

# Product Datasheet

## MUC1 Antibody - BSA Free

### NBP1-60046

Unit Size: 0.1 mg

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

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Updated 10/23/2024 v.20.1

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**NBP1-60046**

MUC1 Antibody - BSA Free

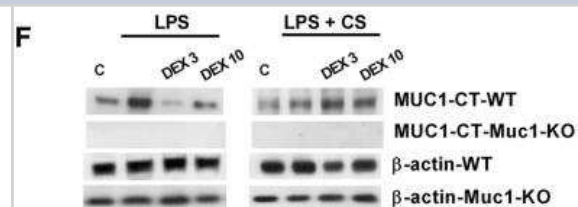
Product Information	
Unit Size	0.1 mg
Concentration	1.0 mg/ml
Storage	Store at -20C. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Target Molecular Weight	122 kDa

Product Description	
Host	Rabbit
Gene ID	4582
Gene Symbol	MUC1
Species	Human, Mouse, Rat, Porcine, Bovine, Equine, Guinea Pig, Goat, Rabbit
Reactivity Notes	Goat reactivity reported in scientific literature (PMID: 28740504). Predicted to react with bovine (82%) and lar gibbon (94%) based on immunogen sequence similarity.
Specificity/Sensitivity	The immunogen for this antibody has 100% homology to human MUC1 isoforms S2, E2, 9, F, T10, 5, Y, Y-LSP, 8, 4, 3, 2, 1 and J13.
Immunogen	Synthetic peptides corresponding to a C terminal portion of the human MUC1 (between amino acids 1200-1250) [UniProt P15941].

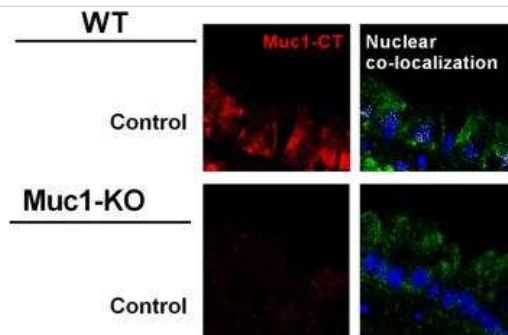
Product Application Details	
Applications	Western Blot, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin, Knockout Validated
Recommended Dilutions	Western Blot 0.2-1 ug/ml, Flow Cytometry reported in scientific literature (PMID 28740504), Immunohistochemistry 1:10-1:500, Immunocytochemistry/ Immunofluorescence 1:10-1:500, Immunohistochemistry-Paraffin 4-8 ug/ml, Knockout Validated

**Images**

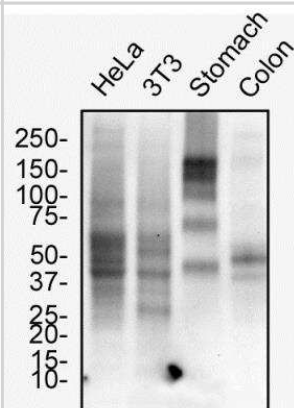
Knockout Validated: MUC1 Antibody - BSA Free [NBP1-60046] - MUC1 Antibody [NBP1-60046] - C57BL/6 Muc1 KO mice and WT mice were undergoing intranasal instillation of 75 ug of lipopolysaccharide (LPS) at day 1. Between days 2 and 3, animals were exposed to cigarette smoke (or control air) of 6 cigarettes followed by 8 cigarettes (or control air) at days 4 and 5, and 10 cigarettes (or control air) at day 6. Vehicle or dexamethasone at 3 mg/kg/day and 10 mg/kg/day was administered orally once a day between day 1 and 6. Animals were sacrificed at day 6 and lungs were homogenized to analyze protein expression of Muc1 cytoplasmic tail (CT). Protein expression was normalized to B-actin. Image collected and cropped by CiteAb from the following publication (<https://respiratory-research.biomedcentral.com/articles/10.1186/s12931-018-0927-4>) licensed under a CC-BY license.



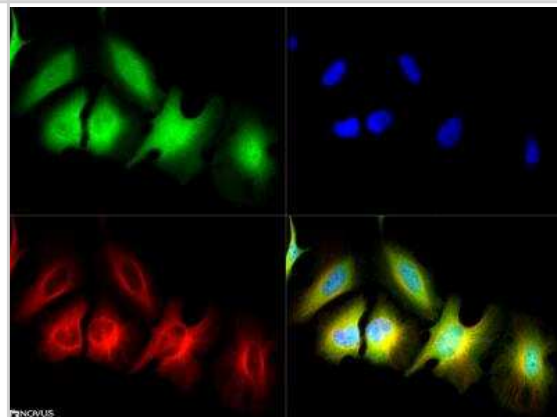
**Knockout Validated: MUC1 Antibody [NBP1-60046] - Dexamethasone induces Muc1-CT nuclear translocation and co-localization with GRa in bronchial epithelium of WT mice but not in MUC1 KO mice.** C57BL/6 Muc1 KO mice and WT mice were undergoing dexamethasone 10 mg/kg/day (orally) for 6 days. Animals were sacrificed at day 6 and lungs were fixed in paraformaldehyde (4%) for 48 h and embedded. Lung slices were immunostained with MUC1-cytoplasmic tail (CT) (red) and glucocorticoid receptor alpha (GRa) antibodies (green) with rhodamine/fluorescein secondary antibodies. DAPI was used to mark cell nucleus. Representative con-focal images are showed. Scale bar: 5 um. Image collected and cropped by CiteAb from the following publication (<https://respiratory-research.biomedcentral.com/articles/10.1186/s12931-018-0927-4>) licensed under a CC-BY license.



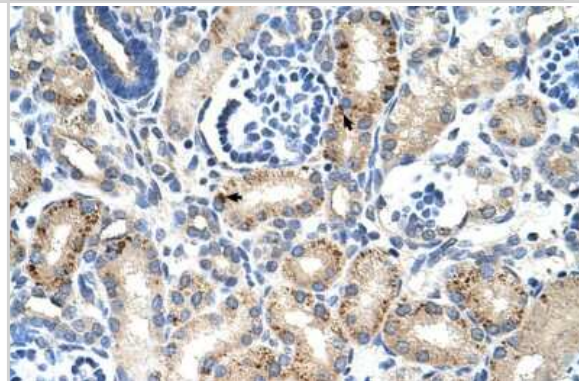
**Western Blot: MUC-1 Antibody [NBP1-60046] - Total protein from mouse 3T3 cells and human HeLa cells, stomach and colon was separated on a 4-15% gel by SDS-PAGE, transferred to PVDF membrane and blocked in 5% non-fat milk in TBST. The membrane was probed with 2.0 ug/ml anti-MUC-1 in 1% non-fat milk in TBST and detected with an anti-rabbit HRP secondary antibody using chemiluminescence.**



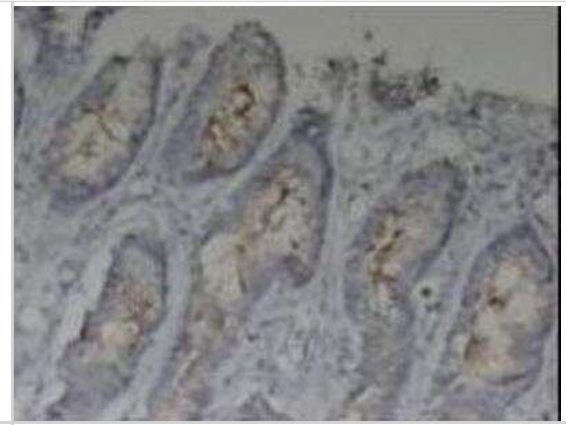
**Immunocytochemistry/Immunofluorescence: MUC1 Antibody [NBP1-60046] - Tested in HeLa cells at a 1:50 dilution against DyLight 488 (Green). Cells were counterstained for alpha-tubulin against DyLight 550 (Red) and mounted in DAPI fluoromount (Blue).**



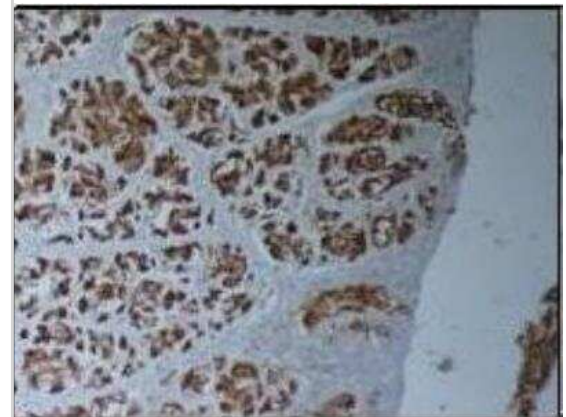
**Immunohistochemistry-Paraffin: MUC1 Antibody [NBP1-60046] - Human kidney lysate tissue at an antibody concentration of 4-8ug/ml.**



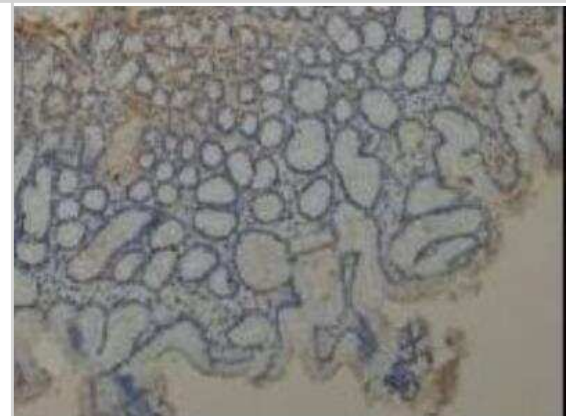
Immunohistochemistry-Paraffin: MUC1 Antibody [NBP1-60046] - Pig stomach.



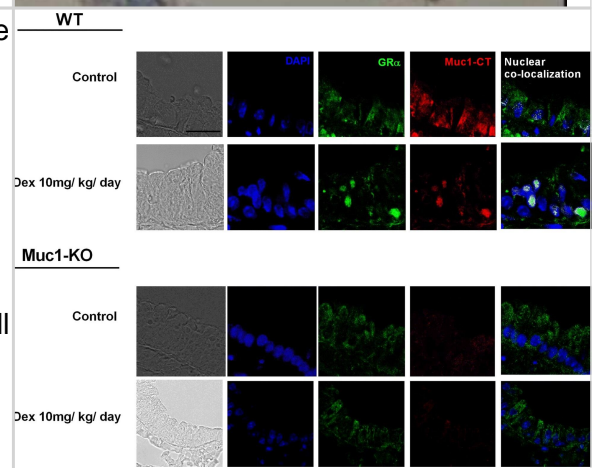
Immunohistochemistry-Paraffin: MUC1 Antibody [NBP1-60046] - Pig stomach.



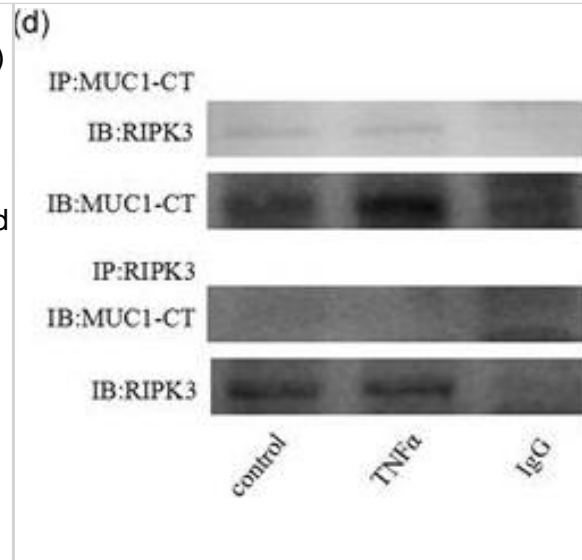
Immunohistochemistry-Paraffin: MUC1 Antibody [NBP1-60046] - Human stomach.



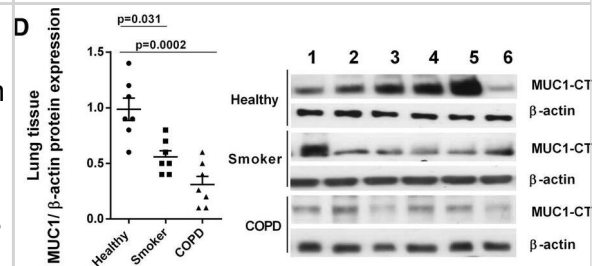
Immunocytochemistry/ Immunofluorescence: MUC1 Antibody - BSA Free [NBP1-60046] - Dexamethasone induces Muc1-CT nuclear translocation & co-localization with GR $\alpha$  in bronchial epithelium of WT mice but not in MUC1 KO mice. C57BL/6 Muc1 KO mice & WT mice were undergoing dexamethasone 10 mg/kg/day (orally) for 6 days. Animals were sacrificed at day 6 & lungs were fixed in paraformaldehyde (4%) for 48 h & embedded in Tissue-Tek<sup>®</sup> OCT<sup>™</sup> cryosectioning compound. Lung slices were immunostained with MUC1-cytoplasmic tail (CT) & glucocorticoid receptor alpha (GR $\alpha$ ) antibodies with rhodamine/fluorescein secondary antibodies. DAPI was used to mark cell nucleus. Representative con-focal images are showed. Scale bar: 5  $\mu$ m Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/30458870>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



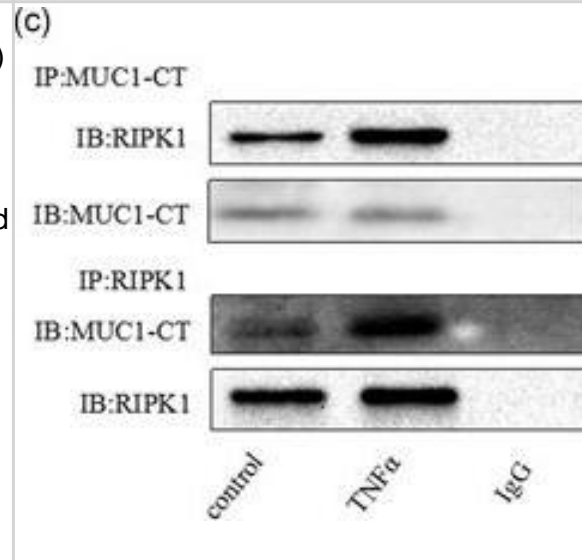
Chromatin Immunoprecipitation: MUC1 Antibody - BSA Free [NBP1-60046] - MUC1 binds RIPK1 to mediate the RIPK1/RIPK3 pathway. (a,b) MUC1 knockdown by MUC1 siRNA or NC siRNA were assayed in 16HBE cells following stimulation with TNF $\alpha$  (300 ng/ml). After 24 hr of stimulation, RIPK3 & RIPK1 protein levels were measured by western blot analysis. (c,d) Normal 16HBE cells were treated with TNF $\alpha$  for 24 hr, & the interaction between MUC1-CT & RIPK1/RIPK3 were confirmed by immunoprecipitation. Data are expressed as means  $\pm$  SD & were analyzed by one-way analysis of variance, \* $p < 0.05$ . NC group (transfected with NC siRNA); MUC1 siRNA group (transfected with MUC1 siRNA). 16HBE: human bronchial epithelial; IB: immunoblotting; IP: immunoprecipitation; RIPK1: receptor-interacting protein kinase 1; RIPK3: receptor-interacting protein kinase 3; NC: negative control; siRNA: small interfering RNA; TNF $\alpha$ : tumor necrosis factor $\alpha$  Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/30666647>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: MUC1 Antibody - BSA Free [NBP1-60046] - MUC1 downregulation & TLR4 overexpression in lung tissue from heavy smokers & COPD patients. Lung tissue from healthy (n = 10), smokers (n = 11) & COPD patients (n = 13) were analysed. MUC1 mRNA gene expression in lung tissue homogenates (a), bronchial epithelial cells (b) & sputum neutrophils (c). d MUC1-CT protein expression in lung homogenates. TLR4 mRNA gene expression in lung tissue homogenates (e), bronchial epithelial cells (f) & sputum neutrophils (g). h MUC1-CT protein expression in lung homogenates. i Correlation of TLR4 & MUC1 gene expression in lung tissue from smokers & COPD patients. j Correlation of FEV1% & MUC1 gene expression in lung tissue from smokers & COPD patients. Gene expression was analyzed by real time PCR using the  $2^{-\Delta\Delta C_t}$  as described in methods. Protein expression was analyzed by western blot. Representative western blot are showed. Data are presented as median with interquartile range. "P" exact values were obtained following Kruskal Wallis test. FEV1%: forced expiratory volume in 1 s Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/30458870>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Chromatin Immunoprecipitation: MUC1 Antibody - BSA Free [NBP1-60046] - MUC1 binds RIPK1 to mediate the RIPK1/RIPK3 pathway. (a,b) MUC1 knockdown by MUC1 siRNA or NC siRNA were assayed in 16HBE cells following stimulation with TNF $\alpha$  (300 ng/ml). After 24 hr of stimulation, RIPK3 & RIPK1 protein levels were measured by western blot analysis. (c,d) Normal 16HBE cells were treated with TNF $\alpha$  for 24 hr, & the interaction between MUC1-CT & RIPK1/RIPK3 were confirmed by immunoprecipitation. Data are expressed as means  $\pm$  SD & were analyzed by one-way analysis of variance, \* $p < 0.05$ . NC group (transfected with NC siRNA); MUC1 siRNA group (transfected with MUC1 siRNA). 16HBE: human bronchial epithelial; IB: immunoblotting; IP: immunoprecipitation; RIPK1: receptor-interacting protein kinase 1; RIPK3: receptor-interacting protein kinase 3; NC: negative control; siRNA: small interfering RNA; TNF $\alpha$ : tumor necrosis factor $\alpha$  Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/30666647>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



## Publications

Guild J, Juul NH, Andalon A et al. Evidence for lung barrier regeneration by differentiation prior to binucleated and stem cell division *The Journal of cell biology* 2023-12-04 [PMID: 37843535]

Sengupta A, Roldan N, Kiener M et al. A New Immortalized Human Alveolar Epithelial Cell Model to Study Lung Injury and Toxicity on a Breathing Lung-On-Chip System *Frontiers in Toxicology* 2022-06-17 [PMID: 35832493] (Immunocytochemistry/ Immunofluorescence)

Juul NH, Yoon JK, Martinez MC et al. KRAS(G12D) drives lepidic adenocarcinoma through stem-cell reprogramming *Nature* 2023-07-01 [PMID: 37468622] (IHC, Mouse)

Sun YC, Hung KF, Li TY Et al. Transmembrane Mucin 1 Blocks Fluorescein Ingress to Corneal Epithelium *Invest Ophthalmol Vis Sci* 2022-02-25 [PMID: 35212722] (IHC-Fr, Rabbit)

### Details:

Citation using the Biotin version of this antibody.

Ballester B, Milara J, Cortijo J Pirfenidone anti-fibrotic effects are partially mediated by the inhibition of MUC1 bioactivation *Oncotarget* 2020-04-14 [PMID: 32341751] (WB, Human)

Rosa F, Osorio JS, Trevisi E et al. 2, 4-Thiazolidinedione Treatment Improves the Innate Immune Response in Dairy Goats with Induced Subclinical Mastitis. *PPAR Res.* [PMID: 28740504] (FLOW, Goat)

Zhang H, Ji J, Liu Q, Xu S. MUC1 downregulation promotes TNF- $\alpha$ -induced necroptosis in human bronchial epithelial cells via regulation of the RIPK1/RIPK3 pathway. *J. Cell. Physiol.* 2019-01-21 [PMID: 30666647] (WB, Human)

Milara J, Diaz-Platas L, Contreras S et al. MUC1 deficiency mediates corticosteroid resistance in chronic obstructive pulmonary disease. *Respir. Res.* 2018-11-20 [PMID: 30458870] (WB, Human)





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HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control
NBP1-60046B	MUC1 Antibody [Biotin]

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### **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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