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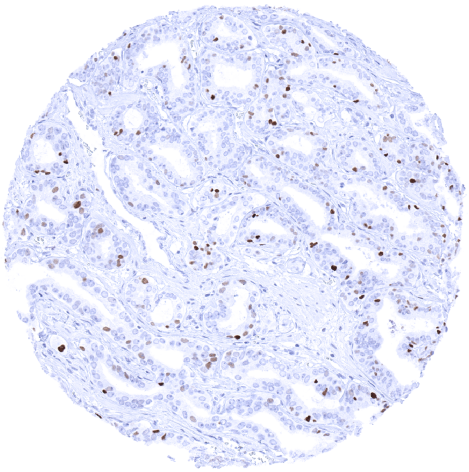
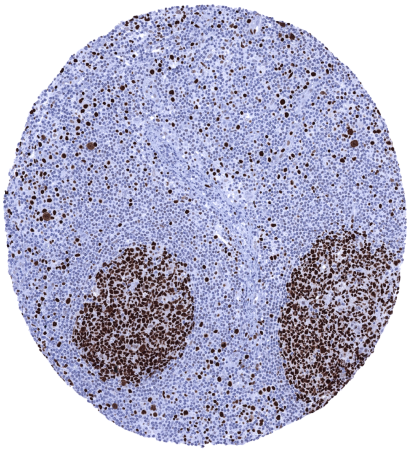
Anti- MCM7 Antibody
MSVA-507R / Recombinant Rabbit monoclonal

Human SwissProt	P33993
Human Gene Symbol	MCM7
Synonyms	CDC47; DNA replication licensing factor MCM7; MCM7 mini chromosome maintenance deficient 7; Minichromosome Maintenance 7; Mini chromosome maintenance protein 7; P1.1-MCM3; P1CDC47; P85MCM; PNAS146
Specificity	MCM7
Immunogen	Recombinant human MCM7 fragment
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Nuclear

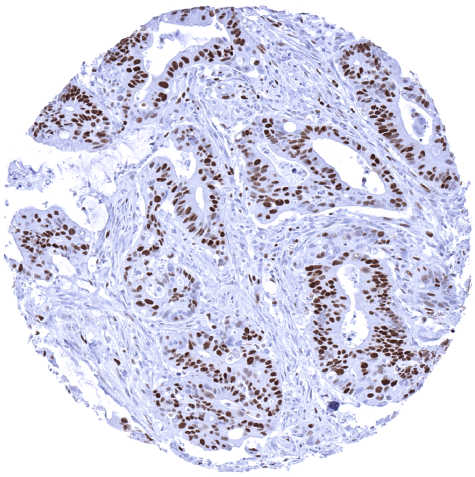
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Colon: A strong nuclear MCM7 immunostaining should be seen in virtually all crypt base cells.
Negative Control	Colon: MCM7 immunostaining should be largely absent in surface epithelial cells and in most stroma cells.



Prostatatic adenocarcinoma (Gleason 3+3=6) with MCM7 staining of a limited number of tumor cells



In lymph nodes, a particularly strong MCM7 staining occurs in most cells of germinal centres



Colorectal adenocarcinoma with a large fraction of MCM7 positive tumor cells

Biology

The MCM7 gene is located at 7q22.1 and codes for a 80kDa 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 is essential for the pre-replication complex and may be involved in the formation of replication forks, the recruitment of other DNA replication related proteins, and in maintaining genome integrity. Although uncomplexed MCM7 does not have ATPase or DNA helicase activity, it plays a role for DNA helicase activity of the MCM complex. MCM7 expression is regulated by E2F transcription factors under growth factor stimulation by PI3K/AKT, GSK3B , CCND1, and RB1. The MCM proteins are expressed in all cells in the G1, S, G2 and M-phase of the cell cycle. In in contrast to the better-established proliferation marker Ki-67, MCMs are already expressed in early G1 phase. Immunohistochemical MCM analysis thus results in the detection of more proliferating cells than by Ki67 immunohistochemistry. This might be advantageous in tumor types with low proliferative activity. In normal tissues, a nuclear MCM3 immunostaining occurs in the cell compartments of tissues known to contain proliferating cells. In tumors, a nuclear MCM3 immunostaining always occurs in a fraction of neoplastic cells.

Potential Research Applications

-Marker for proliferative cells.
-The prognostic role of the percentage of MCM7 positive cells is yet unknown for most tumor entities.
-It is unclear whether MCM7 quantification is equally or better suited than the established Ki67-LI for prognosis assessment.

Protocol Suggestions

Dilution: 1:150 ; 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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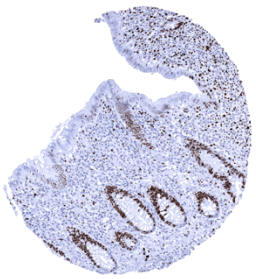
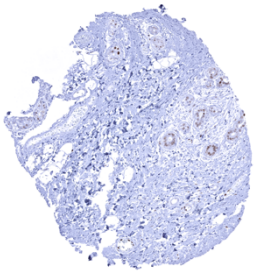
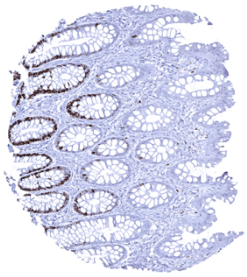


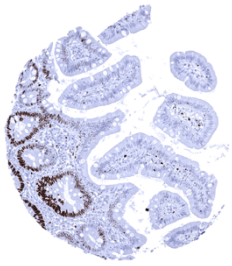
Appendix, mucosa - MCM7 immunostaining predominates in in epithelial cells of the crypts. Some lymphocytes are also positive



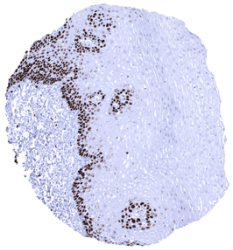
Breast - A weak to moderate MCM7 staining occurs in many luminal cells



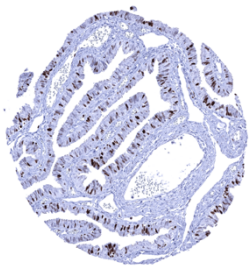
Colon, descendes - MCM7 staining predominates in epithelial cells of the crypts



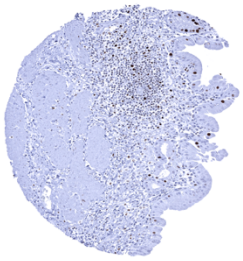
Duodenum, mucosa - MCM7 immunostaining predominates in epithelial cells of the crypts



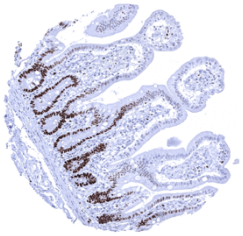
Esophagus, squamous epithelium - Esophageal squamous epithelium shows a moderate to strong MCM7 staining of suprabasal and basal cells



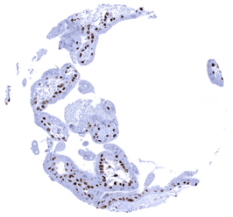
Fallopian tube, mucosa - MCM7 staining in a significant fraction of epithelial cells



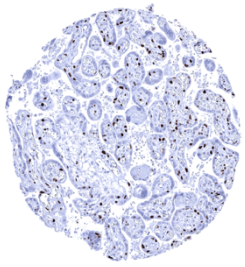
Gallbladder, epithelium - Few MCM7 positive cells occur in the gallbladder epithelium



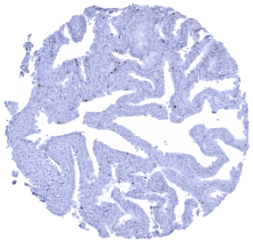
Ileum, mucosa - MCM7 staining predominates in epithelial cells of the crypts



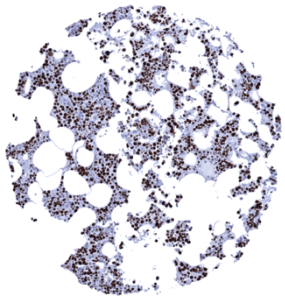
Placenta, early - MCM7 staining in many cells of the cytotrophoblast and a fraction of stroma cells



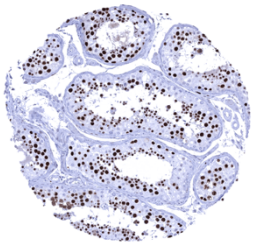
Placenta, mature - Cells of the cytotrophoblast and also some stroma cells show strong MCM7 staining



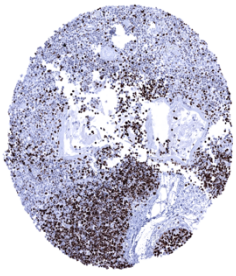
Seminal vesicle



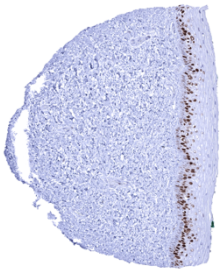
Strong MCM7 immunostaining in the majority of bone marrow cells



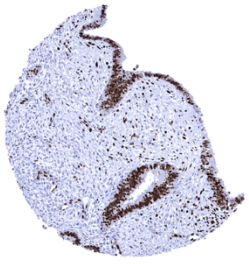
Testis - Most spermatocytes show strong MCM7 positivity but mature sperms and probably also spermatogonia are MCM7 negative



Thymus - A strong MCM7 positivity occurs in most cells of the thymic cortex



Uterus, ectocervix - The squamous epithelium shows a moderate MCM7 immunostaining of (mostly) suprabasal cells



Uterus, endometrium (proliferation) - Almost all epithelial cells and a fraction of stromal cells are MCM7 positive