Product Datasheet

UNC13D/Munc 13-4 Antibody
NB100-41385

Unit Size: 0.1 mg

Store at -20C. Avoid freeze-thaw cycles.

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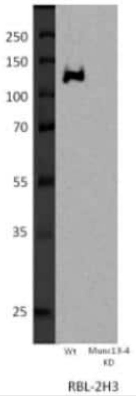
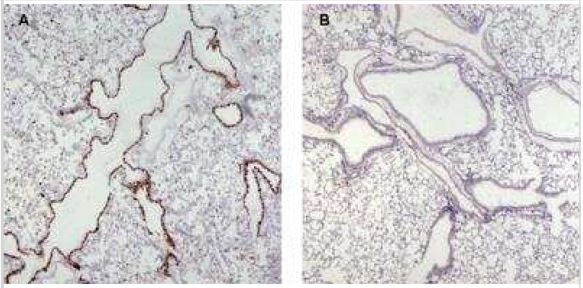
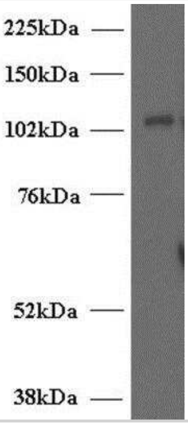
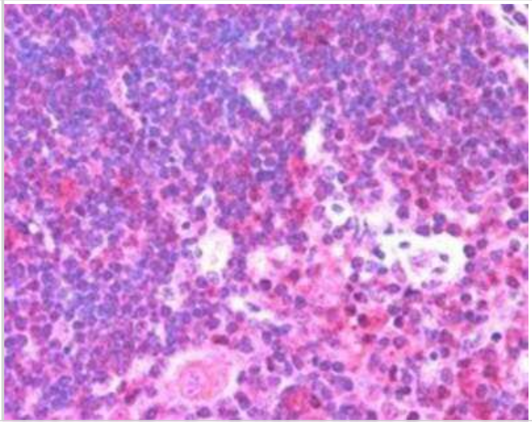
NB100-41385

UNC13D/Munc 13-4 Antibody

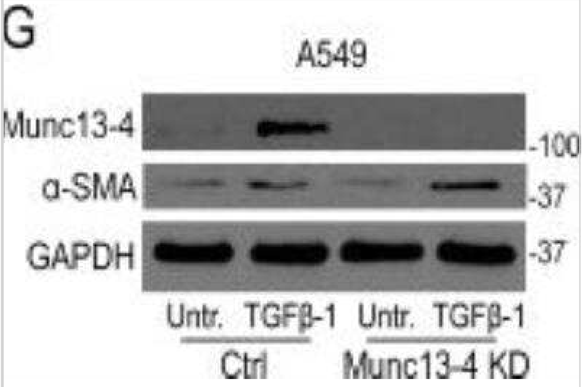
Product Information	
Unit Size	0.1 mg
Concentration	0.5 mg/ml
Storage	Store at -20C. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	Tris saline (20 mM Tris pH 7.3, 150 mM NaCl), 0.5% BSA

Product Description	
Description	Novus Biologicals Goat UNC13D/Munc 13-4 Antibody (NB100-41385) is a polyclonal antibody validated for use in IHC, WB, ELISA and ICC/IF. Anti-UNC13D/Munc 13-4 Antibody: Cited in 5 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Goat
Gene ID	201294
Gene Symbol	UNC13D
Species	Human, Mouse
Reactivity Notes	Predicted cross-reactivity based on sequence identity: Rat, Canine, Porcine, Bovine.
Immunogen	Peptide with sequence C-ETQKHKKDLHPLFD corresponding to internal region according to NP_954712.1.

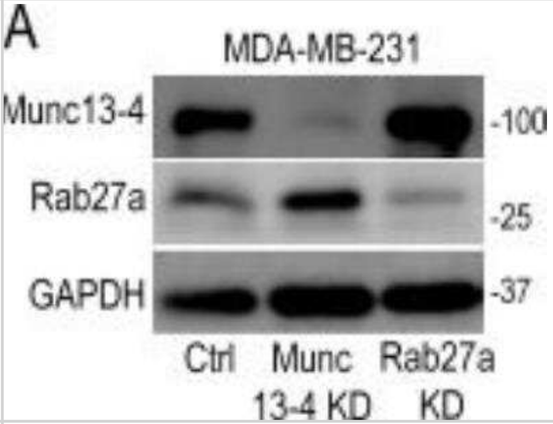
Product Application Details	
Applications	Western Blot, Immunohistochemistry-Paraffin, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Peptide ELISA, Knockdown Validated
Recommended Dilutions	Western Blot 1 - 3 ug/mL, Immunohistochemistry 2.5 ug/mL, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry-Paraffin 2.5 ug/mL, Peptide ELISA Detection limit 1:128000, Knockdown Validated
Application Notes	WB: Approx. 105 kDa band observed in human T-lymphocyte and HeLa lysates (calculated MW of 123 kDa band according to NP_954712.1). IHC-P: Human thymus shows cytoplasm staining in select areas. Mouse Lung shows staining of the resperatory epithelium in wildtype but not in the knock-out, provided by Micheal Tuvim, University of Texas MD Anderson Cancer Center, Houston, USA. Use in ICC/IF reported in scientific literature (PMID 28100639).

Images	
Western Blot: UNC13D/Munc 13-4 Antibody [NB100-41385] - RBL-2H3 from Wt or shRNA Munc13-4 lentiviral stable expression whole cell lysate. 50 ug total protein. WB image submitted by a verified customer review.	
Immunohistochemistry-Paraffin: UNC13D/Munc 13-4 Antibody [NB100-41385] - Staining of paraffin embedded Mouse Lung with antibody at 0.5 ug/mL (wt in A and KO in B).	
Western Blot: UNC13D/Munc 13-4 Antibody [NB100-41385] - Staining of Human T-lymphocyte lysate with antibody at 2 ug/mL (35 ug protein in RIPA buffer). Detected by chemiluminescence.	
Immunohistochemistry-Paraffin: UNC13D/Munc 13-4 Antibody [NB100-41385] - Staining of paraffin embedded Human Thymus. Antibody at 2.5 ug/mL. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.	

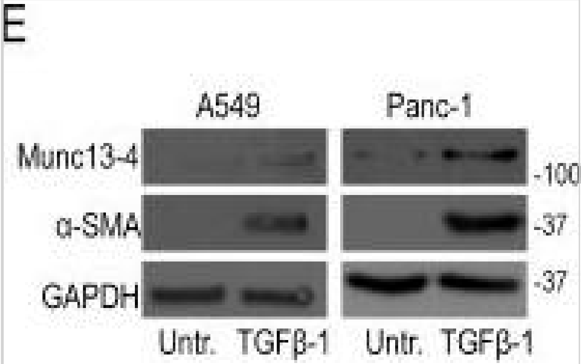
Western Blot: UNC13D/Munc 13-4 Antibody [NB100-41385] - A549 cells stably expressing control shRNA (Ctrl) or Munc13-4 shRNA were left untreated (Untr) or were treated with TGFbeta-1 for 24 h, and SDS-PAGE Western blotting for indicated proteins was conducted. Image collected and cropped by CiteAb from the following publication (jcb.org/lookup/doi/10.1083/jcb.201710132), licensed under a CC-BY license.



Western Blot: UNC13D/Munc 13-4 Antibody [NB100-41385] - SDS-PAGE Western blot of indicated proteins in MDA-MB-231 cells after stable expression of shRNA for Munc13-4 or Rab27a or a scrambled control (Ctrl). Image collected and cropped by CiteAb from the following publication (jcb.org/lookup/doi/10.1083/jcb.201710132), licensed under a CC-BY license.



Western Blot: UNC13D/Munc 13-4 Antibody [NB100-41385] - Munc13-4 KD strongly impairs exosome release. (A) SDS-PAGE Western blot of indicated proteins in MDA-MB-231 cells after stable expression of shRNA for Munc13-4 or Rab27a or a scrambled control (Ctrl). (B) Culture medium from MDA-MB-231 cells either untreated or stimulated w/ 1.25 µM ionomycin for 30 min centrifuged at 1,000 g to remove cellular debris & 10,000 g to remove large extracellular vesicles. (C) The resulting 10,000-g supernatant filtered onto a nitrocellulose membrane & analyzed for CD63, CD9, ALIX, & GM130 content by antibody blotting. (D) Quantification of CD63, CD9, & ALIX blots in C are shown as exosome release as a percentage of total cellular material w/ mean values ± standard error (SE) for n ≥ 3. *, $P < 0.05$ for comparison w/ corresponding control samples. (E) Panc-1 or A549 cells left untreated or treated w/ TGFβ-1 for 24 h. Indicated proteins detected by SDS-PAGE Western blot. (F) Panc-1 cells left untreated or treated w/ TGFβ-1 for 24 h, & Munc13-4 levels determined by immunofluorescence. TGFβ-1–treated cells exhibited a mesenchymal morphology. Bars, 5 µm. (G) A549 cells stably expressing control shRNA (Ctrl) or Munc13-4 shRNA left untreated (Untr) or treated w/ TGFβ-1 for 24 h, & SDS-PAGE Western blotting for indicated proteins conducted. (H) Culture media supernatants (as in B) from A549 cells that either untreated or stimulated w/ 1.25 µM ionomycin for 30 min filtered onto nitrocellulose membrane & analyzed for CD63 & GM130. (I) Quantification of CD63+ exosome release shown as a percentage of total cellular material w/ mean values ± SE for n = 5. *, $P < 0.05$; **, $P < 0.01$ for comparison w/ corresponding control samples. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/29930202), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



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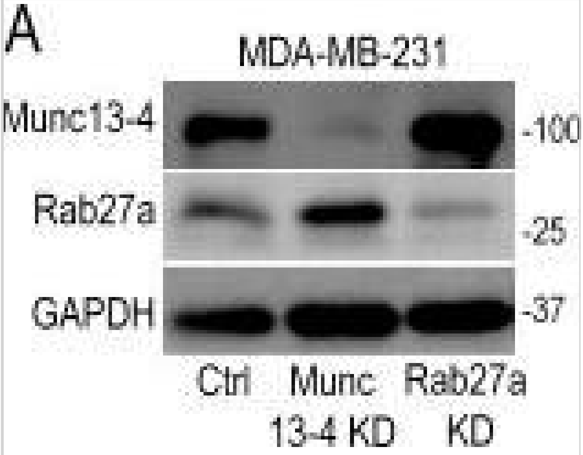

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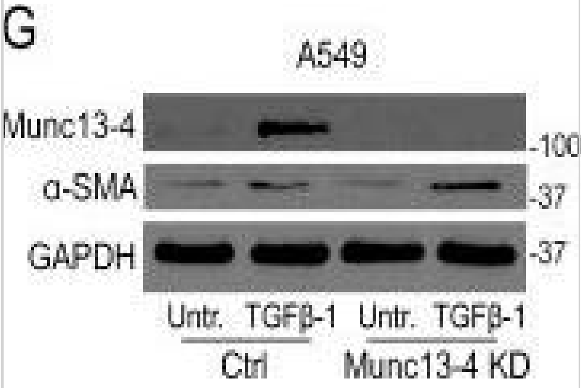
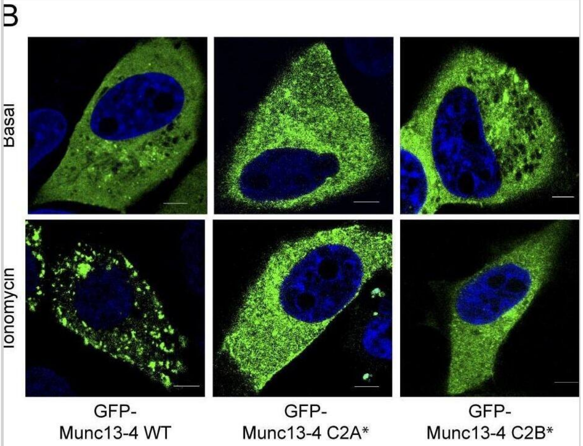


Munc13-4 translocation to membrane is Ca2+ dependent. (A) Live-cell epifluorescence imaging of GFP-Munc13-4 in MDA-MB-231 cells at indicated times after ionomycin stimulation. See Video 1. (B) MDA-MB-231 cells expressing wild-type GFP-Munc13-4, GFP-Munc13-4 C2A*, or GFP-Munc13-4 C2B* either left untreated or stimulated with 1.25 uM ionomycin for 5 min were fixed and imaged by confocal microscopy. (C) Indicated proteins were detected by SDS-PAGE and Western blotting of lysates with Munc13-4 antibody from MDA-MB-231 cells stably expressing control shRNA (Ctrl) or shRNA targeting Munc13-4 (KD), or Munc13-4 KD cells rescued with shRNA-resistant wild-type Munc13-4, Munc13-4 C2A*, or Munc13-4 C2B*. (D) Culture media supernatants (as in Fig. 1 B) from MDA-MB-231 cells as in C either untreated or stimulated with 1.25 uM ionomycin for 30 min were filtered onto membrane and analyzed for CD63 or GM130. (E) Quantification of CD63+ exosome release (from Fig 1 D) shown as mean values +/- SE for n = 3. *, P < 0.05 for comparison between ionomycin-treated and basal. Bars, 5 µm. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/29930202), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	

Publications

Man KNM. Role of Munc13 Isoforms in Regulating Large Dense Core Vesicle Exocytosis in Chromaffin Cells. J Neurochem 2010-04-21 [PMID: 20403080]

Messenger SW, Woo SS, Sun Z, Martin TFJ. A Ca2+-stimulated exosome release pathway in cancer cells is regulated by Munc13-4 J. Cell Biol. 2018-06-21 [PMID: 29930202] (WB, Human)

Woo SS, James DJ, Martin TF. Munc13-4 functions as a Ca2+ sensor for homotypic secretory granule fusion to generate endosomal exocytic vacuoles. Mol Biol Cell 2017-01-18 [PMID: 28100639] (ICC/IF, Human)

Man KN, Imig C, Walter AM et al. Identification of a Munc13-sensitive step in chromaffin cell large dense-core vesicle exocytosis. Elife 2015-11-17 [PMID: 26575293] (WB)

Man KNM. Role of Munc13 Isoforms in Regulating Large Dense Core Vesicle Exocytosis in Chromaffin Cells. Thesis. (WB, Mouse)

Zur Stadt U, Beutel K, Kolberg S et al. Mutation spectrum in children with primary hemophagocytic lymphohistiocytosis: molecular and functional analyses of PRF1, UNC13D, STX11, and RAB27A. Hum Mutat 2006-01-01 [PMID: 16278825]

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HAF109	Donkey anti-Goat IgG Secondary Antibody [HRP (Horseradish Peroxidase)]
NB410-28088-1mg	Goat IgG Isotype Control

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