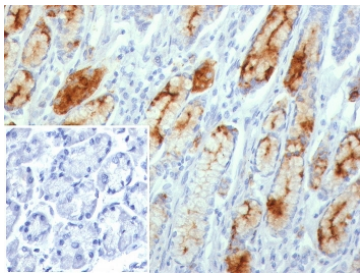
MUC1 Antibody / Mucin-1 [clone MUC1/8109R] (V4747)

Catalog No.	Formulation	Size
V4747-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4747-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4747SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MUC1/8109R
Purity	Protein A/G affinity
UniProt	P15941
Localization	Cytoplasm, Cell surface
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This MUC1 antibody is available for research use only.



Immunohistochemistry analysis of MUC1 / Mucin-1 antibody (clone MUC1/8109R) in human stomach tissue. FFPE human stomach section shows strong membranous and apical cytoplasmic brown chromogenic staining in gastric epithelial cells lining glandular structures, consistent with MUC1 expression, while stromal cells exhibit minimal staining and nuclei appear blue. The inset shows PBS used in place of primary antibody as a negative control with no specific staining observed. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 10 mM Tris with 1 mM EDTA for 20 minutes followed by cooling prior to staining.

Description

MUC1 antibody targets Mucin-1, a transmembrane glycoprotein encoded by the human MUC1 gene and a prominent member of the membrane-bound mucin family. Mucin-1, also widely referred to as MUC1 and epithelial membrane

antigen in the literature, is primarily localized to the apical surface of epithelial cells where it contributes to barrier protection and cell signaling. MUC1 antibody is frequently used in studies of epithelial differentiation and carcinoma biology because Mucin-1 is characteristically overexpressed and aberrantly glycosylated in many epithelial malignancies.

MUC1 is synthesized as a large precursor that undergoes autocatalytic cleavage into two subunits that remain non-covalently associated at the cell surface. Its extracellular domain contains tandem repeat sequences that are extensively O-glycosylated, forming a protective mucin layer. In normal tissues, Mucin-1 expression is polarized to the apical membrane of glandular and ductal epithelial cells. In cancer, however, MUC1 often loses apical restriction, becomes diffusely expressed across the cell surface, and exhibits altered glycosylation patterns that expose core peptide epitopes. MUC1 antibody is therefore valuable for investigating tumor-associated antigen expression and epithelial transformation.

The cytoplasmic tail of Mucin-1 participates in intracellular signaling by interacting with beta-catenin and other regulatory proteins, influencing proliferation, apoptosis resistance, and metastatic potential. Elevated MUC1 expression has been documented in breast, ovarian, pancreatic, lung, and colorectal carcinomas, where it is frequently associated with aggressive disease. Because of its diagnostic and biological relevance, MUC1 antibody is widely applied in cancer research and tumor characterization studies.

Structurally, Mucin-1 consists of an extracellular mucin domain with variable number tandem repeats, a transmembrane region, and a short cytoplasmic tail involved in signal transduction. A MUC1 antibody is suitable for detecting Mucin-1 expression in epithelial tissues, carcinoma models, and tumor biology research applications.

Application Notes

Optimal dilution of the MUC1 antibody should be determined by the researcher.

Immunogen

Recombinant full-length human MUC1 protein was used as the immunogen for the MUC1 antibody.

Storage

Aliquot the MUC1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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