browne KD, Burrell JC et al. Axonal Tract Reconstruction Using a Tissue-Engineered Nigrostriatal Pathway in a Rat Model of Parkinson's Disease International Journal of Molecular Sciences 2022-11-12 [PMID: 36430464] (Immunohistochemistry, Immunocytochemistry/ Immunofluorescence)

Shen B, Zhang R, Yang G et al. Cannabidiol prevents methamphetamine-induced neurotoxicity by modulating dopamine receptor D1-mediated calcium-dependent phosphorylation of methyl-CpG-binding protein 2 Frontiers in Pharmacology 2022-09-06 [PMID: 36147353]

He ZX, Xi K, Liu KJ et al. A Nucleus Accumbens Tac1 Neural Circuit Regulates Avoidance Responses to Aversive Stimuli International journal of molecular sciences 2023-02-22 [PMID: 36901777] (IHC-Fr, Mouse)

Smith CJ, Lintz T, Clark MJ et al. Prenatal opioid exposure inhibits microglial sculpting of the dopamine system selectively in adolescent male offspring Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology 2022-07-14 [PMID: 35835992] (KO, IHC-Fr, Rat)

Kasahara Y, Masukawa D, Kobayashi K et al. L-DOPA-induced Neurogenesis in the Hippocampus is Mediated through GPR143, a Distinct Mechanism of Dopamine Stem Cells 2022-01-19 [PMID: 35257172] (IF/IHC, Mouse)

Kisling A, Byrne S, Parekh RU Et al. Loss of Function in Dopamine D3 Receptor Attenuates Left Ventricular Cardiac Fibroblast Migration and Proliferation in vitro Frontiers in cardiovascular medicine 2021-10-11 [PMID: 34708087] (IF/IHC, ICC/IF, Mouse)

Bourgeois JR, Kalyanasundaram G, Figueroa C et al. A semi-automated brain atlas-based analysis pipeline for c-Fos immunohistochemical data J Neurosci Methods 2020-10-20 [PMID: 33091429] (IF/IHC, Rat)

Coimbra B, Soares-Cunha C, Vasconcelos NAP et al. Role of laterodorsal tegmentum projections to nucleus accumbens in reward-related behaviors Nat Commun 2019-09-12 [PMID: 31515512] (IF/IHC, Mouse, Rat)

Soares-Cunha C, de Vasconcelos NAP, Coimbra B et al. Nucleus accumbens medium spiny neurons subtypes signal both reward and aversion Mol. Psychiatry 2019-08-28 [PMID: 31462765] (ICC/IF, Mouse)

Kopec A, Smith CJ, Ayre NR et al. Microglial elimination of dopamine D1 receptors defines sex-specific changes in nucleus accumbens development and social play behavior during adolescence bioRxiv 2017 Oct 29 [PMID: 30254300] (IHC-Fr, Rat)

Kopec A, Smith CJ, Ayre NR et al. Microglial dopamine receptor elimination defines sex-specific nucleus accumbens development and social behavior in adolescent rats. Nat Commun 2017 Oct 29 [PMID: 30254300] (IHC-Fr, Rat)

Soares-Cunha C, Coimbra B, Domingues A et al. Nucleus Accumbens Microcircuit Underlying D2-MSN-Driven Increase in Motivation. eNeuro 2018-04-19 [PMID: 29780881] (ICC/IF, Rat)

More publications at http://www.novusbio.com/NB110-60017

Procedures

Western Blot Protocol for Dopamine Receptor D1 Antibody (NB110-60017)

Western Blot Protocol1. Perform SDS-PAGE (4-12% MOPS) on samples to be analyzed, loading 20 ug of total protein per lane.
2. Transfer proteins to Nitrocellulose according to the instructions provided by the manufacturer of the transfer apparatus.
3. Rinse membrane with dH2O and then stain the blot using Ponceau S for 1-2 minutes to access the transfer of proteins onto the nitrocellulose membrane. Rinse the blot in water to remove excess stain and mark the lane locations and locations of molecular weight markers using a pencil.
4. Rinse the blot in TBS for approximately 5 minutes.
5. Block the membrane using 5% non-fat dry milk + 1% BSA in TBS, 1 hour at room temperature.
6. Rinse the membrane in dH2O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
7. Dilute the mouse anti-Dopamine Receptor D1a primary antibody (NB 110-60017) in blocking buffer and incubate 1 hour at room temperature.
8. Rinse the membrane in dH2O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
9. Apply the diluted mouse-IgG HRP-conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
10. Wash the blot in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions (Pierce, ECL).

Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%, provided it does not interfere with antibody-antigen binding.

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