

# Product Datasheet

## ABCA1 Antibody (3A1.891.3) - BSA Free NB400-164SS

Unit Size: 0.025 ml

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

[www.novusbio.com](http://www.novusbio.com)



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**NB400-164SS**

ABCA1 Antibody (3A1.891.3) - BSA Free

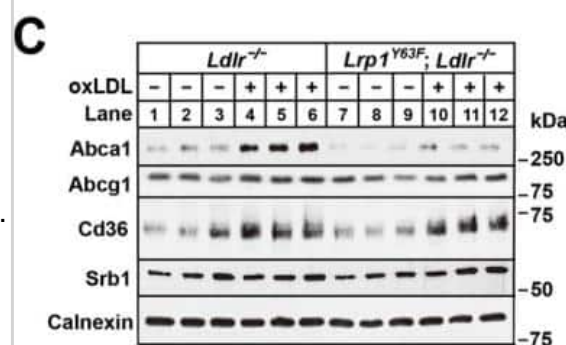
| Product Information     |  |
|-------------------------|--|
| Unit Size               | 0.025 ml   |
| Concentration           | This product is unpurified. The exact concentration of antibody is not quantifiable. |
| Storage                 | Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.                         |
| Clonality               | Monoclonal   |
| Clone                   | 3A1.891.3  |
| Preservative            | 0.1% Sodium Azide  |
| Isotype                 | IgG1 Kappa   |
| Purity                  | Unpurified   |
| Buffer                  | Ascites  |
| Target Molecular Weight | 250 kDa  |

| Product Description |   |
|---------------------|---|
| Description         | Novus Biologicals Rat ABCA1 Antibody (3A1.891.3) - BSA Free (NB400-164) is a monoclonal antibody validated for use in IHC and WB. Anti-ABCA1 Antibody: Cited in 9 publications. All Novus Biologicals antibodies are covered by our 100% guarantee. |
| Host                | Rat   |
| Gene ID             | 19  |
| Gene Symbol         | ABCA1   |
| Species             | Mouse, Human (Negative)   |
| Immunogen           | A1-N3 peptide (within residues 200-250) of mouse ABCA1 Antibody (3A1.891.3) covalently linked to chicken egg albumin by means of glutaraldehyde. [Uniprot: P41233]  |

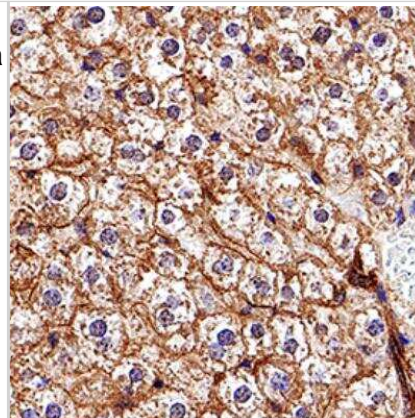
| Product Application Details |  |
|-----------------------------|--|
| Applications                | Western Blot, Immunohistochemistry-Paraffin, Immunohistochemistry  |
| Recommended Dilutions       | Western Blot 1:1000-1:3000, Immunohistochemistry 1:500, Immunohistochemistry-Paraffin 1:500. Use reported in scientific literature (PMID 19718435) |
| Application Notes           | In Western blot, a band is observed at ~250 kDa. ABCA1 is known to aggregate. Do not boil samples and use a reducing buffer.                       |

**Images**

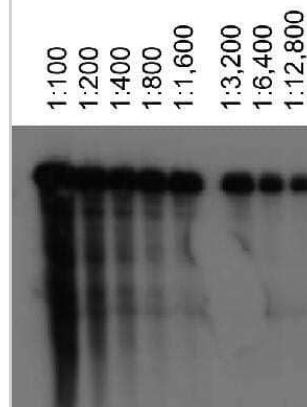
Western Blot: ABCA1 Antibody (3A1.891.3) [NB400-164] - Western blot analysis of lipid transporters in macrophages treated with or without oxLDL using antibodies against ABCA1 (NB400-164), SR-B1 (NB400-104), and CD36 (NB400-144). *Lrp1*<sup>Y63F</sup> impairs *Abca1*-mediated cholesterol efflux and increases lipid accumulation in macrophages. Image collected and cropped by CiteAb from the following publication (<https://elifesciences.org/articles/29292>) licensed under a CC-BY license.



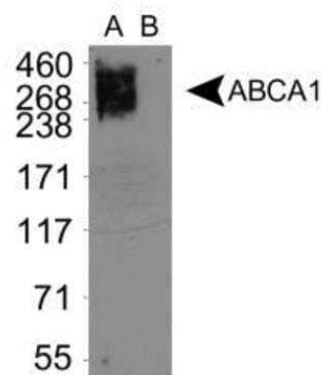
Immunohistochemistry-Paraffin: ABCA1 Antibody (3A1.891.3) [NB400-164] - Analysis of FFPE mouse liver using ABCA1 antibody at 1:500 on a Bond Rx autostainer (Leica Biosystems). The assay involved 20 minutes of heat induced antigen retrieval (HIER) using 10mM sodium citrate buffer (pH 6.0) and endogenous peroxidase quenching with peroxide block. The sections were incubated with primary antibody for 30 minutes and Bond Polymer Refine Detection (Leica Biosystems) with DAB was used for signal development followed by counterstaining with hematoxylin. Whole slide scanning and capturing of representative images was performed using Aperio AT2 (Leica Biosystems). Plasma membrane staining was observed. Staining was performed by Histowiz.



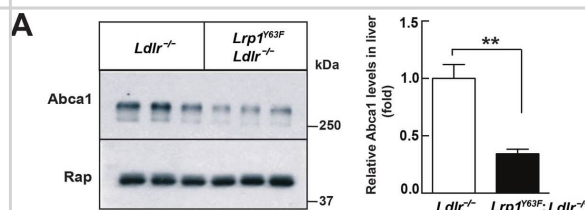
Western Blot: ABCA1 Antibody (3A1.891.3) [NB400-164] - Detection of ABCA1 using NB400-164 at various dilutions in ABCA1 transfected HeLa lysates.



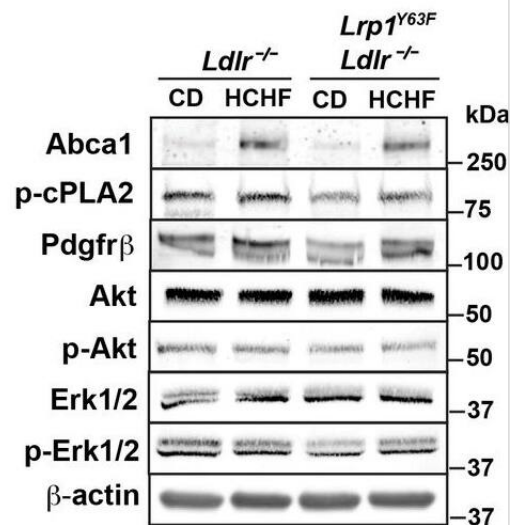
Western Blot: ABCA1 Antibody (3A1.891.3) [NB400-164] - Analysis of ABCA1 in (A) T09 treated RAW 264.7 cells and (B) untreated RAW 264.7 cells.



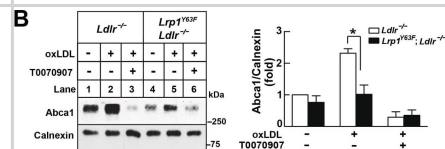
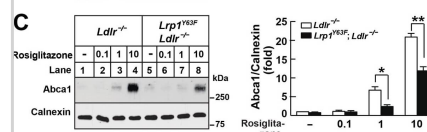
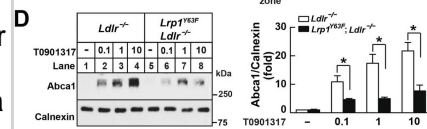
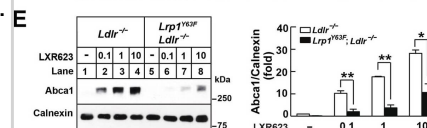
Western Blot: ABCA1 Antibody (3A1.891.3) [NB400-164] - Lrp1Y63F mutation downregulates hepatic Abca1 levels. (A) Western blot analysis of Abca1 expression in the liver from *Lrp1Y63F*; *Ldlr*<sup>-/-</sup> & *Ldlr*<sup>-/-</sup> mice fed with HCHF diet for 16 weeks (n = 5, each group). (B) Western blot analysis of Abca1 expression in the liver from 16 week HCHF-fed *Lrp1Y63F*; *Ldlr*<sup>-/-</sup> & *Ldlr*<sup>-/-</sup> mice after BMT (n = 5, each group). All data are mean  $\pm$  SEM. \*\*p<0.01. Image collected & cropped by CiteAb from the following publication (<https://elifesciences.org/articles/29292>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: ABCA1 Antibody (3A1.891.3) [NB400-164] - Lrp1Y63F mutation has no effect on atherogenic signaling pathways & morphological phenotype in SMCs. (A) Left: representative images of H&E stained descending thoracic aortas (scale bar = 50  $\mu$ m). Right: aortic wall thickness & cell number were quantified for the indicated genotypes. Data are expressed mean  $\pm$ SEM; n = 3 per group & genotype. (B) HCHF diet in Lrp1Y63F;Ldlr<sup>-/-</sup> mice has no effect on PDGF & TGF $\beta$ -mediated signaling in the aorta. Proteins were extracted from whole aorta in Lrp1Y63F;Ldlr<sup>-/-</sup> & Ldlr<sup>-/-</sup> mice fed with indicated diets. Expression of proteins involved in PDGF signaling pathways was determined by Western blot analysis. (C) Lrp1Y63F mutation did not affect atherogenic signaling pathways mediated by PDGF in vitro. Primary SMCs from WT & Lrp1Y63F mice were incubated with or without 10 ng/ml PDGF-BB for 10 min. Expression of proteins involved in PDGF signaling were determined by Western blot analysis. (D) Lrp1Y63F mutation did not alter SMC functions in vitro. Primary cultured SMCs from WT & Lrp1Y63F mice were incubated with or without 10 ng/ml PDGF-BB under indicated conditions, then cell migration (left) & proliferation (right) were determined. Values from three independent experiments are expressed as mean  $\pm$ SEM. \*p<0.05. Image collected & cropped by CiteAb from the following publication (<https://elifesciences.org/articles/29292>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

**B**

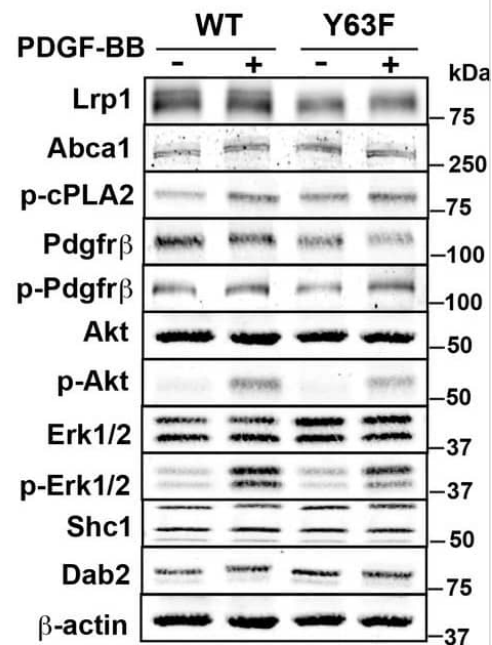
Western Blot: ABCA1 Antibody (3A1.891.3) [NB400-164] - Lrp1Y63F impairs Abca1 induction through inhibiting the PPAR $\gamma$ /LXR pathway. (A) Real-time PCR analysis of Abca1, Abca7, Pparg, Nr1h3 & Nr2h2 expression in macrophages treated with or without ox-LDL. (B–E) Isolated peritoneal macrophages from Lrp1Y63F;Ldlr<sup>-/-</sup> & Ldlr<sup>-/-</sup> were pre-incubated for 1 hr with (B) T0070907 (PPAR $\gamma$  antagonist, 10  $\mu$ M), (C) Rosiglitazone (PPAR $\gamma$  agonist) at indicated concentrations in  $\mu$ M, (D) T0901317 (nonspecific LXR agonist) at indicated concentrations in  $\mu$ M, (E) LXR623 (LXR $\beta$  full agonist & LXR $\alpha$  partial agonist) at indicated concentrations in  $\mu$ M, followed by the treatment with or without oxLDL for an additional 24 hr. Abca1 expression was assessed by immunoblot analysis (left). Protein expression was quantified & analyzed (right). Data are mean  $\pm$ SEM from three independent experiments. \*p<0.05; \*\*p<0.01. Image collected & cropped by CiteAb from the following publication (<https://elifesciences.org/articles/29292>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

**B****C****D****E**

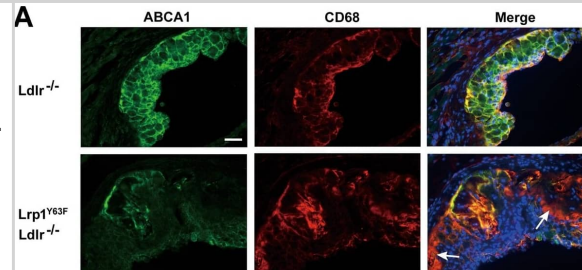
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Abca1 expression is reduced in atherosclerotic lesions in Lrp1Y63F;Ldlr<sup>-/-</sup> mice. (A) Cryo-sections of aortic roots from HCD-fed Ldlr<sup>-/-</sup> and Lrp1Y63F;Ldlr<sup>-/-</sup> mice were double-stained with Abca1 (green) and Cd68 (red) antibodies. Nuclei were stained with DAPI (blue). (B) Abca1 immunoreactivity was determined by color and normalized to lesion size. Scale bar = 200  $\mu$ m. White arrows indicate the areas of macrophages without Abca1 expression. Data are mean  $\pm$ SEM from five mice for each genotype. \*\*p<0.01. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/29144234>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

C



A



## Publications

Ishimaru K, Yoshioka K, Kano K, et al. Sphingosine kinase-2 prevents macrophage cholesterol accumulation and atherosclerosis by stimulating autophagic lipid degradation *Sci Rep* 2019-12-04 [PMID: 31797978] (WB, Mouse)

Quiroz A, Molina P, Santander N et al. Ovarian Cholesterol Efflux: ABC Transporters and Follicular Fluid HDL Regulate Cholesterol Content in Mouse Oocytes *Biol. Reprod.* 2019-08-19 [PMID: 31423535]

Xian X, Ding Y, Dieckmann M et al. LRP1 integrates murine macrophage cholesterol homeostasis and inflammatory responses in atherosclerosis *Elife.* 2017-11-16 [PMID: 29144234] (WB, Mouse)

Sultana A, Cochran BJ, Tabet F et al. Inhibition of inflammatory signaling pathways in 3T3-L1 adipocytes by apolipoprotein A-I. *FASEB J.* 2016-03-10 [PMID: 26965683] (WB, Mouse)

Do TM, Dodacki A, Alata W et al. Age-Dependent Regulation of the Blood-Brain Barrier Influx/Efflux Equilibrium of Amyloid-beta Peptide in a Mouse Model of Alzheimer's Disease (3xTg-AD). *J Alzheimers Dis* 2015-01-01 [PMID: 26484906] (Mouse)

Zhou L, Choi HY, Li WP et al. LRP1 controls cPLA2 phosphorylation, ABCA1 expression and cellular cholesterol export. *PLoS One.* 2009-08-31 [PMID: 19718435] (WB, IHC-P, Mouse)

Do TM, Noel-Hudson MS, Ribes S et al. ABCG2- and ABCG4-mediated efflux of amyloid-beta peptide 1-40 at the mouse blood-brain barrier *J Alzheimers Dis* 2012-01-01 [PMID: 22391220]

Wang F, Okamoto Y, Inoki I et al. Sphingosine-1-phosphate receptor-2 deficiency leads to inhibition of macrophage proinflammatory activities and atherosclerosis in apoE-deficient mice. *J Clin Invest.* 120(11):3979-95. doi: 10.1172/JCI42315. 2010-11-01 [PMID: 20978351]

Do TM, Ouellet M, Calon F et al. Direct evidence of abca1-mediated efflux of cholesterol at the mouse blood-brain barrier. *Mol Cell Biochem.* 2011-06-10 [PMID: 21660464] (WB, Mouse)





### **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  
nb-customerservice@bio-techne.com

### **Bio-Techne Canada**

21 Canmotor Ave  
Toronto, ON M8Z 4E6  
Canada  
Phone: 905.827.6400  
Toll Free: 855.668.8722  
Fax: 905.827.6402  
canada.inquires@bio-techne.com

### **Bio-Techne Ltd**

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.EMEA@bio-techne.com

### **General Contact Information**

www.novusbio.com  
Technical Support: nb-technical@bio-  
techne.com  
Orders: nb-customerservice@bio-techne.com  
General: novus@novusbio.com

### **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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