

Product Datasheet

MUC1 Antibody (SM3) - BSA Free NB120-22711

Unit Size: 0.1 ml

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

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NB120-22711

MUC1 Antibody (SM3) - BSA Free

Product Information	
Unit Size	0.1 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Monoclonal
Clone	SM3
Preservative	0.02% Sodium Azide
Isotype	IgG2a Kappa
Purity	Protein G purified
Buffer	PBS

Product Description	
Host	Mouse
Gene ID	4582
Gene Symbol	MUC1
Species	Human, Mouse
Reactivity Notes	Mouse reactivity reported in scientific literature (PMID: 1372533) No record of testing in other species.
Specificity/Sensitivity	Reacts very little with normal tissue. Found to react with breast, colon and ovarian carcinomas and adenocarcinoma. SM3 recognizes the under-glycosylated form of MUC1 and is therefore tumor specific.
Immunogen	Hydrogen fluoride deglycosylated milk mucin.

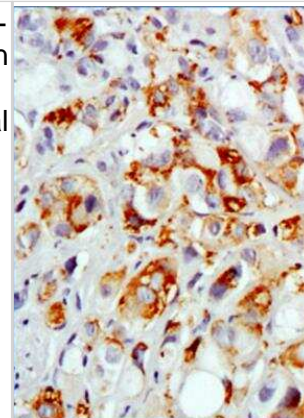
Product Application Details	
Applications	ELISA, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin
Recommended Dilutions	Flow Cytometry reported in multiple pieces of scientific literature, ELISA reported in multiple pieces of scientific literature, Immunohistochemistry 1:10-1:500, Immunocytochemistry/ Immunofluorescence 1-5 ug/ml, Immunohistochemistry-Paraffin 1:10-1:500, Immunohistochemistry-Frozen 1:10-1:500
Application Notes	IHC-Fr and IHC-P: Use at an assay dependent dilution.

Images

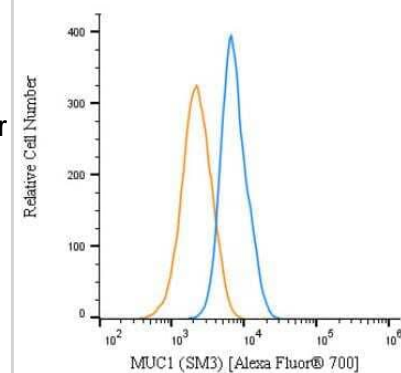
Immunocytochemistry/Immunofluorescence: MUC-1 Antibody (SM3) [NB120-22711] - MCF7 cells were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X PBS + 0.05% Triton-X100. The cells were incubated with anti-MUC1 [SM3] at 5 ug/ml overnight at 4C and detected with an anti-mouse IgG Dylight 488 (Green) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.



Immunohistochemistry-Paraffin: MUC-1 Antibody (SM3) [NB120-22711] - IHC analysis of formalin fixed paraffin embedded tissue section of human breast cancer xenograft using MUC-1 antibody clone SM3 at 1:10 dilution. The xenograft section depicted a very specific and intense signal in the periphery of the cancer cells. The necrotic cells also developed a strong immune-positivity while the tumor stroma as well as the nuclei of cells were negative for immunostaining.

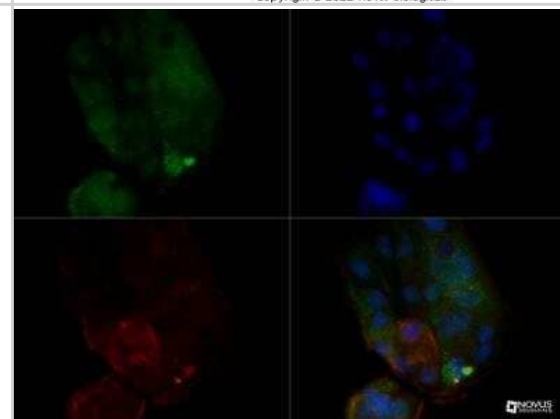


Flow Cytometry: MUC1 Antibody (SM3) - BSA Free [NB120-22711] - An intracellular stain was performed on MCF7 cells with MUC1 Antibody (SM3) NB120-22711AF700 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 700.

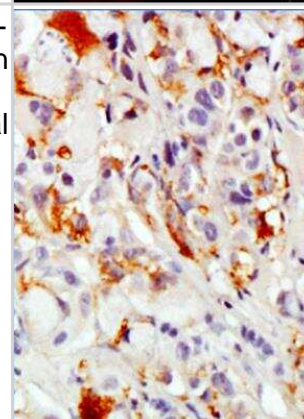


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Immunocytochemistry/Immunofluorescence: MUC-1 Antibody (SM3) [NB120-22711] - MUC-1 antibody was tested in MCF7 cells at 10 ug/ml using a Dylight 488 conjugated secondary antibody (Green). Actin (Red) and DNA (Blue) were counterstained using Phalloidin 568 and DAPI.



Immunohistochemistry-Paraffin: MUC-1 Antibody (SM3) [NB120-22711] - IHC analysis of formalin fixed paraffin embedded tissue section of human breast cancer xenograft using MUC-1 antibody clone SM3 at 1:10 dilution. The xenograft section depicted a very specific and intense signal in the periphery of the cancer cells. The necrotic cells also developed a strong diffused immune-positivity while the tumor stroma as well as the nuclei of cells were negative for immunostaining.



Publications

Salem DP, Bortolin LT, Gusenleitner D et al. Colocalization of cancer-associated biomarkers on single extracellular vesicles for early detection of cancer. *The Journal of molecular diagnostics* : JMD 2024-09-24 [PMID: 39326670]

Lucarelli G, Netti GS, Rutigliano M et al. MUC1 Expression Affects the Immunoflogosis in Renal Cell Carcinoma Microenvironment through Complement System Activation and Immune Infiltrate Modulation *International journal of molecular sciences* 2023-03-02 [PMID: 36902242] (IHC, Human)

Nalawade SA, Shafer P, Bajgain P Et al. Selectively targeting myeloid-derived suppressor cells through TRAIL receptor 2 to enhance the efficacy of CAR T cell therapy for treatment of breast cancer *J Immunother Cancer* 2021-11-24 [PMID: 34815355]

Details:

Citation using the Alexa Fluor 700 version of this antibody.

Peat N, Gendler SJ, Lalani N et al. Tissue-specific expression of a human polymorphic epithelial mucin (MUC1) in transgenic mice. *Cancer Res.* 1992-04-01 [PMID: 1372533] (IF/IHC, Mouse, Human)

Mommers EC, Leonhart AM, von Mensdorff-Pouilly S et al. Aberrant expression of MUC1 mucin in ductal hyperplasia and ductal carcinoma In situ of the breast. *Int J Cancer.* 1999-10-22 [PMID: 10502721] (IF/IHC, Human)

Kotera Y, Fontenot JD, Pecher G et al. Humoral immunity against a tandem repeat epitope of human mucin MUC-1 in sera from breast, pancreatic, and colon cancer patients. *Cancer Res.* 1994-06-01 [PMID: 7514493] (IF/IHC, Human)

Dalziel M, Whitehouse C, McFarlane I et al. The relative activities of the C2GnT1 and ST3Gal-I glycosyltransferases determine O-glycan structure and expression of a tumor-associated epitope on MUC1. *J Biol Chem* 2001-04-06 [PMID: 11118434] (FLOW, Human)

Henderikx P, Kandiloqiannaki M, Petrarca C et a.l. Human single-chain Fv antibodies to MUC1 core peptide selected from phage display libraries recognize unique epitopes and predominantly bind adenocarcinoma. *Cancer Res.* 1998-10-01 [PMID: 9766660] (FLOW, Human)

Bohm CM, Mulder MC, Zennadi R et al. Carbohydrate recognition on MUC1-expressing targets enhances cytotoxicity of a T cell subpopulation. *Scnd J Immunol.* 1997-07-01 [PMID: 9246205] (FLOW, Human)

Brockhausen I, Yang JM Burchell J et al. Mechanisms underlying aberrant glycosylation of MUC1 mucin in breast cancer cells *Eur J Biochem.* 1995-10-15 [PMID: 7588808] (FLOW, Human)

Sorensen AL, Reis CA, Tarp MA et al. Chemoenzymatically synthesized multimeric Tn/STn MUC1 glycopeptides elicit cancer-specific anti-MUC1 antibody responses and override tolerance. *Glycobiology.* 2006-02-16 [PMID: 16207894] (ELISA, Human)

Karsten U, Diotel c, Klich g et al. Enhanced binding of antibodies to the DTR motif of MUC1 tandem repeat peptide is mediated by site-specific glycosylation. *Cancer Res.* 1998-06-15 [PMID: 9635576] (ELISA, Human)

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Procedures

Immunocytochemistry/ Immunofluorescence Protocol for MUC1 Antibody (NB120-22711)

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. Permeabilize the cells with 0.1% Triton X100 or other suitable detergent for 10 min.
4. Remove the permeabilization 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.





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Products Related to NB120-22711

HAF007	Goat anti-Mouse IgG Secondary Antibody [HRP]
NB720-B	Rabbit anti-Mouse IgG (H+L) Secondary Antibody [Biotin]
NBP1-96981-0.5mg	Mouse IgG2a Kappa Isotype Control (M2AK)
NB120-22711AF700	MUC1 Antibody (SM3) [Alexa Fluor® 700]

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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