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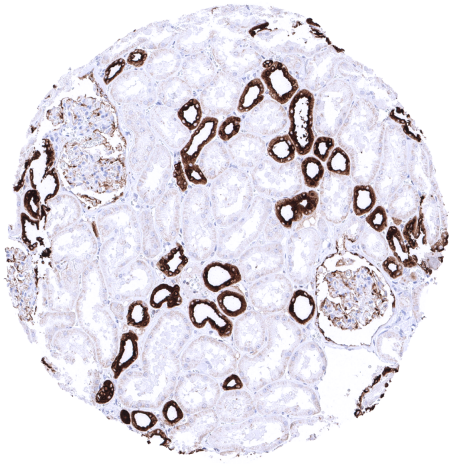
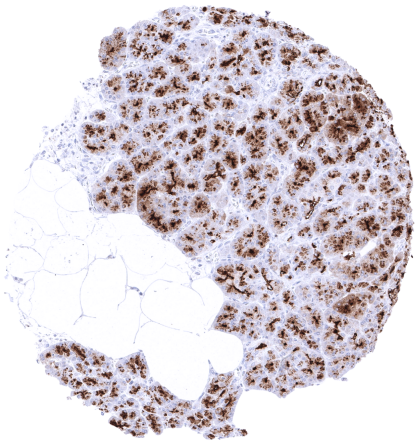
Anti- MUC1 Antibody
MSVA-672R / Recombinant Rabbit monoclonal

Human SwissProt	P15941
Human Gene Symbol	MUC1
Synonyms	Breast carcinoma-associated antigen DF3, CA15-3, Carcinoma-associated mucin Episialin, Epithelial Membrane Antigen, H23AG, KL-6, MAM6, MUC-1, MUC-1/SEC, MUC-1/X, MUC1-alpha, MUC1-beta, MUC1-CT, MUC1-NT, MUC1/ZD, Mucin 1 cell surface associated, Mucin-1 subunit beta, Peanut-reactive urinary mucin, PEM, PEMT, Polymorphic epithelial mucin, PUM, Tumor-associated epithelial membrane antigen
Specificity	MUC1
Immunogen	Recombinant fragment of human MUC1 protein
Isotype	Rabbit / IgG
Species Reactivity	Human

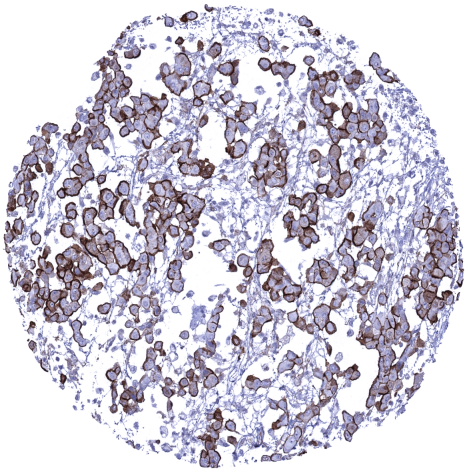
Localization	Cytoplasmic & Cell Surface
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Kidney: distal tubuli and collecting ducts show a strong cytoplasmic MUC1 staining while the staining should be at least moderate in the parietal and visceral sheets of the Bowman's capsule and largely absent in proximal tubuli.
Negative Control	Colon: MUC1 staining should be very weak or absent in colonic epithelium.



Malignant mesothelioma (epitheloid variant) with strong, predominantly membranous EMA immunostaining of tumor cells.



Pancreas - Pancreatic acinar cells show a strong MUC1 immunostaining of the apical membranes and of granular (Golgi like) structures below the apical surface.



Kidney, cortex - In the kidney, distal tubuli and collecting ducts show a strong cytoplasmic MUC1 staining while proximal tumuli are negative and cells of the Bowman's capsule show weak to moderate positivity.

Biology

Epithelial membrane antigen (EMA), also called Mucin 1 (MUC1), is a glycoprotein encoded by the MUC1 gene at 1q21. The protein is attached to the apical cell membrane of a large number of different epithelial cell types by a transmembrane domain. MUC1 is characterized by extensive glycosylation of its extracellular domain. If maximally glycosylated, MUC1 reaches a protein mass of up to 500 kDa and extends 200-500 nm beyond the cell surface. As other mucins, MUC1 lines the apical surface of various epithelial cells in order to protect these from infection by preventing the pathogen from reaching the cell surface. MUC1 also contains a cleavage site for sheddase induced release of the large extracellular domain. The protein also plays a role in cell signaling. In the cell nucleus, the protein MUC1 regulates the activity of transcription factors. Cancer studies have suggested a role of MUC1 in preventing cell death and promoting tumor invasion. MUC1 is expressed in a broad range of normal epithelial tissues. Overexpression, aberrant intracellular localization, and changes in glycosylation of MUC1 are common in carcinomas of various different types.

Potential Research Applications

-A comprehensive study analyzing MUC1 expression in various different tumor entities would be helpful to assess the diagnostic significance of MUC1 IHC.
-MUC1 is a potential therapeutic that can potentially be utilized for various different treatment modalities.
-The signaling role of MUC1 is incompletely understood.

Protocol Suggestions

Dilution: 1:100 ; pH 7,8 is optimal. Freshly cut sections should be used (less than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

This antibody is available for **research use only** and is not approved for use in diagnostics.

Warranty

There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.

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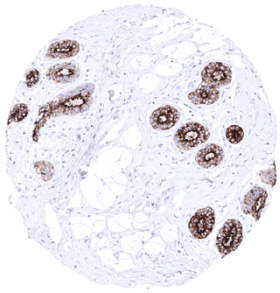
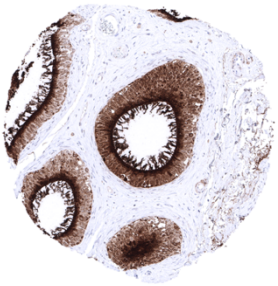
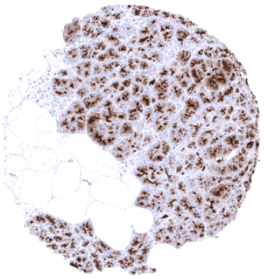


Breast - A moderate to strong cytoplasmic MUC1 immunostaining with apical predominance is seen in breast glands. MUC1 staining may be weaker in basal cells

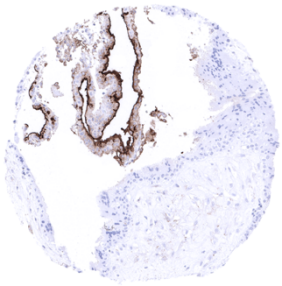


Epididymis - In the epididymis the staining varies from strong diffuse cytoplasmic with apical predominance to only apical membranous staining. This sample

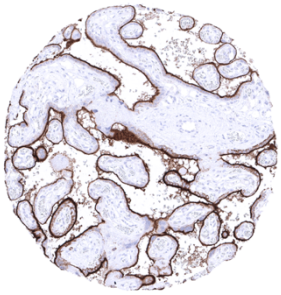
Fallopian tube, mucosa - A strong cytoplasmic MUC1 immunostaining with apical predominance is seen in the epithelium of the fallopian tube.



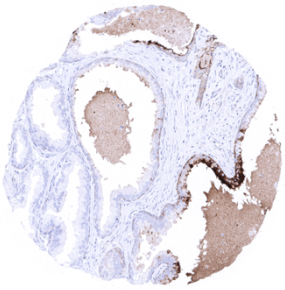
Pancreas - Pancreatic acinar cells show a strong MUC1 immunostaining of the apical membranes and of granular (Golgi like) structures below the apical surface



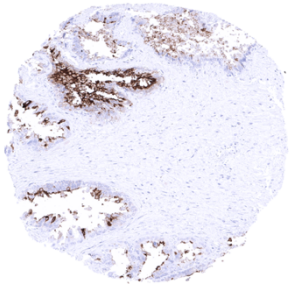
Placenta, early - In the first trimenon, a predominantly membranous MUC1 staining can occur in a fraction of trophoblastic cells



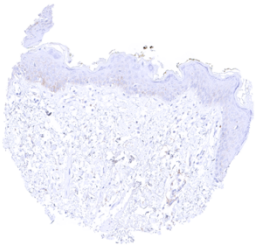
Placenta, mature - In the mature placenta, a predominantly membranous MUC1 staining can occur in a fraction of trophoblastic cells. In this sample, the staining is extensive.



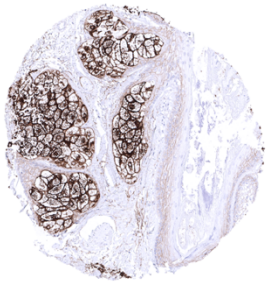
Prostate - MUC1 immunostaining is variable in the prostate. In this sample, a moderate to strong MUC1 staining of luminal and basal cells is seen in a fraction of cells of selected glands.



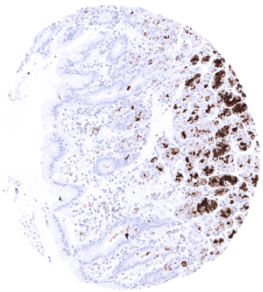
Seminal vesicle - A strong apical MUC1 staining focally occurs in seminal vesicle epithelium



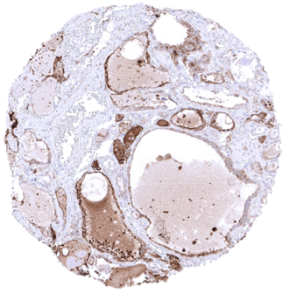
Skin - MUC1 immunostaining is usually absent in the skin



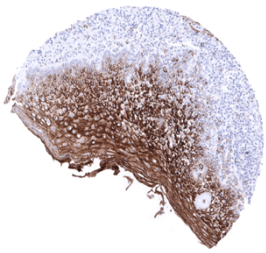
Skin (sebaceous glands) - A strong MUC1 immunostaining is seen in sebaceous glands, while the skin is usually MUC1 negative



Stomach, corpus - Mucous producing glands of the stomach show a strong MUC1 positivity in this sample while the surface epithelial cells are largely MUC1 negative.



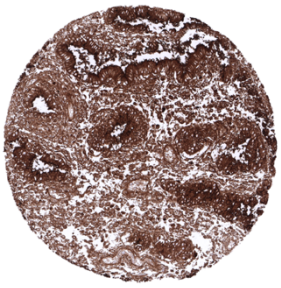
Thyroid gland - In the thyroid, a moderate apical MUC1 staining is seen in follicles, sometimes accompanied by a moderate to strong cytoplasmic staining



Tonsil, surface epitheliu - A moderate to strong MUC1 immunostaining is seen in this non-keratinizing squamous epithelia of the tonsil surface

Uterus, endocervix - A strong cytoplasmic MUC1 immunostaining with apical predominance is seen in the endocervical epithelium

Uterus, endometrium (proliferation) - A very strong MUC1 immunostaining is seen in the endometrium, where the stroma is also often MUC1 positive



Uterus, endometrium (secretion) - A very strong MUC1 immunostaining is seen in the endometrium, where the stroma is also often MUC1 positive