Product Datasheet

TLR7 Antibody - BSA Free
NBP2-24906

Unit Size: 0.1 mg

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

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Reviews: 4 Publications: 82

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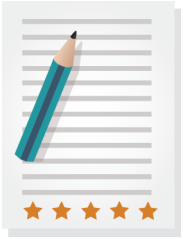
Updated 11/18/2025 v.20.1



NBP2-24906

TLR7 Antibody - BSA Free

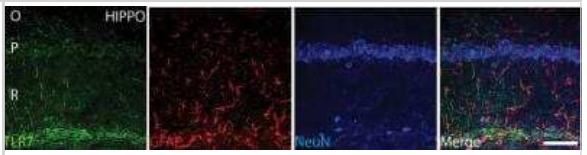
Product Information	
Unit Size	0.1 mg
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS

Product Description	
Description	Novus Biologicals Rabbit TLR7 Antibody - BSA Free (NBP2-24906) is a polyclonal antibody validated for use in IHC, WB, Flow, ICC/IF, Simple Western and IP. Anti-TLR7 Antibody: Cited in 81 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	51284
Gene Symbol	TLR7
Species	Human, Mouse, Rat
Reactivity Notes	Use in Human reported in scientific literature (PMID:33806288).
Immunogen	Partial synthetic peptide made to an internal portion of the human TLR7 protein (between amino acids 700-750) [UniProt 9NYK1]

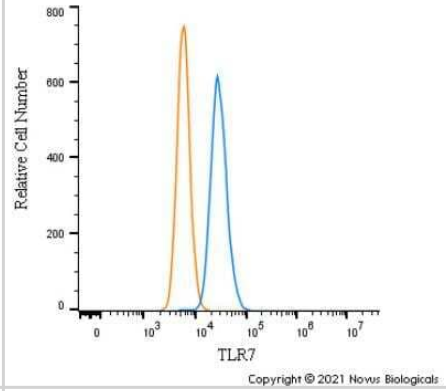
Product Application Details	
Applications	Western Blot, Simple Western, Immunohistochemistry-Paraffin, Dot Blot, Flow Cytometry, Flow (Intracellular), Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunoprecipitation, Proximity Ligation Assay, Bioactivity
Recommended Dilutions	Western Blot 1-3 ug/ml, Simple Western 1:20, Flow Cytometry 2-5 ug/ 1x10^6 cells, Immunohistochemistry 1:200. Use reported in scientific literature (PMID 28219705), Immunocytochemistry/ Immunofluorescence 1:10-1:2000, Immunoprecipitation reported in scientific literature (PMID 17452530), Immunohistochemistry-Paraffin 1:200. Use reported in scientific literature (PMID 25264223), Immunohistochemistry-Frozen 1:10-1:2000. Use reported by customer review, Proximity Ligation Assay reported in scientific literature (PMID 30579042), Dot Blot reported in scientific literature (PMID 27248820), Flow (Intracellular), Bioactivity reported in scientific literature (PMID 28894449)

Images

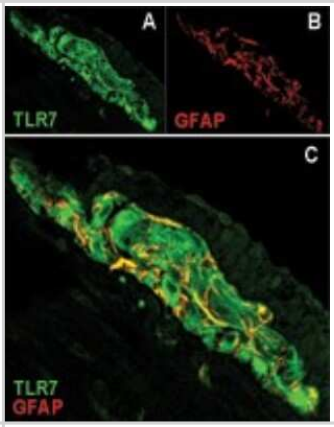
Immunohistochemistry: TLR7 Antibody [NBP2-24906] - The expression of TLR-7 in the hippocampal brain region. The immunofluorescence of TLR7 recognized by Alexa 488, green. GFAP recognized by Alexa 594, red. NEUN recognized by Alexa 633, (blue) and merged image in the hippocampal region. NeuN and GFAP were applied to show the distribution of TLR7 within neuronal and supportive tissue populations. Scale bar 80 um. Image collected and cropped by CiteAb from the following publication (//doi.org/10.1371/journal.pone.0222818) licensed under a CC-BY license.



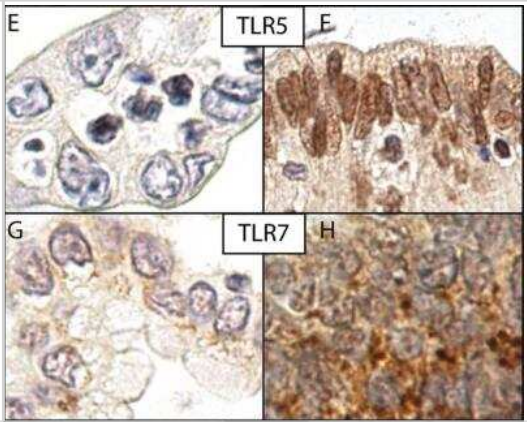
Flow Cytometry: TLR7 Antibody [NBP2-24906] - An intracellular stain was performed on THP-1 cells with NBP2-24906 (blue) and a matched isotype control NBP2-24891 (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 1 ug/mL for 30 minutes at room temperature, followed by Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Dylight 550 (SA5-10033, Thermo Fisher).

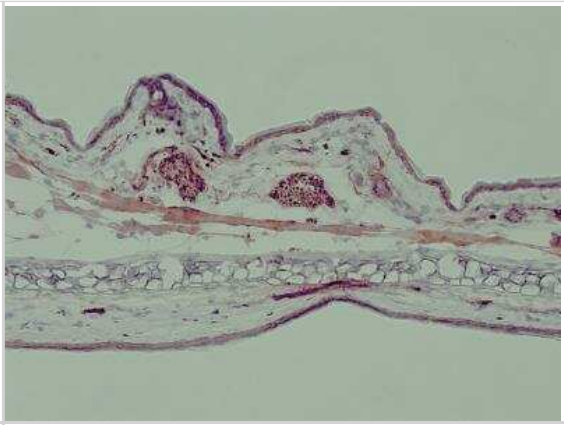
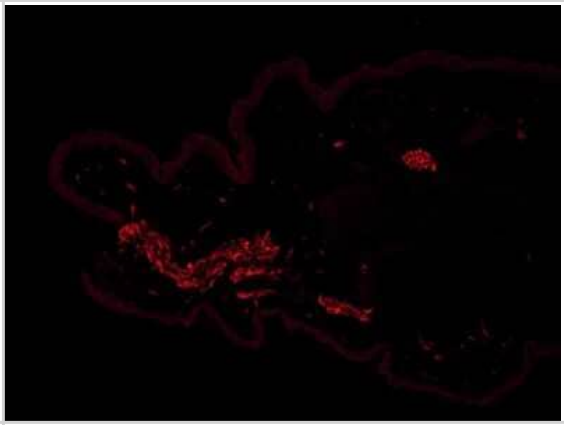
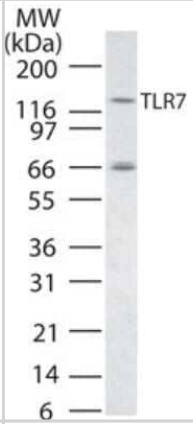
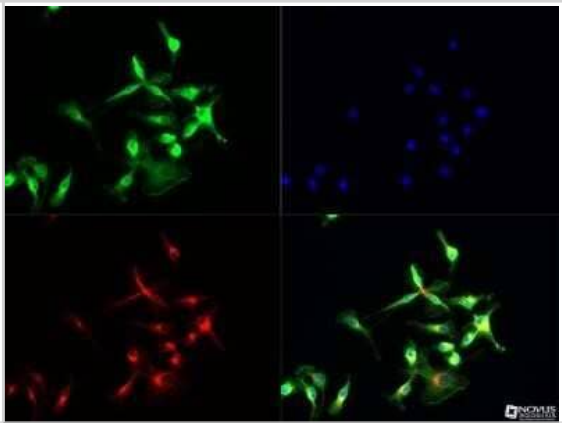


Immunocytochemistry/Immunofluorescence: TLR7 Antibody [NBP2-24906] - Immunolocalization of TLR7 (A) and glial fibrillary acidic protein (GFAP) (B) in murine myenteric plexus. Most of the GFAP positive cells were also positive for TLR7 in the merged image (C, yellow staining). (Courtesy of Barajon I, et al., Journal of Histochemistry and Cytochemistry, 57(11): 1013-;1023, 2009.)

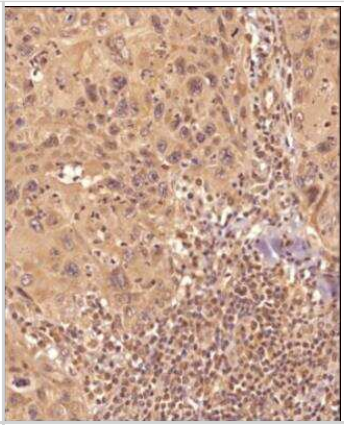


Immunohistochemistry: TLR7 Antibody [NBP2-24906] - Expression of the TLRs 5 and 7 were evaluated in the PDAC tissue by their staining intensity using TLR5 antibody (NBP2-24787) and TLR7 antibody (NBP2-24906). Note negative staining in E and G; positive staining in F and H. For TLR7 immunopositivity was detectable in the cytoplasm with no notable membranous or nuclear positivity. TLR5 showed distinctive nuclear positivity, and detectable positivity in the cytoplasm in some samples. Image collected and cropped by CiteAb from the following publication (//doi.org/10.1371/journal.pone.0219245) licensed under a CC-BY license.

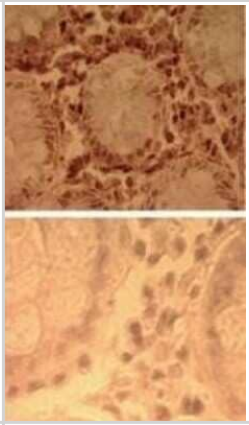


Immunohistochemistry-Frozen: TLR7 Antibody [NBP2-24906] - analysis of frozen mouse ear skin tissue using anti-TLR7 antibody. Image from verified customer review.	
Immunohistochemistry-Frozen: TLR7 Antibody [NBP2-24906] - analysis of TLR7 in acetone-fixed, frozen mouse ear skin section using anti-TLR7 antibody. Image from verified customer review.	
Western Blot: TLR7 Antibody [NBP2-24906] - Analysis using the Azide Free version of NBP2-24906. Detection of TLR7 in RAW cell lysate using this antibody.	
Immunocytochemistry/Immunofluorescence: TLR7 Antibody [NBP2-24906] - Analysis using the Azide Free version of NBP2-24906. Staining of Raw 246.7 cells with Dylight 488 (green). Nuclei and alpha-tubulin were counterstained with DAPI (blue) and Dylight 550 (red). Image objective 40x. An antibody dilution of 1:10 was used.	

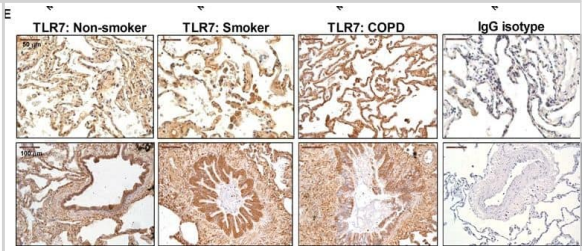
Immunohistochemistry-Paraffin: TLR7 Antibody - BSA Free [NBP2-24906] - Analysis of a FFPE tissue section of human skin using 1:200 dilution of TLR7 antibody (NBP2-24906). The staining was developed using HRP labeled anti-rabbit secondary antibody and DAB reagent, and nuclei of cells were counter-stained with hematoxylin.



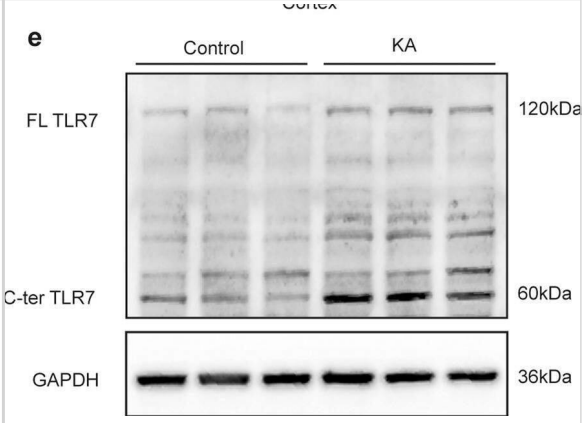
Immunohistochemistry-Paraffin: TLR7 Antibody - BSA Free [NBP2-24906] - Analysis of human colon tissue using NBP2-24905 (top) and an isotype control (bottom) at 5 ug/ml.



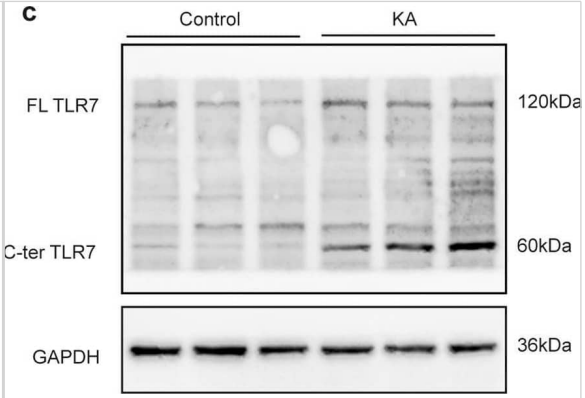
Immunohistochemistry: TLR7 Antibody - BSA Free [NBP2-24906] - Expression of TLR7 in lung tissues of non-smokers, smokers, & COPD patients. Total protein & mRNA were obtained from lung tissues of non-smokers (n = 15), smokers (n = 12), & COPD patients (n = 15). TLR7 protein & mRNA expression were determined by western blot (A) & real time PCR (B) in lung parenchyma. (A) Representative images of western blot for TLR7 & corresponding densitometry expressed as ratio to β-actin. (B) TLR7 mRNA expression given as the ratio to GAPDH. (C, D, E) Lung sections were immunostained for TLR7 & quantified by means of immunohistochemical score of TLR7 in alveolar macrophages (C) & bronchial epithelial cells (D). (E) Representative immunohistochemistry images are shown. The control IgG isotype showed negative staining. Data are presented as individual values & mean ± standard deviation. Exact P values were obtained using Kruskal-Wallis & Dunn's post-hoc tests. Image collected & cropped by CiteAb from the following publication (https://respiratory-research.biomedcentral.com/articles/10.1186/s12931-015-0179-5), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Expression of TLR7 in brain tissues at different time points after induction of status epilepticus.Quantitative real-time PCR analysis of the expression of TLR7 mRNA in the hippocampus (a) and cortex (b) at different time points after induction of SE (n = 3). ns not significant; *P < 0.05; ****P < 0.0001; one-way ANOVA with Tukey's post hoc test. Bars represent the mean +/- SEM. The expression of FL-TLR7 and C-terminal TLR7 in the hippocampus (c, d) and temporal cortex (e, f) on the third day after induction of SE by intrahippocampal injection with KA were both significantly higher than that of the control group (n = 9 mice per group). **P < 0.01; unpaired two-tailed Student's t-test. Bars represent the mean +/- SEM. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/37258573), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Expression of TLR7 in brain tissues at different time points after induction of status epilepticus.Quantitative real-time PCR analysis of the expression of TLR7 mRNA in the hippocampus (a) and cortex (b) at different time points after induction of SE (n = 3). ns not significant; *P < 0.05; ****P < 0.0001; one-way ANOVA with Tukey's post hoc test. Bars represent the mean +/- SEM. The expression of FL-TLR7 and C-terminal TLR7 in the hippocampus (c, d) and temporal cortex (e, f) on the third day after induction of SE by intrahippocampal injection with KA were both significantly higher than that of the control group (n = 9 mice per group). **P < 0.01; unpaired two-tailed Student's t-test. Bars represent the mean +/- SEM. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/37258573), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Meng Y, Ma J, Yao C et Al. The NCF1 variant p.R90H aggravates autoimmunity by facilitating the activation of plasmacytoid dendritic cells J Clin Invest 2022-08-15 [PMID: 35788118]

Min KW, Choi KM, Mun H et Al. Mature microRNA-binding protein QKI suppresses extracellular microRNA let-7b release J Cell Sci 2024-11-01 [PMID: 39308343]

Caccuri F, Messali S, Bortolotti D et al. Competition for dominance within replicating quasispecies during prolonged SARS-CoV-2 infection in an immunocompromised host Virus Evolution 2022-06-14 [PMID: 35706980] (Immunoprecipitation, Western Blot, Block/Neutralize)

Marie Rouanet, Naima Hanoun, Hubert Lulka, Cindy Ferreira, Pierre Garcin, Martin Sramek, Godefroy Jacquemin, Agnès Coste, Delphine Pagan, Carine Valle, Emeline Sarot, Vera Pancaldi, Frédéric Lopez, Louis Buscail, Pierre Cordelier The antitumoral activity of TLR7 ligands is corrupted by the microenvironment of pancreatic tumors. Molecular therapy : the journal of the American Society of Gene Therapy 2022-04-11 [PMID: 35038581]

Liu G, Haw TJ, Starkey MR et al. TLR7 promotes smoke-induced experimental lung damage through the activity of mast cell tryptase Nature communications 2023-11-14 [PMID: 37963864] (WB, IHC, Mouse)

Details:
IB Dilution 1:2000; IHC Dilution 1:100

Deng L, Gao R, Chen H et al. Let-7b-TLR7 Signaling Axis Contributes to the Anesthesia/Surgery-Induced Cognitive Impairment Molecular neurobiology 2023-10-02 [PMID: 37782443]

Liu J, Ke P, Guo H et al. Activation of TLR7-mediated autophagy increases epileptic susceptibility via reduced KIF5A-dependent GABAA receptor transport in a murine model Experimental & molecular medicine 2023-06-01 [PMID: 37258573] (IHC, WB, Mouse)

Lanki M Prognostic and Differential Diagnostic Biomarkers in Pancreatic Ductal Adenocarcinoma Thesis 2023-01-01 (IHC-P, Human)

Zhang L, Cen Y, Huang Q et al. Computational Flow Cytometric Analysis to Detect Epidermal Subpopulations In Human Skin Biomed Eng Online 2021-02-18 [PMID: 33596908]

Makinen, LK. Matrix metalloproteinases and toll-like receptors in early-stage oral tongue squamous cell carcinoma J Oral Pathol Med 2018-05-11 [PMID: 29747237]

Hayakawa K, Fujishiro M, Yoshida Y et al. Exposure of female NZBWF1 mice to imiquimod induced lupus nephritis at an early age via a unique mechanism that differed from spontaneous onset Clinical and Experimental Immunology 2022-02-02 [PMID: 35260898] (WB)

Zhu Y, Wu Z, Yan W et al. Allosteric inhibition of SHP2 uncovers aberrant TLR7 trafficking in aggravating psoriasis EMBO molecular medicine 2021-12-22 [PMID: 34936223] (IHC-P, ICC/IF, Mouse, Human)

More publications at http://www.novusbio.com/NBP2-24906

Procedures

Flow (Intracellular) Protocol for TLR7 Antibody (NBP2-24906)
Protocol for Flow Cytometry Intracellular Staining
Sample Preparation.
1. Grow cells to 60-85% confluency. Flow cytometry requires between 2 x 105 and 1 x 106 cells for optimal performance.
2. If cells are adherent, harvest gently by washing once with staining buffer and then scraping. Avoid using trypsin as this can disrupt certain epitopes of interest. If enzymatic harvest is required, use Accutase, Collagenase, or TrypLE Express for a less damaging option.
3. Reserve 100 uL for counting, then transfer cell volume into a 50 mL conical tube and centrifuge for 8 minutes at 400 RCF.
a. Count cells using a hemocytometer and a 1:1 trypan blue exclusion stain to determine cell viability before starting the flow protocol. If cells appear blue, do not proceed.
4. Re-suspend cells to a concentration of 1 x 106 cells/mL in staining buffer (NBP2-26247).
5. Aliquot out 100 uL samples in accordance with your experimental samples.

Tip: When cell surface and intracellular staining are required in the same sample, it is advisable that the cell surface staining be performed first since the fixation and permeabilization steps might reduce the availability of surface antigens.

Intracellular Staining.
Tip: When performing intracellular staining, it is important to use appropriate fixation and permeabilization reagents based upon the target and its subcellular location. Generally, our Intracellular Flow Assay Kit (NBP2-29450) is a good place to start as it contains an optimized combination of reagents for intracellular staining as well as an inhibitor of intracellular protein transport (necessary if staining secreted proteins). Certain targets may require more gentle or transient permeabilization protocols such as the commonly employed methanol or saponin-based methods.
Protocol for Cytoplasmic Targets:
1. Fix the cells by adding 100 uL fixation solution (such as 4% PFA) to each sample for 10-15 minutes.
2. Permeabilize cells by adding 100 uL of a permeabilization buffer to every 1 x 106 cells present in the sample. Mix well and incubate at room temperature for 15 minutes.
a. For cytoplasmic targets, use a gentle permeabilization solution such as 1X PBS + 0.5% Saponin or 1X PBS + 0.5% Tween-20.
b. To maintain the permeabilized state throughout your experiment, use staining buffer + 0.1% of the permeabilization reagent (i.e. 0.1% Tween-20 or 0.1% Saponin).
3. Following the 15 minute incubation, add 2 mL of the staining buffer + 0.1% permeabilizer to each sample.
4. Centrifuge for 1 minute at 400 RCF.
5. Discard supernatant and re-suspend in 100 uL of staining buffer + 0.1% permeabilizer.
6. Add appropriate amount of each antibody (eg. 1 test or 1 ug per sample, as experimentally determined).
7. Mix well and incubate at room temperature for 30 minutes- 1 hour. Gently mix samples every 10-15 minutes.
8. Following the primary/conjugate incubation, add 1-2 mL/sample of staining buffer +0.1% permeabilizer and centrifuge for 1 minute at 400 RCF.
9. Wash twice by re-suspending cells in staining buffer (2 mL for tubes or 200 uL for wells) and centrifuging at 400 RCF for 5 minutes. Discard supernatant.
10. Add appropriate amount of secondary antibody (as experimentally determined) to each sample.
11. Incubate at room temperature in dark for 20 minutes.
12. Add 1-2 mL of staining buffer and centrifuge at 400 RCF for 1 minute and discard supernatant.
13. Wash twice by re-suspending cells in staining buffer (2 mL for tubes or 200 uL for wells) and centrifuging at 400 RCF for 5 minutes. Discard supernatant.
14. Resuspend in an appropriate volume of staining buffer (usually 500 uL per sample) and proceed with analysis on your flow cytometer.

Immunohistochemistry-Paraffin Protocol for TLR7 Antibody (NBP2-24906)
Immunohistochemistry-Paraffin Embedded Sections

Antigen Unmasking:
Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes (keep slides in the sodium citrate buffer all the time).

Staining:
1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in PBS for 5 minutes.
3. Block each section with 100-400 ul blocking solution (1% BSA in PBS) for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4 C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul HRP polymer conjugated secondary antibody. Incubate 30 minutes at room temperature.
7. Wash sections three times in wash buffer for 5 minutes each.
8. Add 100-400 ul DAB substrate to each section and monitor staining closely.
9. As soon as the sections develop, immerse slides in deionized water.
10. Counterstain sections in hematoxylin.
11. Wash sections in deionized water two times for 5 minutes each.
12. Dehydrate sections.
13. Mount coverslips.

Immunocytochemistry/ Immunofluorescence Protocol for TLR7 Antibody (NBP2-24906)
Immunocytochemistry Protocol

Culture cells to appropriate density in 35 mm culture dishes or 6-well plates.

1. Remove culture medium and wash the cells briefly in PBS. Add 4% paraformaldehyde to the dish and fix at room temperature for 10 minutes.
2. Remove the paraformaldehyde and wash the cells in PBS.
3. Permeabilize the cells with 0.1% Triton X100 or other suitable detergent for 2 min.
4. Remove the permeabilization buffer and wash three times for 5 minutes each in PBS. Be sure to not let the specimen dry out.
5. To block nonspecific antibody binding, incubate in 10% normal goat serum from 1 hour to overnight at room temperature.
6. Add primary antibody at appropriate dilution and incubate overnight at 4C.
7. Remove primary antibody and replace with PBS. Wash three times for 5 minutes each.
8. Add secondary antibody at appropriate dilution. Incubate for 1 hour at room temperature.
9. Remove secondary antibody and replace with PBS. Wash three times for 5 minutes each.
10. Counter stain DNA with DAPI if required.

Western Blot Protocol for TLR7 Antibody (NBP2-24906)
Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 10-25 ug of total protein per lane.
2. Transfer proteins to PVDF membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain the membrane with Ponceau S (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot TBS -0.05% Tween 20 (TBST).
5. Block the membrane in 5% Non-fat milk in TBST (blocking buffer) for at least 1 hour.
6. Wash the membrane in TBST three times for 10 minutes each.
7. Dilute primary antibody in blocking buffer and incubate overnight at 4C with gentle rocking.
8. Wash the membrane in TBST three times for 10 minutes each.
9. Incubate the membrane in diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturer's instructions) for 1 hour at room temperature.
10. Wash the blot in TBST three 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 manufacturer's instructions.

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Products Related to NBP2-24906

NBP2-26228-1mg	Imiquimod, TLR7 ligand
NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

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.

For more information on our 100% guarantee, please visit www.novusbio.com/guarantee

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