Product Datasheet

ABCA1 Antibody
NB400-105

Unit Size: 0.1 ml

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

Reviews: 6  Publications: 317

Protocols, Publications, Related Products, Reviews, Research Tools and Images at:
www.novusbio.com/NB400-105

Updated 12/25/2019 v.20.1
**Product Information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Unit Size</td>
<td>0.1 ml</td>
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<tr>
<td>Concentration</td>
<td>1 mg/ml</td>
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<tr>
<td>Storage</td>
<td>Store at 4C short. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.</td>
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<tr>
<td>Clonality</td>
<td>Polyclonal</td>
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<tr>
<td>Preservative</td>
<td>0.05% Sodium Azide</td>
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<tr>
<td>Isotype</td>
<td>IgG</td>
</tr>
<tr>
<td>Purity</td>
<td>Immunogen affinity purified</td>
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<tr>
<td>Buffer</td>
<td>PBS</td>
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<tr>
<td>Target Molecular Weight</td>
<td>220 kDa</td>
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**Product Description**

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<tr>
<th>Parameter</th>
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<tr>
<td>Host</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Gene ID</td>
<td>19</td>
</tr>
<tr>
<td>Gene Symbol</td>
<td>ABCA1</td>
</tr>
<tr>
<td>Species</td>
<td>Human, Mouse, Rat, Porcine, Canine, Chicken, Chinese Hamster, Equine, Hamster, Mustelid, Primate, Rabbit</td>
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<td>Immunogen</td>
<td>Partial peptide sequence (within residues 1100-1300) of human ABCA1 [UniProt# O95477]. Actual immunogen sequence is proprietary information.</td>
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**Product Application Details**

<table>
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<tr>
<th>Applications</th>
<th>Western Blot, Simple Western, Chromatin Immunoprecipitation, ELISA, Flow Cytometry, Immunoblotting, Immunocytochemistry/Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, Immunoprecipitation, Block/Neutralize, Dual RNAscope ISH-IHC, Gel Supershift Assay, PCR</th>
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<tbody>
<tr>
<td>Recommended Dilutions</td>
<td>Western Blot 1:500, Simple Western 1:50, Chromatin Immunoprecipitation, Flow Cytometry 1:400, ELISA, Immunohistochemistry 1:200, Immunocytochemistry/Immunofluorescence 1:100, Immunoprecipitation 1:10-1:500, Immunohistochemistry-Paraffin 1:200, Immunohistochemistry-Frozen, Immunoblotting, Gel Supershift Assay, Block/Neutralize, PCR, Dual RNAscope ISH-IHC</td>
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</table>
Application Notes

This ABCA1 antibody has been used for Flow Cytometry and ICC (PMID: 21501868), IP (PMID: 21846716; 21106522). Use in Gel supper shift assay reported in scientific literature (PMID: 15684432). Use in immunoblotting reported in scientific literature (PMID: 27599291). Use in blocking/neutralizing reported in scientific literature (PMID: 30821416). Use in PCR reported in scientific literature (PMID: 27406916). Western Blot band representing ABCA1 is observed at approx. 220 kDa. Additional non-specific bands are seen at lower molecular weights, but do not interfere with the ABCA1 signal. Chromatin Immunoprecipitation (PMID 19515742) and ELISA (PMID 18541924) were also reported in scientific literature.

In Simple Western only 10 - 15 uL of the recommended dilution is used per data point. Separated by Charge.

The observed molecular weight of the protein may vary from the listed predicted molecular weight due to post translational modifications, post translation cleavages, relative charges, and other experimental factors.

Images

Dual RNAscope ISH-IHC: ABCA1 Antibody [NB400-105] - Formalin-fixed paraffin-embedded tissue sections of human prostate cancer were probed for ABCA1 mRNA (ACD RNAscope Probe, catalog # 432291; Fast Red chromogen, ACD catalog # 322360). Adjacent tissue section was processed for immunohistochemistry using rabbit polyclonal (Novus Biologicals catalog # NB400-105) at 1.5ug/mL with overnight incubation at 4 degrees Celsius followed by incubation with anti-rabbit IgG VisUCyte HRP Polymer Antibody (Catalog # VC003) and DAB chromogen (yellow-brown). Tissue was counterstained with hematoxylin (blue). Specific staining was localized to glandular cells.

Western Blot: ABCA1 Antibody [NB400-105] - Western Blot analysis of ABCA1 in total cell lysates of RAW264.9 cells treated with vehicle (-) or 9-cisretinoic acid and 22Rhydroxycholesterol (+). Samples used for this testing were 40 ug of total cell post-nuclear lysate from each group.

Western Blot: ABCA1 Antibody [NB400-105] - Prostates of LXR mutant mice accumulate cholesterol esters through inappropriate LXR target genes regulation. Total protein lysates of WT and LXR null mice under normal or high cholesterol diet were analyzed by western blotting with antibodies against ABCA1, LDLR and ACTIN as a loading control (left panel), quantification of ABCA1 and LDLR protein accumulation levels (right panel). * p<0.05, ** p<0.001 in Student's t test. Error bars represent the +/- mean SEM. Image collected and cropped by CiteAb from the following publication (http://dx.plos.org/10.1371/journal.pgen.1003483), licensed under a CC-BY licence.
Immunocytochemistry/Immunofluorescence: ABCA1 Antibody [NB400-105] - HepG2 cells were grown to 60% confluency, serum starved for 24 hours, and then treated with 1μM TO9 for 24 hours prior to being fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X TBS + 0.5% Triton-X100. The cells were incubated with anti-ABCA1 at 5.0ug/ml overnight at 4C and detected with an anti-rabbit Dylight 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 Dylight 550 (Red) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.

Immunocytochemistry/Immunofluorescence: ABCA1 Antibody [NB400-105] - Untreated HepG2 cells were grown to 60% confluency, and serum starved for 24 hours prior to being fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X TBS + 0.5% Triton-X100. The cells were incubated with anti-ABCA1 at 5.0ug/ml overnight at 4C and detected with an anti-rabbit Dylight 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 Dylight 550 (Red) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.

Immunohistochemistry-Paraffin: ABCA1 Antibody [NB400-105] - Detection of ABCA1 in human prostate epithelium showing luminal and membrane staining.

Flow Cytometry: ABCA1 Antibody [NB400-105] - ABCA1 antibody was tested at 1: 400 in HeLa cells using an Alexa Fluor 488 secondary (shown in purple). M1 is defined by unstained cells.
Western Blot: ABCA1 Antibody [NB400-105] - Detection of ABCA1 in mouse peritoneal macrophages using NB 400-105 (Lot L). ECL exposure, 1 min. Lane 4: T09 uninduced lysate Lane 5: T09 induced lysate.

Western Blot: ABCA1 Antibody [NB400-105] - Analysis of ABCA1, using NB400-105. Samples: 40 ug of total cell post-nuclear lysate of raw macrophages treated with 9-cisretinoic acid and 22R-hydroxycholesterol.

<table>
<thead>
<tr>
<th>Publications</th>
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<tbody>
<tr>
<td>Pelletier RM, Akpovi CD, Chen L et al. Cholesterol metabolism and Cx43, Cx46, and Cx50 gap junction protein expression and localization in normal and diabetic and obese ob/ob and db/db mouse testes Am J Physiol Endocrinol Metab. 2017 Dec 31 [PMID: 28851737] (WB, Mouse)</td>
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<tr>
<td>Details:</td>
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<td>Citation using the DyLight 650 version of this antibody.</td>
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<tr>
<td>Zhou Y, Bazick H, Miles JR et al. A neutral lipid-enriched diet improves myelination and alleviates peripheral nerve pathology in neuropathic mice Exp. Neurol. Aug 3 2019 12:00AM [PMID: 31386828] (WB, IHC-Fr, Mouse)</td>
</tr>
<tr>
<td>Koyama S, Horie T, Nishino T et al. Identification of Differential Roles of MicroRNA-33a and -33b During Atherosclerosis Progression With Genetically Modified Mice J Am Heart Assoc Jul 2 2019 12:00AM [PMID: 31242815] (IHC-Fr, Mouse)</td>
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<tr>
<td>Li Zhiqiang, Kabir Inamul, Tietelman Gladys et al. Sphingolipid de novo biosynthesis is essential for intestine cell survival and barrier function. Cell Death &amp; Disease 2018 Feb 7 [PMID: 29415989] (WB, Mouse)</td>
</tr>
</tbody>
</table>
Procedures

Western Blot protocol for ABCA1 Antibody (NB400-105)
RAW macrophages were treated with 9-cis-retinoic acid and 22R-hydroxycholesterol, known inducers of ABCA1 expression in macrophages. The total cell post-nuclear lysate (40ug protein) was separated by SDS-PAGE and detected using a 1:1000 dilution of NB400-105 affinity purified ABCA1 antibody incubated for 1 hour at room temperature. ABCA1 has been found to run as 3 bands by many researchers; this is probably due to protein modifications such as glycosylation.

NOTE: An important factor in detecting ABCA1 is in the cell type used. ABCA1 is expressed in very low levels in most cell types. Therefore, ABCA1 expression needs to be induced by using 22-hydroxycholesterol and 9-cis-retinoic acid as ligands for the transcription factor LXR.

1. Without heating at all (leave at room temp for about 15 to 20 minutes with Beta-mercaptoethanol), load 40 ug post-nuclear lysates* to 7.5% or 4-15% Tris-HCL SDS gel (Bio-RAD) in sample buffer. Do NOT boil the samples. (NP-40 will not interfere with the running of the protein on SDS-PAGE.)
2. Transfer to nitrocellulose membrane at 100V 1hr or 30V overnight.
3. Block membrane in 5% milk in TBS-T for at least 1 hr. Wash with TBS-T 5 minutes.
4. Blot with anti-ABCA1 antibody in 3% milk in TBS-T for 1 hour.
5. Wash with TBS-T 3 times, 10 minutes each.
6. Blot with anti-rabbit secondary according to the recommended dilutions in 3% milk in TBS-T for 1 hour.
7. Wash with TBS-T 3 times, 10 minutes each.
8. Detect with chemiluminescent reagent (Pierce).
9. Image

TBS-T: Tris-buffered-saline with Tween-20

See also the specific references mentioned in the datasheet. *Post-nuclear lysate is the result of sonication or dounce homogenization of lysate, centrifugation at low-speed, and the removal of nuclei. The resulting supernatant is called post-nuclear and contains cytosolic and membrane proteins without any of the nuclear components.

Immunohistochemistry-Paraffin protocol for ABCA1 Antibody (NB400-105)
Immunohistochemistry-Formalin Fixed Paraffin Embedded sections

I. Deparaffinization:
A. Treat slides with Xylene: 3 changes for 5 minutes each. Drain slides for 10 seconds between changes.
B. Treat slides with 100% Reagent Alcohol: 3 changes for 5 minutes each. Drain slides for 10 seconds between changes.

II. Quench Endogenous Peroxidase:
A. Place slides in peroxidase quenching solution: 15-30 minutes.
To Prepare 200 ml of Quenching Solution:
-Add 3 ml of 30% Hydrogen Peroxide to 200 ml of Methanol.
-Use within 4 hours of preparation
B. Place slides in distilled water: 2 changes for 2 minutes each.

III. Retrieve Epitopes:
A. Preheat Citrate Buffer. Place 200 ml of Citrate Buffer Working Solution into container, cover and place into steamer. Heat to 90-96 degrees C.
B. Place rack of slides into hot Citrate Buffer for 20 minutes. Cover.
C. Carefully remove container with slides from steamer and cool on bench, uncovered, for 20 minutes.
D. Slowly add distilled water to further cool for 5 minutes.
E. Rinse slides with distilled water. 2 changes for 2 minutes each.

IV. Immunostaining Procedure:
A. Remove each slide from rack and circle tissue section with a hydrophobic barrier pen (e.g. Liquid Blocker-Super Pap Pen).
B. Flood slide with Wash Solution. Do not allow tissue sections to dry for the rest of the procedure.
C. Drain wash solution and apply 4 drops of Blocking Reagent to each slide and incubate for 15 minutes.
D. Drain Blocking Reagent (do not wash off the Blocking Reagent), apply 200 ul of Primary Antibody solution to each
slide, and incubate for 1 hour.
E. Wash slides with Wash Solution: 3 changes for 5 minutes each.
F. Drain wash solution, apply 4 drops of Secondary antibody to each slide and incubate for 1 hour.
G. Wash slides with Wash Solution: 3 changes for 5 minutes each.
H. Drain wash solution, apply 4 drops of DAB Substrate to each slide and develop for 5-10 minutes. Check development with microscope.
I. Wash slides with Wash Solution: 3 changes for 5 minutes each.
J. Drain wash solution, apply 4 drops of Hematoxylin to each slide and stain for 1-3 minutes. Increase time if darker counterstaining is desired.
K. Wash slides with Wash Solution: 2-3 changes for 2 minutes each.
L. Drain wash solution and apply 4 drops of Bluing Solution to each slide for 1-2 minutes.
M. Rinse slides in distilled water.
N. Soak slides in 70% reagent alcohol: 3 minutes with intermittent agitation.
O. Soak slides in 95% reagent alcohol: 2 changes for 3 minutes each with intermittent agitation.
P. Soak slides in 100% reagent alcohol: 3 changes for 3 minutes each with intermittent agitation. Drain slides for 10 seconds between each change.
Q. Soak slides in Xylene: 3 changes for 3 minutes each with intermittent agitation. Drain slides for 10 seconds between each change.
R. Apply 2-3 drops of non-aqueous mounting media to each slide and mount coverslip.
S. Lay slides on a flat surface to dry prior to viewing under microscope.

NOTES:
- Use treated slides (e.g. HistoBond) to assure adherence of FFPE sections to slide.
- Prior to deparaffinization, heat slides overnight in a 60 degrees C oven.
- All steps in which Xylene is used should be performed in a fume hood.
For Epitope Retrieval, a microwave or pressure cooker may be substituted for the steamer method. Adjust times as necessary depending on conditions.
- For the initial IHC run with a new primary antibody, test tissues with and without Epitope Retrieval. In some instances, Epitope Retrieval may not be necessary.
- 200 ul is the recommended maximum volume to apply to a slide for full coverage. Using more than 200 ul may allow solutions to wick off the slide and create drying artifacts. Small tissue sections less than 200 ul may be used.
- 5 minutes of development with DAB Substrate should be sufficient. Do not develop for more than 10 minutes. If 5 minutes of development causes background staining, further dilution of the primary antibody may be necessary.
Hematoxylin should produce a light nuclear counterstain so as not to obscure the DAB staining. Counterstain for 1-1.5 minutes for nuclear antigens. Counterstain for 2-3 minutes for cytoplasmic and membranous antigens. If darker counterstaining is desired increase time (up to 10 minutes).
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

Earn gift cards/discounts by submitting a review: www.novusbio.com/reviews/submit/NB400-105

Earn gift cards/discounts by submitting a publication using this product: www.novusbio.com/publications

Products Related to NB400-105

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<th>Product Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>NBP1-30159</td>
<td>Raw 264.7 Whole Cell - T0901317 treated Assay Kit</td>
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<td>NB400-105PEP</td>
<td>ABCA1 Blocking Peptide</td>
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<tr>
<td>HAF008</td>
<td>Goat anti-Rabbit IgG Secondary Antibody [HRP (Horseradish Peroxidase)]</td>
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<td>NB7160</td>
<td>Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]</td>
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<tr>
<td>NBP2-24891</td>
<td>Rabbit IgG Isotype Control</td>
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Novus Biologicals USA
10730 E. Briarwood Avenue
Centennial, CO 80112
USA
Phone: 303.730.1950
Toll Free: 1.888.506.6887
Fax: 303.730.1966
novus@novusbio.com

Novus Biologicals Canada
461 North Service Road West, Unit B37
Oakville, ON L6M 2V5
Canada
Phone: 905.827.6400
Toll Free: 855.668.8722
Fax: 905.827.6402
canada@novusbio.com

Novus Biologicals Europe
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB, United Kingdom
Phone: (44) (0) 1235 529449
Free Phone: 0800 37 34 15
Fax: (44) (0) 1235 533420
info@bio-techne.com

General Contact Information
www.novusbio.com
Technical Support: technical@novusbio.com
Orders: orders@novusbio.com
General: novus@novusbio.com