

Product Datasheet

SHANK1 Antibody - BSA Free NB300-167

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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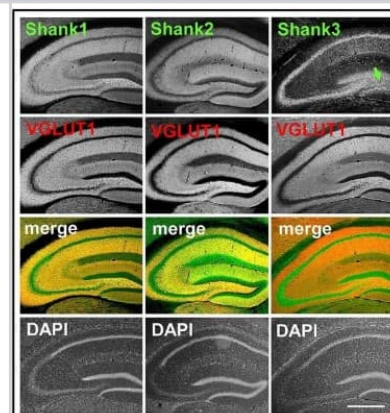
NB300-167

SHANK1 Antibody - BSA Free

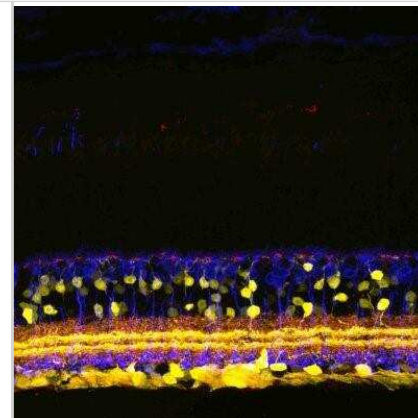
Product Information	
Unit Size	0.1 ml
Concentration	1 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Product Description	
Host	Rabbit
Gene ID	50944
Gene Symbol	SHANK1
Species	Human, Mouse, Rat
Reactivity Notes	Human, rat and mouse. Other species have not been tested.
Specificity/Sensitivity	Reacts with residues [SGPIYPGLFDIRSS] of the C-terminus of the SHANK1 protein.
Immunogen	residues [SGPIYPGLFDIRSS] of the C-terminus of the SHANK1 protein.
Product Application Details	
Applications	Western Blot, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin
Recommended Dilutions	Western Blot 1:500-1:1000, Immunohistochemistry 1:250-1:750, Immunocytochemistry/ Immunofluorescence 1:800, Immunohistochemistry-Paraffin 1:250-1:750
Application Notes	This antibody is useful for Western blot, immunohistochemistry-Paraffin, and immunohistochemistry. The IF has been used at 1:800 on mouse G57B6

Images

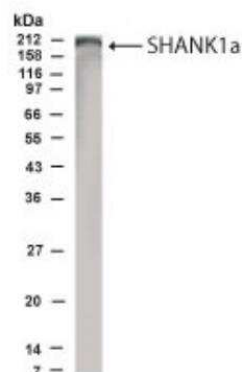
Immunohistochemistry: SHANK1 Antibody [NB300-167] - Synaptic distribution of Shank1/2 and somato-synaptic distribution of Shank3 in the mouse hippocampus, codistribution with VGLUT1, no codistribution with VGLUT2. 5x magnification of hippocampus. Immunofluorescence stainings of coronal sections from wild-type mice probed with Shank1-3 (white; green in merge) and VGLUT1 (white; red in merge) antibodies; green arrow points toward the intragranular mossy fibers where there is a prominent synaptic stain of Shank3; scale bar =300 um. Image collected and cropped by CiteAb from the following publication (<https://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>) licensed under a CC-BY license.



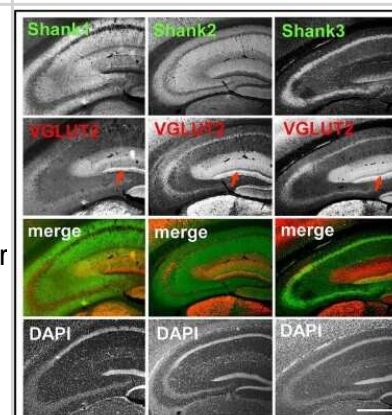
Immunohistochemistry: SHANK1 Antibody [NB300-167] - Mouse retina using NB300-167.



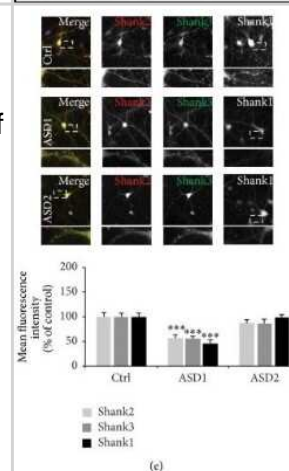
Western Blot: SHANK1 Antibody [NB300-167] - Shank1a in rat brain lysate using NB300-167 at 1:500 dilution.



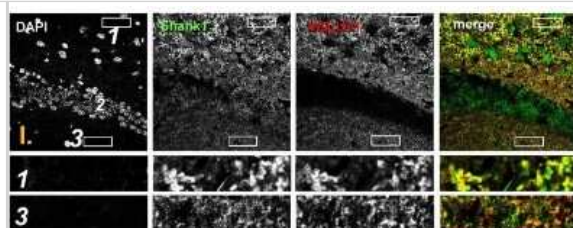
Immunohistochemistry: SHANK1 Antibody [NB300-167] - Synaptic distribution of Shank1/2 and somato-synaptic distribution of Shank3 in the mouse hippocampus, codistribution with VGLUT1, no codistribution with VGLUT2. Immunofluorescence stainings of coronal sections from wild-type mice probed with Shank1-3 (white; green in merge) and VGLUT2 (white; red in merge) antibodies; green arrow points toward the intragranular mossy fibers where there is a prominent synaptic stain of Shank3. Red arrow points toward the VGLUT2-band of the DG; scale bar = 300 μ m. Image collected and cropped by CiteAb from the following publication (<https://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>) licensed under a CC-BY license.



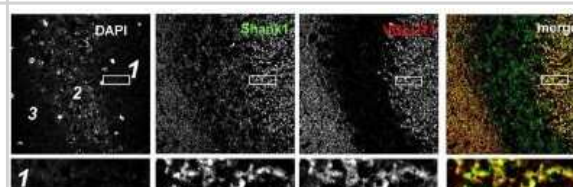
Immunocytochemistry/Immunofluorescence: SHANK1 Antibody [NB300-167] - An ASD biometal profile affects cell health and synapse numbers in vitro. Immunocytochemistry of hippocampal neurons DIV 14 grown under control, ASD1, and ASD2 conditions. The fluorescence intensity of Shank positive puncta was measured using antibodies specific for Shank1, Shank2, and Shank3. Exemplary images (upper panel) and quantification of average puncta signal intensity of 10 cells per condition (lower panel). Merged images show additional DAPI staining of the nucleus. Neurons grown under ASD1 conditions show a significant decrease of synaptic Shank proteins, while neurons under ASD2 conditions did not show a reduction. Image collected and cropped by CiteAb from the following publication (<https://www.hindawi.com/journals/np/2015/985083/>), licensed under a CC-BY license.



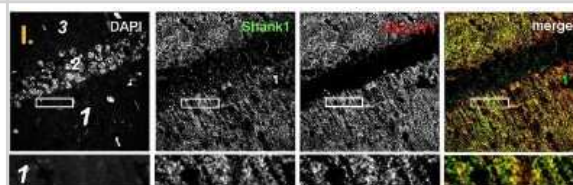
Immunohistochemistry: SHANK1 Antibody [NB300-167] - Colocalization of Shank puncta with VGLUT1 puncta in the intragranular mossy fibers and the stratum moleculare of the dentate gyrus. Confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1 (white; green in merge) and VGLUT1 (white; red in merge) antibodies. The upper rows (large squares) show the enlarged region (3 = SM; 2 = SG; 1 = PL; scale bar = 100 um), the bottom rows (small rectangles) show further enlargements (indicated in upper row by white rectangles) in the PL (1, top row) and SM (3, bottom row) (scale bar = 5 um). Image collected and cropped by CiteAb from the following publication (<https://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>) licensed under a CC-BY license.



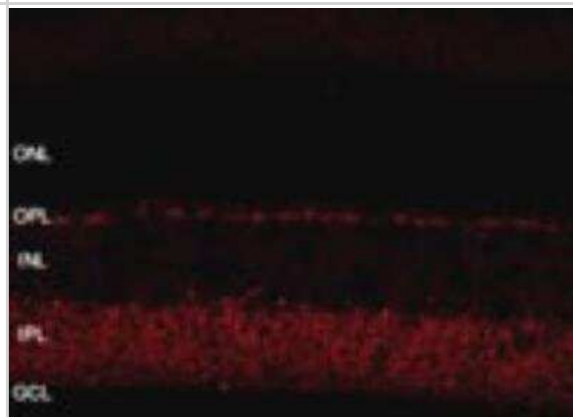
Immunocytochemistry/Immunofluorescence: SHANK1 Antibody [NB300-167] - Colocalization of Shank immunoreactivity with VGLUT1 in the stratum radiatum/stratum lucidum of the CA3 region. confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1 (white; green in merge) and VGLUT1 (white; red in merge) antibodies. The upper row (large squares) shows the enlarged region (3 = SO; 2 = SP; 1 = SR; scale bar = 100 um), the bottom row (small rectangles) shows a further enlargement (indicated in upper row by white rectangle) in the SR (scale bar = 5 um). Image collected and cropped by CiteAb from the following publication (<https://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>) licensed under a CC-BY license.



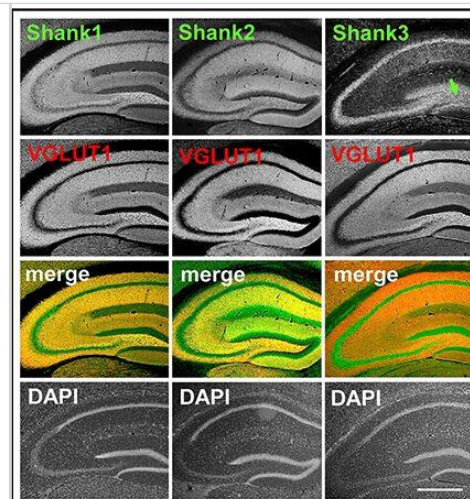
Immunohistochemistry: SHANK1 Antibody [NB300-167] - Colocalization of Shank puncta with VGLUT1 puncta in the stratum radiatum of the CA1. confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1 (white; green in merge) and VGLUT1 (white; red in merge) antibodies. The upper row (large squares) shows the enlarged region (3 = SO; 2 = SP; 1 = SR; scale bar = 100 um), the bottom row (small rectangles) shows a further enlargement (indicated in upper row by white rectangle) in the SR (scale bar = 5 um). Image collected and cropped by CiteAb from the following publication (<https://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>) licensed under a CC-BY license.



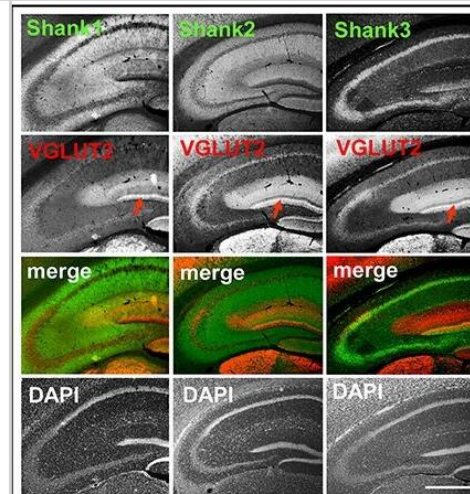
Immunohistochemistry: SHANK1 Antibody [NB300-167] - Retinal tissue using NB300-167 at 1:800 dilution. Images are 2048 X 2048, 12 bit, collected with a 40X water objective, 10 stacks 0.55 um per stack.



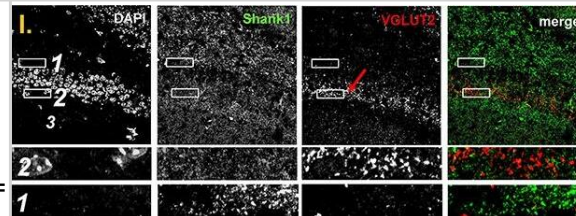
Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - Synaptic distribution of Shank1/2 & somato-synaptic distribution of Shank3 in the mouse hippocampus, codistribution with VGLUT1, no codistribution with VGLUT2. Top box: 5x magnification of hippocampus. Immunofluorescence stainings of coronal sections from wild-type mice probed with Shank1-3 (white; green in merge) & VGLUT1 (white; red in merge) antibodies; green arrow points toward the intragranular mossy fibers where there is a prominent synaptic stain of Shank3; scale bar = 300 μ m. Bottom box: same stainings as top box but with the VGLUT2 antibody (white; red in merge). Red arrow points toward the VGLUT2-band of the DG; scale bar = 300 μ m. Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



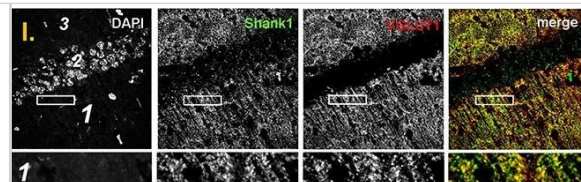
Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - Synaptic distribution of Shank1/2 & somato-synaptic distribution of Shank3 in the mouse hippocampus, codistribution with VGLUT1, no codistribution with VGLUT2. Top box: 5x magnification of hippocampus. Immunofluorescence stainings of coronal sections from wild-type mice probed with Shank1-3 (white; green in merge) & VGLUT1 (white; red in merge) antibodies; green arrow points toward the intragranular mossy fibers where there is a prominent synaptic stain of Shank3; scale bar = 300 μ m. Bottom box: same stainings as top box but with the VGLUT2 antibody (white; red in merge). Red arrow points toward the VGLUT2-band of the DG; scale bar = 300 μ m. Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



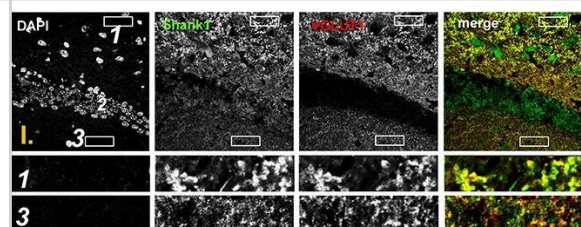
Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - No colocalization of Shank puncta with VGLUT2 puncta in the VGLUT2-band nor in the intragranular mossy fibers of the dentate gyrus. Top box: Schematic overview of hippocampus with enlarged region (yellow square; here: dentate Gyrus = DG, containing stratum granulare = SG, stratum moleculare = SM, & polymorphic layer = PL; 1. indicates uppermost row/figure in bottom box). Bottom box: confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1-3 (white; green in merge), & VGLUT2 (white; red in merge) antibodies. The upper rows (large squares) show the enlarged region (3 = SM; 2 = SG; 1 = PL; scale bar = 100 μ m), the bottom rows (small rectangles) show further enlargements (indicated in upper row by white rectangles) in the outer part of the SG (2, top row) & in the PL (1, bottom row) (scale bar = 5 μ m). Red arrows indicate VGLUT2-band. Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



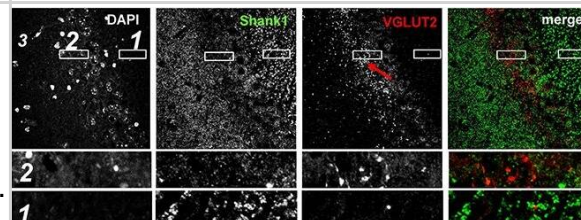
Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - Colocalization of Shank puncta with VGLUT1 puncta in the stratum radiatum of the CA1. Top box: Schematic overview of hippocampus with enlarged region (yellow square; here: CA1 containing stratum pyramidale = SP, stratum oriens = SO & stratum radiatum = SR; I./II./III. indicates uppermost/middle/bottom figure in bottom box). Bottom box: confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1-3 (white; green in merge) & VGLUT1 (white; red in merge) antibodies. The upper row (large squares) shows the enlarged region (3 = SO; 2 = SP; 1 = SR; scale bar = 100 μ m), the bottom row (small rectangles) shows a further enlargement (indicated in upper row by white rectangle) in the SR (scale bar = 5 μ m). Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



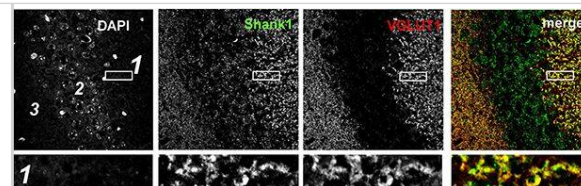
Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - Colocalization of Shank puncta with VGLUT1 puncta in the intragranular mossy fibers & the stratum moleculare of the dentate gyrus. Top box: Schematic overview of hippocampus with enlarged region (yellow square; here: dentate Gyrus = DG, containing stratum granulare = SG, stratum moleculare = SM, & polymorphic layer = PL; I. indicates uppermost row/figure in bottom box). Bottom box: confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1-3 (white; green in merge) & VGLUT1 (white; red in merge) antibodies. The upper rows (large squares) show the enlarged region (3 = SM; 2 = SG; 1 = PL; scale bar = 100 μ m), the bottom rows (small rectangles) show further enlargements (indicated in upper row by white rectangles) in the PL (1, top row) & SM (3, bottom row) (scale bar = 5 μ m). Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - No colocalization of Shank immunoreactivity with VGLUT2 puncta in the VGLUT2-band of the stratum pyramidale nor in the mossy fibers of the CA3. Top box: Schematic overview of hippocampus with enlarged region (yellow square; here: CA3 containing stratum pyramidale = SP, stratum oriens = SO & stratum radiatum = SR). Bottom box: confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1-3 (white; green in merge) & VGLUT2 (white; red in merge) antibodies. The upper row (large squares) shows the enlarged region (3 = SO; 2 = SP; 1 = SR; scale bar = 100 μ m), the bottom row (small rectangles) shows further enlargements (indicated in upper row by white rectangles) in the lateral part of the SP (2, top row) & the SR (1, bottom row) (scale bar = 5 μ m). Red arrows indicate VGLUT2-band. Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: SHANK1 Antibody - BSA Free [NB300-167] - Colocalization of Shank immunoreactivity with VGLUT1 in the stratum radiatum/stratum lucidum of the CA3 region. Top box: Schematic overview of hippocampus with enlarged region (yellow square; here: CA3 containing stratum pyramidale = SP, stratum oriens = SO & stratum radiatum = SR). Bottom box: confocal immunofluorescence stainings of coronal sections from wild-type mice probed with the Shank1-3 (white; green in merge) & VGLUT1 (white; red in merge) antibodies. The upper row (large squares) shows the enlarged region (3 = SO; 2 = SP; 1 = SR; scale bar = 100 μ m), the bottom row (small rectangles) shows a further enlargement (indicated in upper row by white rectangle) in the SR (scale bar = 5 μ m). Image collected & cropped by CiteAb from the following publication (<http://journal.frontiersin.org/Article/10.3389/fncel.2016.00106/abstract>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Dong Z, Chen W, Chen C et al. CUL3 Deficiency Causes Social Deficits and Anxiety-like Behaviors by Impairing Excitation-Inhibition Balance through the Promotion of Cap-Dependent Translation Neuron 2019-11-21 [PMID: 31780330]

Baczyk M, Alami NO, Delestree N et al. Synaptic restoration by cAMP/PKA drives activity-dependent neuroprotection to motoneurons in ALS J. Exp. Med. 2020-08-03 [PMID: 32484501] (ICC/IF, Mouse)

Wolstenholme JT, Drobna Z, Henriksen AD et al. Transgenerational Bisphenol A causes deficits in social recognition and alters post-synaptic density genes in mice Endocrinology 2019-06-12 [PMID: 31188430] (Mouse)

Kerrisk Campbell M, Sheng M. USP8 Deubiquitinates SHANK3 to Control Synapse Density and SHANK3 Activity-dependent Protein Levels J. Neurosci. 2018-05-07 [PMID: 29735556] (WB, Mouse)

Heise C, Schroeder JC, Schoen M et al. Selective Localization of Shanks to VGLUT1-Positive Excitatory Synapses in the Mouse Hippocampus. Front Cell Neurosci. 2016-05-20 [PMID: 27199660] (ICC/IF, WB, Rat, Mouse)

Hagmeyer S, Mangus K, Boeckers TM. Effects of Trace Metal Profiles Characteristic for Autism on Synapses in Cultured Neurons Neural Plasticity. 2015-02-19 [PMID: 25802764] (ICC/IF, Rat)

Details:

SHANK1 antibody was used for ICC-IF staining of Rat brain cultured hippocampal neurons grown under 3 different conditions (i) control cells/Ctrl grown in Neurobasal medium (ii) ASD1 cells grown in Neurobasal medium with addition of putative toxic metals 0.5 μ M Cd, Cu, Hg, and 2 μ M Pb (iii) ASD2 cells grown in trace metal depleted Neurobasal medium that was reconstituted only for Mg and Ca, with addition of the putative toxic metals as mentioned for ASD1 conditions. For ICC-IF assay, the cells were - fixed in 4% PFA/1.5% sucrose/PBS at 4C for 20 minutes, permeabilized 2X5 minutes with PBS having 0.2% Triton X-100 which followed blocking with 10% FBS/PBS for 1 hour at RT, incubated with primary antibody for 2 hours at RT followed by 1 hour incubation with Alexa conjugated secondary antibody and counterstained with DAPI (Figure 3).

Schmeisser MJ, Ey E, Wegener S, Bockmann J et al. Autistic-like behaviours and hyperactivity in mice lacking ProSAP1/Shank2. Nature 2012-01-01 [PMID: 22699619] (WB, Mouse)

Procedures

Immunocytochemistry/Immunofluorescence protocol for SHANK1 Antibody (NB300-167)

SHANK1 Antibody:

Immunofluorescence

Stained Species: Mouse C57B6

Fixation: 15 minute 4% paraformaldehyde fixation

Antibody dilution: 1:800 overnight.

Secondary dilution: Alexa 568 1:500 for 45 minutes

Tissue preparation: Blocked for 2 hrs at room temp in 10% normal goat serum and Triton X-100 (0.5%) in 0.1 M Phosphate buffered saline (PBS)

Washed: 3X 0.1 M PBS between primary and secondary step. Mounted tissue with Paramount.

Confocal: Images are 2048 X 2048, 12 bit, collected with a 40X water objective, 10 stacks 0.55 um per stack





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Products Related to NB300-167

HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control
NBP2-33971PEP	SHANK1 Recombinant Protein Antigen

Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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