MS Validated Antibodies

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# Anti- CD5 Antibody
# MSVA-005R / Recombinant Rabbit monoclonal

| | |
|---|---|
| **Human SwissProt** | P06127 |
| **Human Gene Symbol** | CD5 |
| **Synonyms** | CD5 antigen (p56 62), LEU1, Ly12, LyA, Lymphocyte antigen T1/Leu-1, Lymphocyte glycoprotein T1/Leu1, T-cell surface glycoprotein CD5 |
| **Specificity** | CD5 |
| **Immunogen** | Recombinant protein of human CD5 |
| **Isotype** | Rabbit / IgG |
| **Species Reactivity** | Human |
| **Localization** | Cell Surface |

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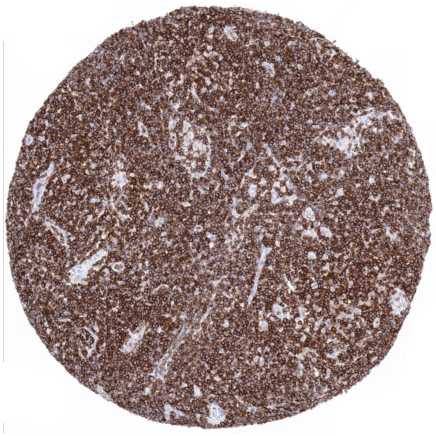
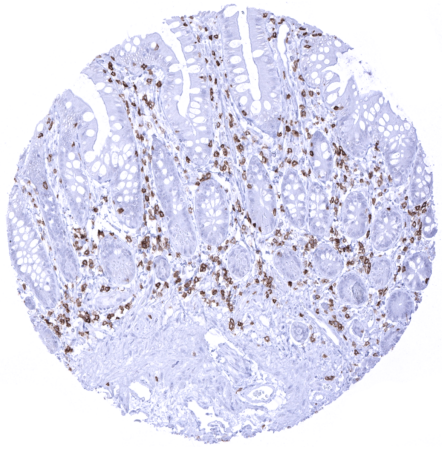
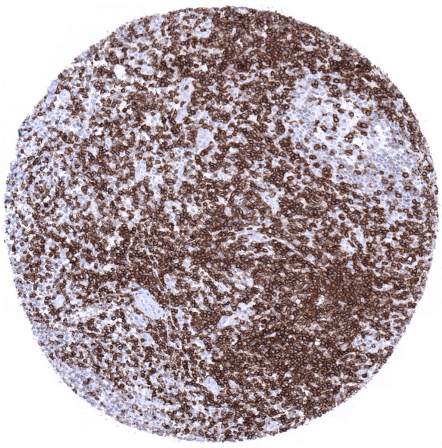
| **Storage & Stability** | Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required. |
| **Supplied As** | 200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. |
| **Positive Control** | Tonsil or lymph node: Here, a strong, predominantly membranous staining of virtually all T-cells in both T-zones and in germinal centres is required. In addition, an at least weak to moderate, distinct membranous staining reaction of dispersed B-cells in the mantle zone should be visible. |
| **Negative Control** | tonsil or appendix: Tonsil or lymph node. No staining reaction of germinal centre B-cells. |



**Lymph node: B-CLL with strong CD5 positivity of all tumor cells.**



**Strong CD5 immunostaining of T-lymphocytes in the ileum mucosa.**



**Tonsil: Strong CD5 positivity of T-lymphocytes interfollicular and in germinal centres.**

## Biology

CD5 (syn. Leu-1) is a cluster of differentiation protein located on the surface of the vast majority of T-lymphocytes and in pre-naive B-lymphocytes. Because T-cells express much higher levels of CD5 than B-cells, antibodies against CD5 were initially used as T-cell markers. CD5+ B-cells represent about 1–8% of peripheral blood lymphocytes and 5–30% of the circulating B-cells. Both in T- and B-lymphocytes, the function of CD5 is not fully understood. In B-lymphocytes, CD5 may mitigate activating signals from the B-cell receptor so that the CD5 positive B-cells can only be activated by very strong stimuli (such as bacterial proteins) and not by normal tissue proteins. In T-cells, the functional role of CD5 may vary between immature (thymic) and mature peripheric cells. In mature T-cells, the co-receptor CD5 may act as a negative regulator of T-cell activation, perhaps in a similar way as CTLA-4 and PD-1. Despite its unknown function, immunohistochemical CD5 staining has proven highly useful in the diagnosis of B-CLL and mantle cell lymphoma (mostly CD5 positive). In normal tissues, CD5 immunostaining occurs on the surface membranes of the vast majority of T-cells and in pre-naive B-cells mainly occurring in the mantle zone of germinal centres. A positive immunostaining is also seen in several epithelial tissues including a fraction of squamous epithelial cells lining tonsillar crypts, intercalated ducts in submandibular gland, bronchial glands, and – at least in a fraction of samples - surface epithelium in the stomach antrum. Among tumors, CD5 is strongly expressed in the vast majority of B-CLL, mantle cell lymphomas and T-cell lymphomas. CD5 expression can, at markedly lower frequency also occur in other B-cell lymphomas. CD5 expression can be lost in T-cell lymphomas. Of note, a membranous CD5 staining can – rarely - also be found in various epithelial cancers such as for example colorectal cancer.

## Potential Research Applications

-The regulatory role of CD5 in both B- and T- lymphocytes is not fully understood.
-CD5 should be used as a component of multicolor assays analyzing the role of lymphocyte subsets in cancer and other diseases.
-The biological and diagnostic significance of CD5 immunostaining in hematological and non- hematological neoplasms should be further investigated.

## Protocol Suggestions

**Dilution: 1:150; pH 9 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. Not for resale without express authorization.

## 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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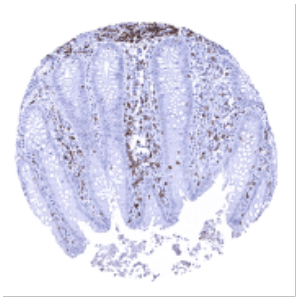
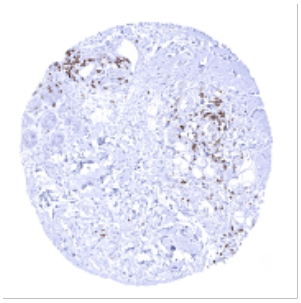
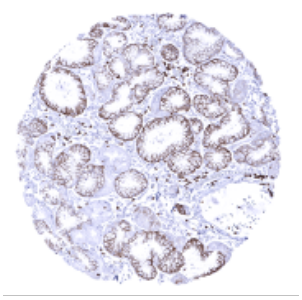


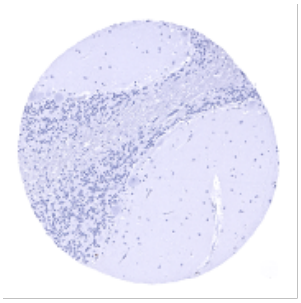
Appendix, mucosa



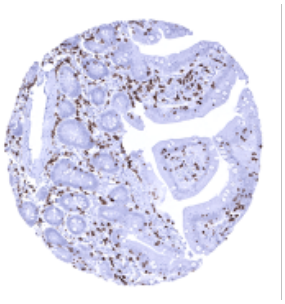
Breast



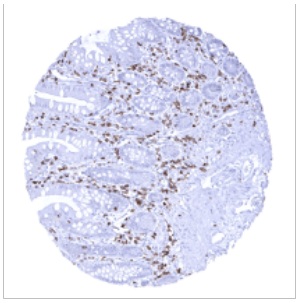
Bronchus, glands - A moderate CD5 immunostaining can occur in a fraction of bronchial glands



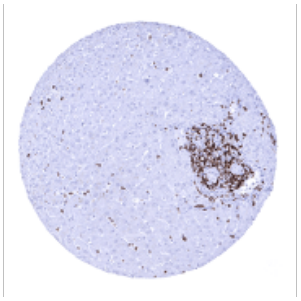
Cerebellum (molecular, granular and Purkinje layers - white matter)



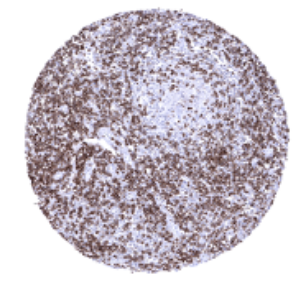
Duodenum, mucosa



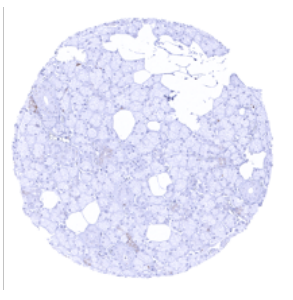
Ileum, mucosa



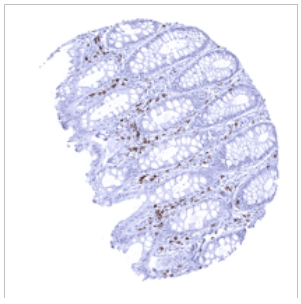
Liver



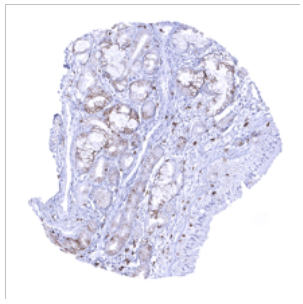
Lymph node - CD5 immunostaining occurs on the surface membranes of the vast majority of T-cells and in pre-naive B-cells mainly occurring in the mantle zone of germinal centres



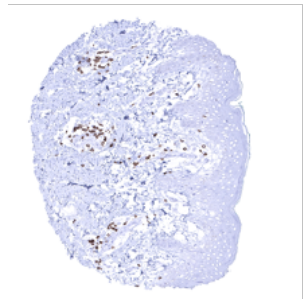
Parotid gland - A weak to moderate CD5 immunostaining is seen in intercalated ducts in submandibular glands



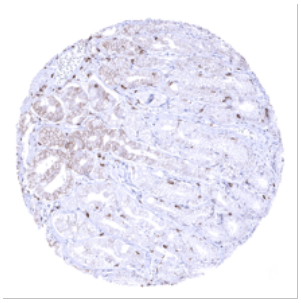
Rectum, mucosa



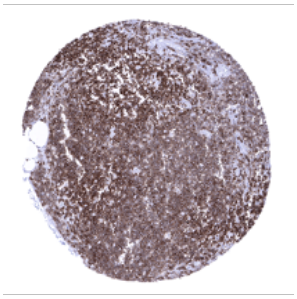
Sinus paranasales - A moderate CD5 immunostaining is seen in a subset of bronchial glands



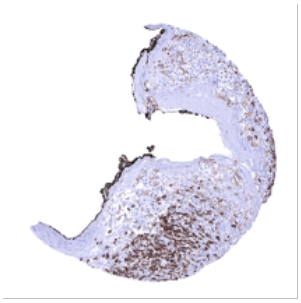
Skin



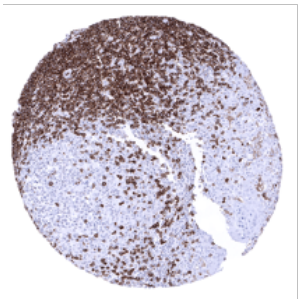
Stomach, antrum - A CD5 immunostaining is also seen in several epithelial tissues including surface epithelium in the stomach antrum (in a fraction of samples)



Thymus



Tonsil, surface epithelium



Tonsil