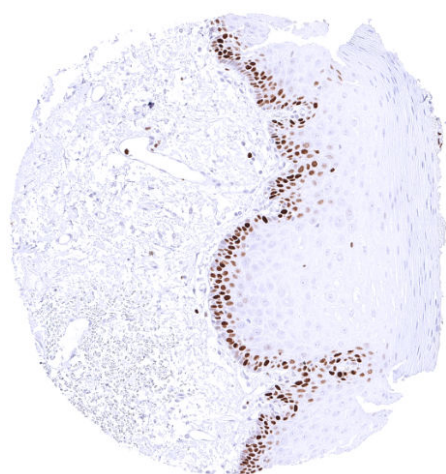


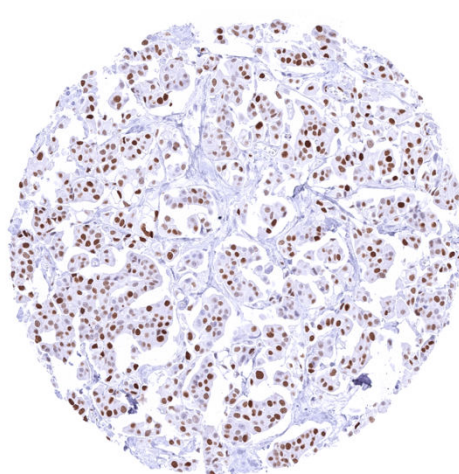
## Anti- MCM5 Antibody MSVA-505R / Recombinant Rabbit monoclonal

Human SwissProt	P339922
Human Gene Symbol	MCM5
Synonyms	Minichromosome maintenance complex component 5, CDC46, MGORS8, P1-CDC46
Specificity	MCM5
Immunogen	Recombinant human MCM5 fragment
Isotype	Rabbit / IgG
Species Reactivity	Human

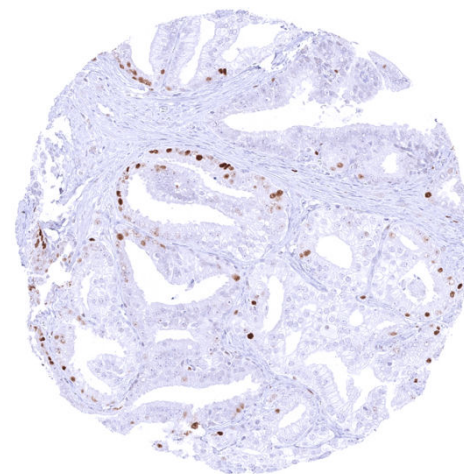
Localization	Intracellular
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	Purified antibody from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with <1% BSA & <0.1% azide. Antibody concentrate is optimized for dilution within dilution range using commercially available antibody diluent for IHC.
Positive Control	Colon: A strong nuclear MCM5 immunostaining should be seen in virtually all crypt base cells.
Negative Control	Colon: MCM5 immunostaining should be less intense or absent in surface epithelial cells and absent in most stroma cells.



Esophageal squamous epithelium with a distinct nuclear MCM5 staining of suprabasal and (much less intense) basal cells of the squamous epithelium.



Micropapillary muscle-invasive urothelial carcinoma with strong MCM5 positivity of >80% of tumor cells.



Prostatic adenocarcinoma (Gleason 3+4=7) with distinct MCM5 staining of a small subset of tumor cells.

### Biology

The MCM5 gene codes for a nuclear protein which belongs to the highly conserved mini-chromosome maintenance proteins (MCM) 2-7 that play a key role in genome replication. They form a ring-shaped hexameric protein complex which unwinds double-stranded DNA, forms a replication fork during the initiation of DNA replication, and helps to recruit other DNA replication related proteins. The MCM2-7 limits DNA replication to a single occurrence per cell division and is critical for maintaining genome integrity. Whether the role of MCM5 specifically differs from those of other MCM proteins is not clear. Interaction analyses have revealed that MCM5 directly interacts with MCM2, 3, and 7. The MCM proteins are expressed in all cells in the G1, S, G2 and M-phase of the cell cycle but in contrast to the better established proliferation marker Ki-67, MCMs are already expressed in early G1 phase. This results in the detection of more proliferating cells as compared to Ki67 immunohistochemistry which might be advantageous in tumor types with low proliferative activity. In normal tissues, MCM5 staining is seen in proliferative cell compartments such as the crypt base in colon epithelium but also occurs in several cell types not known for proliferative activity such as for example skeletal muscle, myometrium, and ovarian stroma. In tumors, a nuclear MCM2 immunostaining always occurs in a fraction of tumor cells.

### Potential Research Applications

- The prognostic role of the percentage of MCM5 positive cells is yet unknown.
- It is unclear whether MCM5 quantification is equally or better suited than the established Ki67-Li for prognosis assessment in tumors with rather low proliferation rate.

### Protocol Suggestions

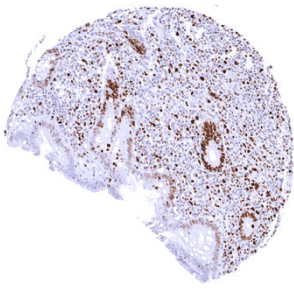
**Dilution: 1:100. pH 7,8 is optimal.** Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

### Limitations

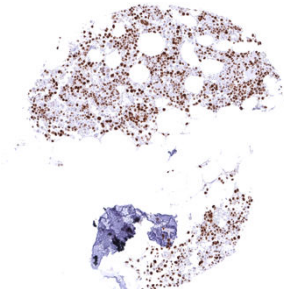
This antibody is available for **research use only** and is not approved for use in diagnostics.

### Warranty

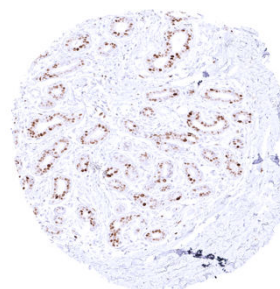
There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



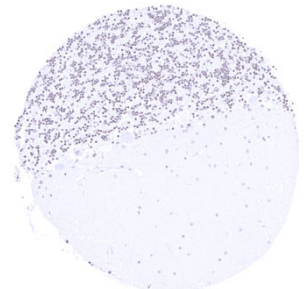
Appendix, mucosa – Nuclear MCM5 staining predominates in epithelial cells of the crypts. Many lymphocytes are also positive.



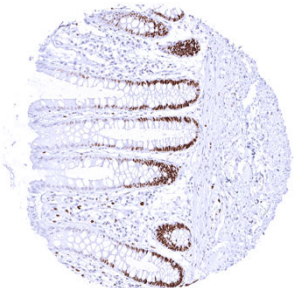
Bone marrow – Strong MCM5 staining in most bone marrow cells.



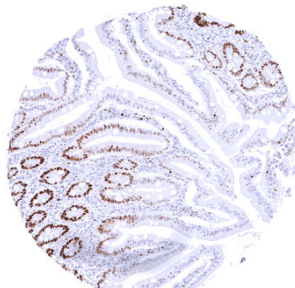
Breast – Strong MCM5 staining of most epithelial cells.



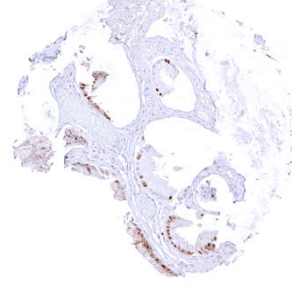
Cerebellum (molecular layer, Purkinje cell layer, granule cell layer)



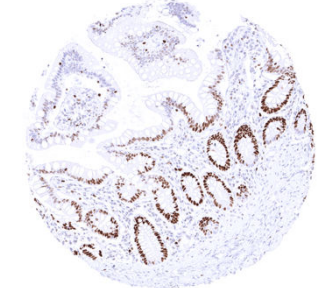
Colon descendens, mucosa – Nuclear MCM5 staining predominates in epithelial cells of the crypts. Some lymphocytes are also positive.



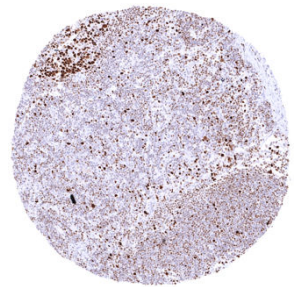
Duodenum, mucosa – MCM5 staining predominates in epithelial cells of the crypts.



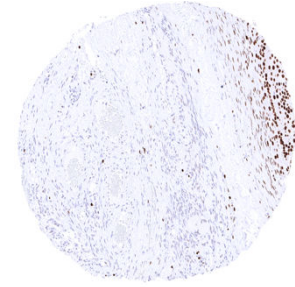
Gallbladder, epithelium – A variable number of MCM5 positive cells can be seen in the gallbladder epithelium.



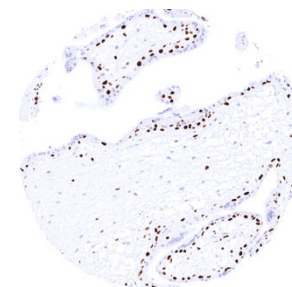
Ileum, mucosa – MCM5 staining predominates in epithelial cells of the crypts.



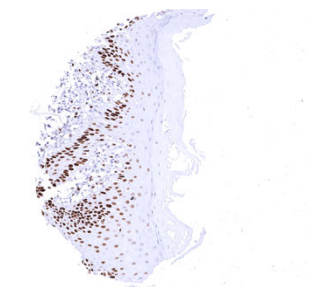
Lymph node – Many lymphocytes are MCM5 positive. MCM5 staining is strongest and most common in cells of germinal centres.



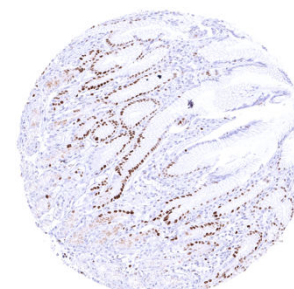
Ovary, follicular cyst – Strong MCM5 staining of virtually all granulosa and theca interna cells.



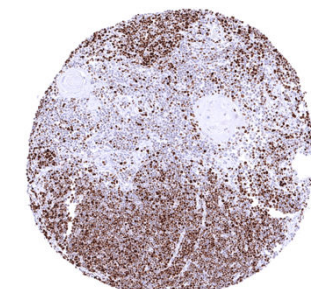
Placenta, early – Strong MCM5 staining of a large fraction of cytotrophoblast cells.



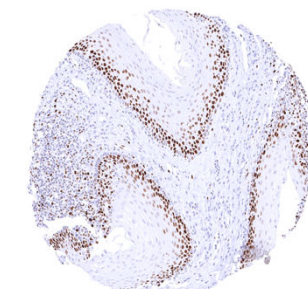
Skin – Suprabasal and basal cells of the squamous epithelium with a distinct nuclear MCM5 staining.



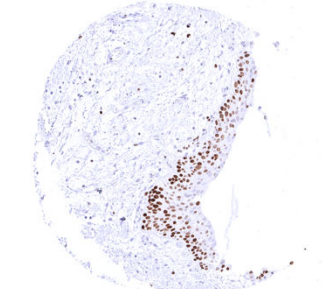
Stomach, antrum – Strong nuclear MCM5 immunostaining of many mucous neck cells.



Thymus – Strong MCM5 positivity of most cells of the thymic cortex. Medullary cells show markedly less staining.



Tonsil, surface epithelium



Urinary bladder, urothelium – A variable fraction of urothelial cells in all cell layers can show nuclear MCM5 staining.