Product Datasheet

DDX21 Antibody - BSA Free
NB100-1718

Unit Size: 0.1 ml

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

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Publications: 12

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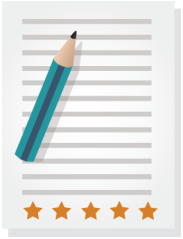
www.novusbio.com/NB100-1718

Updated 9/9/2025 v.20.1



NB100-1718

DDX21 Antibody - BSA Free

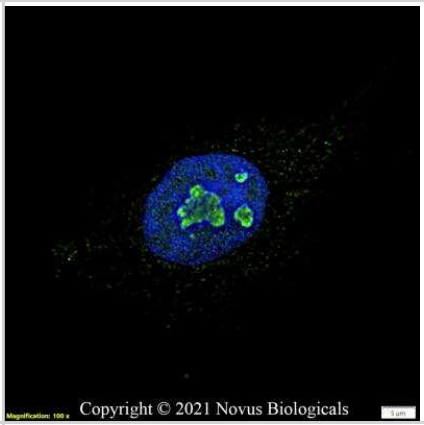
Product Information	
Unit Size	0.1 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Target Molecular Weight	87 kDa

Product Description	
Description	Novus Biologicals Rabbit DDX21 Antibody - BSA Free (NB100-1718) is a polyclonal antibody validated for use in IHC, WB, Flow, ICC/IF, IP and ChIP. Anti-DDX21 Antibody: Cited in 11 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	9188
Gene Symbol	DDX21
Species	Human, Mouse, Zebrafish
Reactivity Notes	Based on 100% sequence identity, this antibody is predicted to react with Panda, Orangutan, Gorilla, Chimpanzee, African elephant, Northern white-cheeked gibbon, and Thirteen-lined ground squirrel. Use in Zebrafish reported in scientific literature (PMID:32231306).
Immunogen	The immunogen recognized by this antibody maps to a region between residue 725 and the C-terminus (residue 783) of human DEAD/H (Asp-Glu-Ala-Asp/His) Box Polypeptide 21 using the numbering given in entry NP_004719.2 (GeneID 9188).

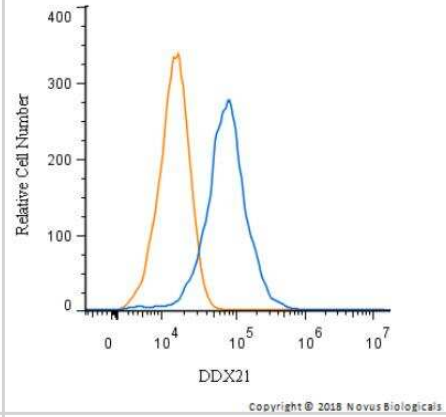
Product Application Details	
Applications	Western Blot, Immunohistochemistry-Paraffin, Chromatin Immunoprecipitation, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunoprecipitation, Chromatin Immunoprecipitation (ChIP), Knockdown Validated
Recommended Dilutions	Western Blot 1:2000-1:10000, Chromatin Immunoprecipitation reported in scientific literature (PMID 32231306), Flow Cytometry 1:1000, Immunohistochemistry 1:10-1:500, Immunocytochemistry/ Immunofluorescence 1:50 - 1:500, Immunoprecipitation 2 - 10 ug/mg of lysate, Immunohistochemistry-Paraffin 1:10-1:500, Chromatin Immunoprecipitation (ChIP), Knockdown Validated reported in scientific literature (PMID 35440492)

Images

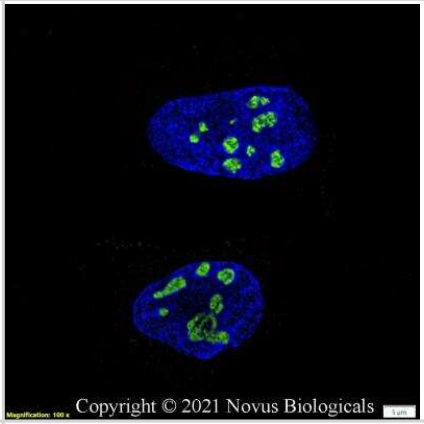
Immunocytochemistry/Immunofluorescence: DDX21 Antibody [NB100-1718] - HeLa cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.5% Triton X-100 in PBS for 5 minutes. The cells were incubated with anti-DDX21 Antibody NB100-1718 at 2 ug/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:1000 dilution for 60 minutes. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.



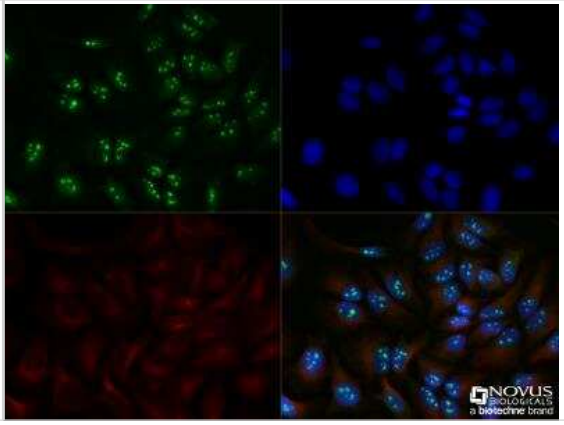
Flow Cytometry: DDX21 Antibody [NB100-1718] - An intracellular stain was performed on Jurkat Cells with DDX21Antibody NB100-1718 and a matched isotype control. Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 ug/mL for 30 minutes at room temperature, followed by Rabbit IgG APC-conjugated Secondary Antibody (R&D Systems, F0111).

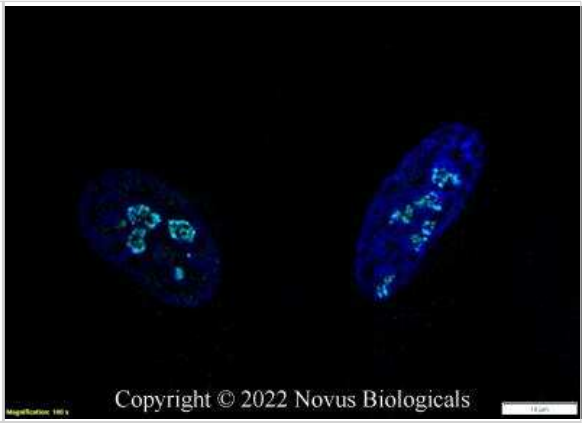
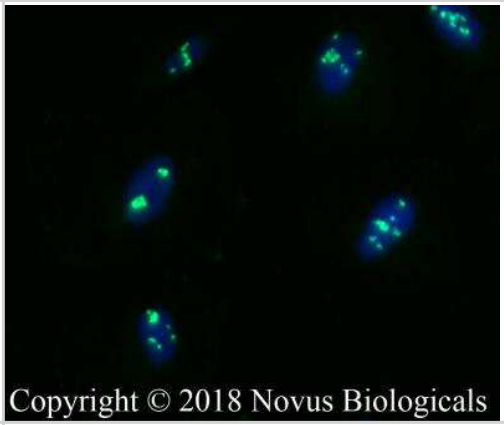
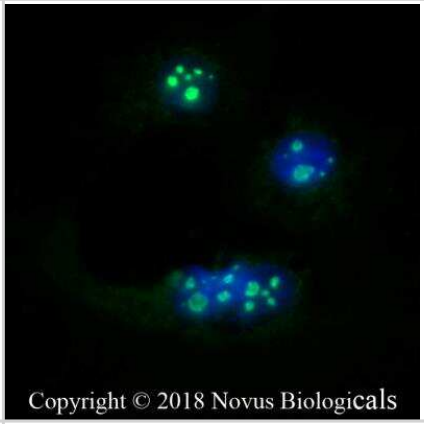
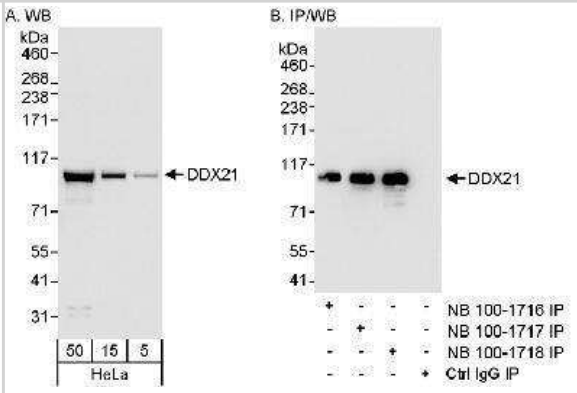


Immunocytochemistry/Immunofluorescence: DDX21 Antibody [NB100-1718] - HeLa cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.05% Triton X-100 in PBS for 5 minutes. The cells were incubated with DDX21 Antibody conjugated to Alexa Fluor 488 (NB100-1718AF488) at 5 ug/ml for 1 hour at room temperature. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.

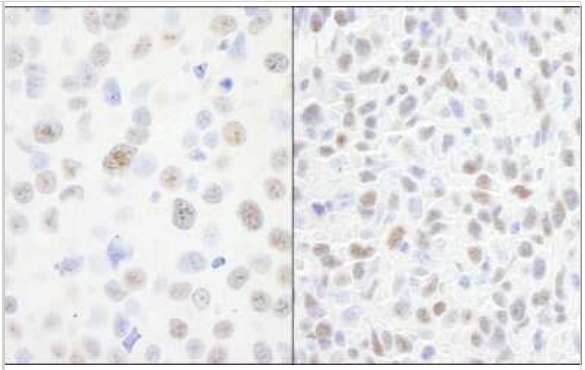


Immunocytochemistry/Immunofluorescence: DDX21 Antibody [NB100-1718] - ICC/IF detection of DDX21 in HeLa cells which were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X TBS + 0.5% Triton X-100. The cells were incubated with anti-DDX21 [NB100-1718] at a 1:200 dilution overnight at 4C and detected with an anti-rabbit DylightTM 488 (green) at a 1:500 dilution. Alpha tubulin (DM1A) [NB100-690] was used as a co-stain at a 1:1000 dilution and detected with an anti-mouse DylightTM 550 (red) at a 1:500 dilution. Nuclei were counterstained with DAPI (blue) [NBP2-31156].

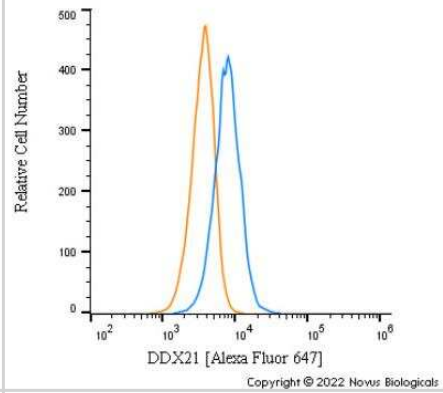


Immunocytochemistry/Immunofluorescence: DDX21 Antibody [NB100-1718] - HeLa cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.05% Triton X-100 in PBS for 5 minutes. The cells were incubated with conjugated to Alexa Fluor 647 (NB100-1718AF647) at 2 ug/ml for 1 hour at room temperature. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.	
Immunocytochemistry/Immunofluorescence: DDX21 Antibody [NB100-1718] - PC12 cells were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X PBS + 0.5% Triton-X100. The cells were incubated with anti-DDX21 at 2 ug/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.	
Immunocytochemistry/Immunofluorescence: DDX21 Antibody [NB100-1718] - NIH-3T3 cells were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X PBS + 0.5% Triton-X100. The cells were incubated with anti-DDX21 at 2 ug/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.	
Western Blot: DDX21 Antibody [NB100-1718] - Detection of Human DDX21 on HeLa whole cell lystate using NB100-1718. DDX21 was also immunoprecipitated using rabbit anti-DDX21 antibodies NB100-1716 and NB100-1717.	

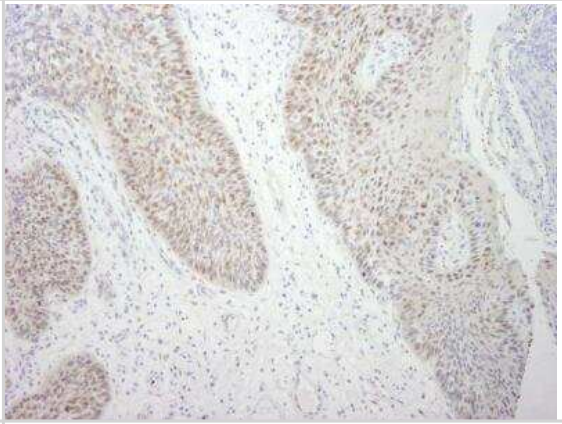
Immunohistochemistry: DDX21 Antibody [NB100-1718] - Sample: FFPE section of human breast carcinoma (left) and mouse squamous cell carcinoma (right). Antibody: Affinity purified rabbit anti-DDX21 used at a dilution of 1:200 (1ug/ml) . Detection: DAB.



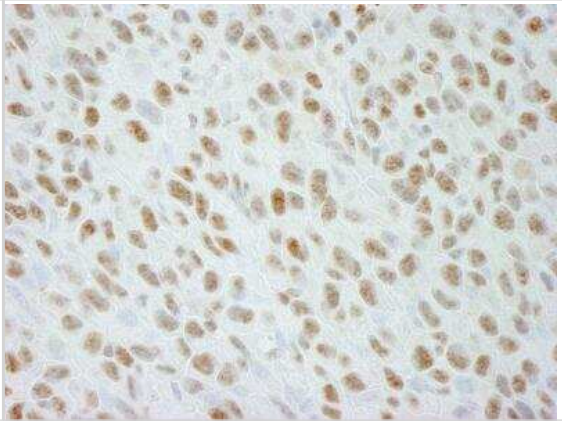
Flow Cytometry: DDX21 Antibody - BSA Free [NB100-1718] - An intracellular stain was performed on A431 cells with DDX21 NB100-1718AF647 (blue) and a matched isotype control NBP2-24891 (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 647.



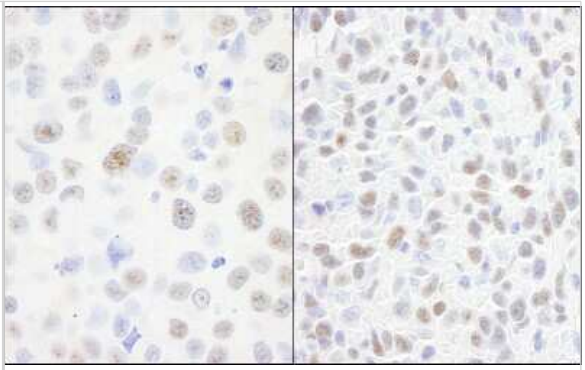
Immunohistochemistry-Paraffin: DDX21 Antibody [NB100-1718] - FFPE section of human larynx squamous cell carcinoma. Antibody used at a dilution of 1:250. Detection: DAB staining using Immunohistochemistry Accessory Kit.



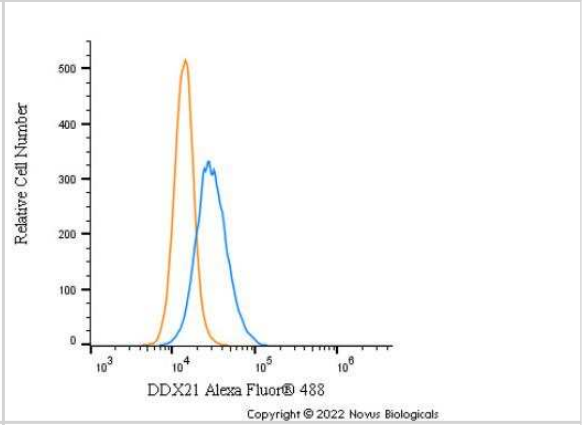
Immunohistochemistry-Paraffin: DDX21 Antibody [NB100-1718] - FFPE section of mouse squamous cell carcinoma. Antibody used at a dilution of 1:250. Detection: DAB staining using Immunohistochemistry Accessory Kit.



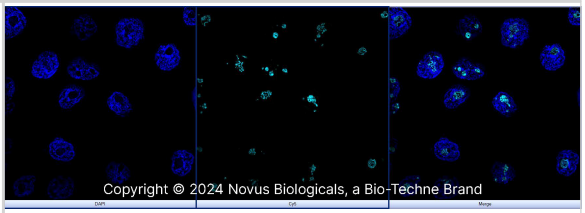
Immunohistochemistry: DDX21 Antibody [NB100-1718] - Sample: FFPE section of human breast carcinoma (left) and mouse squamous cell carcinoma (right). Antibody: Affinity purified rabbit anti-DDX21 used at a dilution of 1:200 (1ug/ml). Detection: DAB.



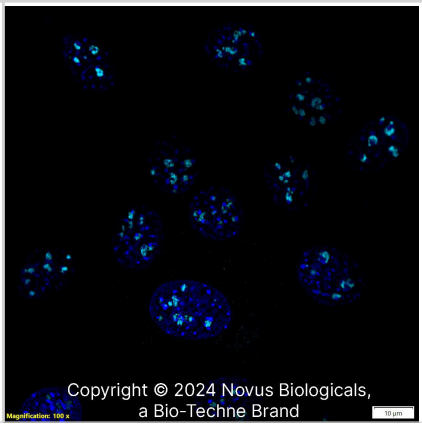
Flow Cytometry: DDX21 Antibody [NB100-1718] - An intracellular stain was performed on HeLa cells with DDX21 Antibody NB100-1718AF488 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 488.



DDX21 was detected in immersion fixed A431 human skin carcinoma cell line using Rabbit anti-DDX21 Antigen Affinity Purified Polyclonal Antibody conjugated to Alexa Fluor® 647 (Catalog # NB100-1718AF647) (light blue) at 5 µg/mL overnight at 4C. Cells were counterstained with DAPI (blue). Cells were imaged using a 100X objective and digitally deconvolved.



DDX21 was detected in immersion fixed NIH3T3 Mouse fibroblast cell line using Rabbit anti-DDX21 Antigen Affinity-purified Polyclonal Antibody conjugated to Alexa Fluor® 647 (Catalog # NB100-1718AF647) (light blue) at 5 µg/mL overnight at 4C. Cells were counterstained with DAPI (blue). Cells were imaged using a 100X objective and digitally deconvolved.



Publications

Freibaum BD, Messing J, Yang P et al. High-fidelity reconstitution of stress granules and nucleoli in mammalian cellular lysate Journal of Cell Biology 2021-03-01 [PMID: 33502444] (Western Blot, Human)

Wang X, Wu Z, Qin W et al. Long non-coding RNA ZFAS1 promotes colorectal cancer tumorigenesis and development through DDX21-POLR1B regulatory axis Aging (Albany NY) 2020-11-16 [PMID: 33202381] (Western Blot, Human)

Daigh LH, Saha D, Rosenthal DL et al. Uncoupling of mTORC1 from E2F activity maintains DNA damage and senescence Nature Communications 2024-10-24 [PMID: 39448567]

Aryan F, Detrés D, Luo CC et al. Nucleolus activity-dependent recruitment and biomolecular condensation by pH sensing Molecular cell 2023-11-14 [PMID: 37979585]

Yu Z, Wang Q, Zhu G et al. Decoding the genomic landscape of chromatin-associated biomolecular condensates bioRxiv 2023-08-25 (WB)

Gritti I, Basso V, Rinchai D et al. Loss of ribonuclease DIS3 hampers genome integrity in myeloma by disrupting DNA:RNA hybrid metabolism The EMBO journal 2022-10-10 [PMID: 36215697] (ICC/IF)

Karyka E, Berrueta Ramirez N, Webster CP et al. SMN-deficient cells exhibit increased ribosomal DNA damage Life science alliance 2022-08-01 [PMID: 35440492] (ICC/IF, KD, Human)

Li J, Wang D, Fang P et al. DEAD-Box RNA Helicase 21 (DDX21) Positively Regulates the Replication of Porcine Reproductive and Respiratory Syndrome Virus via Multiple Mechanisms Viruses 2022-02-24 [PMID: 35336874] (WB, Porcine)

Calo E, Gu B, et al. Tissue-selective effects of nucleolar stress and rDNA damage in developmental disorders. Nature 2018-02-01 [PMID: 29364875] (IF/IHC, Mouse)

Santoriello C, Sporrij A, Yang S et al. RNA helicase DDX21 mediates nucleotide stress responses in neural crest and melanoma cells Nat. Cell Biol. 2020-04-01 [PMID: 32231306] (Chemotaxis, WB, Zebrafish)

Shao Z, Flynn RA, Crowe JL et al. DNA-PKcs has KU-dependent function in rRNA processing and haematopoiesis Nature 2020-02-26 [PMID: 32103174] (IF/IHC, Mouse)

Song C, Hotz-Wagenblatt A, Voit R, Grummt I. SIRT7 and the DEAD-box helicase DDX21 cooperate to resolve genomic R loops and safeguard genome stability. Genes Dev. 2017-08-08 [PMID: 28790157] (WB, Human)

Procedures

Western Blot Protocol for DDX21 Antibody (NB100-1718)
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.

Immunohistochemistry-Paraffin Protocol for DDX21 Antibody (NB100-1718)
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 at all times).

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 DDX21 Antibody (NB100-1718)
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 10% formalin to the dish and fix at room temperature for 10 minutes.
2. Remove the formalin and wash the cells in PBS.
3. Permeablize the cells with 0.1% Triton X100 or other suitable detergent for 10 min.
4. Remove the permeablization buffer and wash three times for 10 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 10 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 10 minutes each.
10. Counter stain DNA with DAPi if required.

Flow (Intracellular) Protocol for DDX21 Antibody (NB100-1718)

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 1 mL 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 permeablization 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:

Optional: Perform cell surface staining as described in the previous section.

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 permeabization 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 5 minutes at 400 RCF.
5. Discard supernatant and re-suspend in 1 mL of staining buffer + 0.1% permeabilizer.
6. Stain each sample at 1 uL/ 1 x 106 cells of primary antibody or 1-3 uL/ 1 x 106 cells for directly conjugated antibodies. Mix well and incubate at room temperature for 30 minutes- 1 hour. Gently mix samples every 10-15 minutes.
7. Following the primary/conjugate incubation, add 2 mL/sample of staining buffer +0.1% permeabilizer and centrifuge for 5 minutes at 400 RCF.
8. Remove supernatant and re-suspend each sample in 2 mL staining buffer + 0.1% permeabilizer, repeat wash for 5 minutes at 400 RCF.
9. If using a directly conjugated antibody, after the second wash, re-suspend cell pellet to a final volume of 500 uL per sample and proceed with flow analysis.

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Products Related to NB100-1718

NBL1-09787	DDX21 Overexpression Lysate
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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