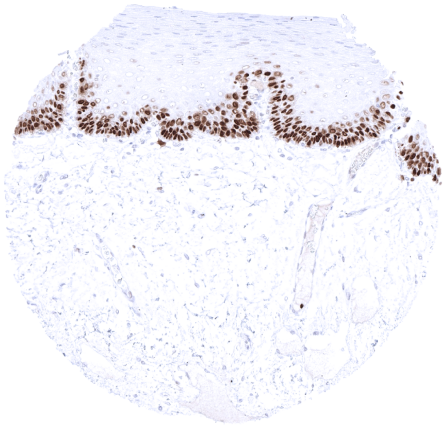
MS Validated Antibodies GmbH
Bergstedter Chaussee 62a
22395 Hamburg, Germany
Tel: +49 (0) 40 89 72 55 81
E-Mail:info@ms-validatedantibodies.com
Website: ms-validatedantibodies.com

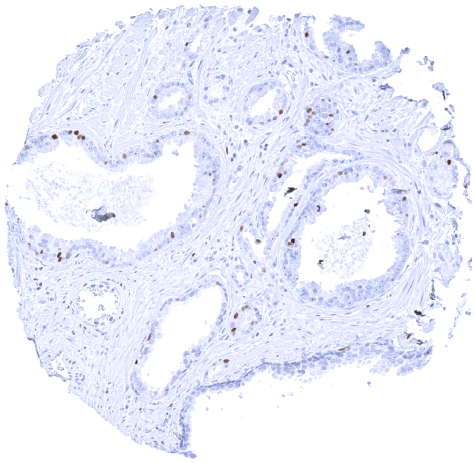
Anti- MCM3 Antibody
MSVA-503M / Mouse monoclonal

Human SwissProt	P25205
Human Gene Symbol	MCM3
Synonyms	Minichromosome Maintenance Complex Component 3, DNA Polymerase Alpha Holoenzyme-Associated Protein P1, DNA Replication Licensing Factor MCM3, RLF Subunit Beta, P1-MCM3, P102
Specificity	MCM3
Immunogen	Recombinant human MCM3 fragment
Isotype	Mouse / IgG
Species Reactivity	Human

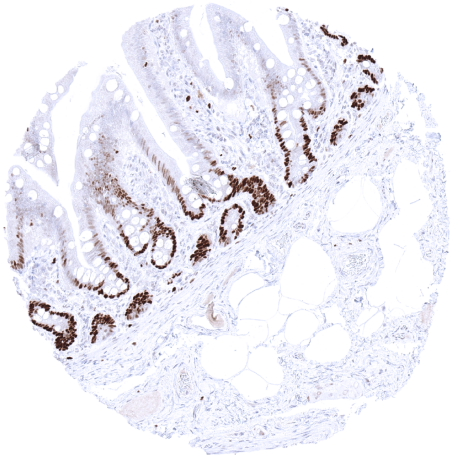
Localization	Nuclear
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Colon: A strong nuclear MCM3 immunostaining should be seen in virtually all crypt base cells.
Negative Control	Colon: MCM3 immunostaining should be largely absent in surface epithelial cells and in most stroma cells.



Esophageal squamous epithelium with moderate to strong nuclear MCM3 staining of suprabasal and basal cells



Prostatic adenocarcinoma (Gleason 3+3=6) with strong MCM3 positivity of few tumor cells



A strong MCM3 immunostaining occurs in duodenal crypt cells

Biology

The MCM3 gene is located at 6p12.2 and codes for a 91kDa 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. MCM3 is acetylated by the chromatin-associated acetyltransferase MCM3AP. The acetylation of MCM3 inhibits the initiation of DNA replication and cell cycle progression. 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, a nuclear MCM3 immunostaining preferentially occurs in the cell compartments of tissues known to contain proliferating cells. In tumors, a nuclear MCM3 immunostaining in a variable (often high) fraction of neoplastic cells is always seen.

Potential Research Applications

- Marker for proliferative cells.
-The prognostic role of the percentage of MCM3 positive cells is yet unknown.
-It is unclear whether MCM3 quantification is equally or better suited than the established Ki67-LI for prognosis assessment in tumors with rather low proliferation rate.

Protocol Suggestions

Dilution: 1:150 ; 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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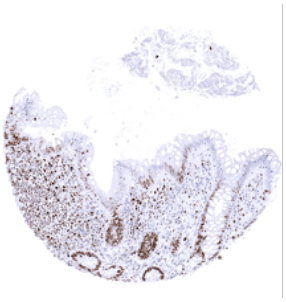
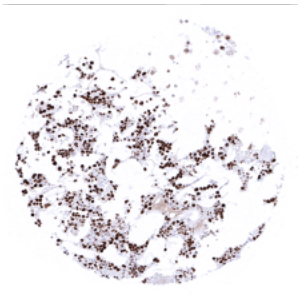
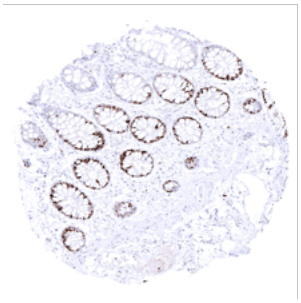


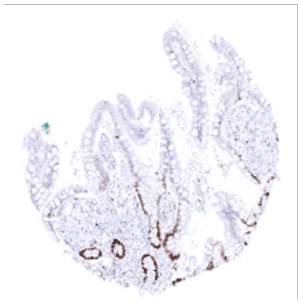
Appendix, mucosa - A strong MCM3 immunostaining is seen in crypt cells of the appendical mucosa. Many lymphocytes are also positive



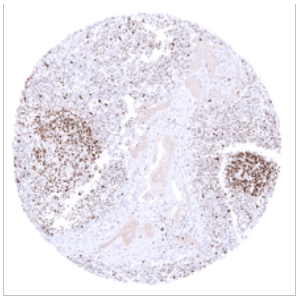
Bone marrow - A strong MCM3 immunostaining occurs in the majority of bone marrow cells



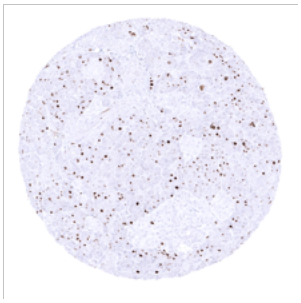
Colon descendens, mucosa - A strong MCM3 immunostaining is seen in crypt cells



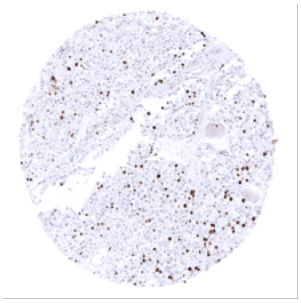
Ileum, mucosa - A strong MCM3 immunostaining is seen in crypt cells of the ileum



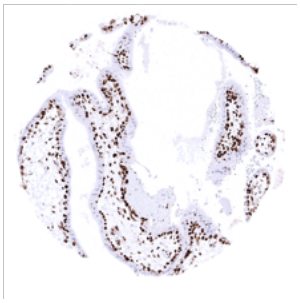
Lymph node - Many lymphocytes are MCM3 positive. A particularly strong MCM3 positivity occurs in most cells of germinal centres and also in scattered individual cells of the interfollicular zone



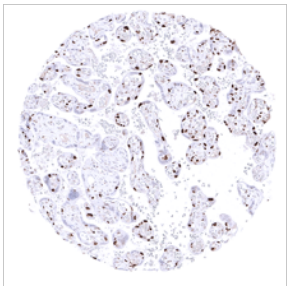
Pancreas - A variable intensity MCM3 immunostaining occurs in a small fraction of pancreatic epithelial cells. The rate of positive cells is particularly low in islets of Langerhans



Parathyroid gland - A variable intensity MCM3 immunostaining can be seen in a fraction of parathyroideal cells

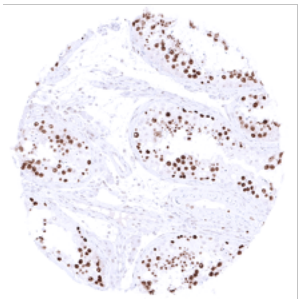


Placenta, early - Many cells of the cytotrophoblast and a fraction of stroma cells show strong MCM3 staining

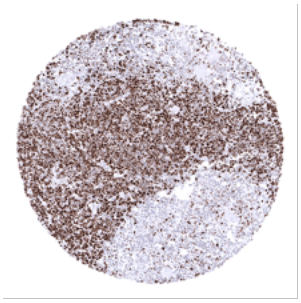


Placenta, mature - Cells of the cytotrophoblast and a fraction of stroma cells show strong MCM3 staining

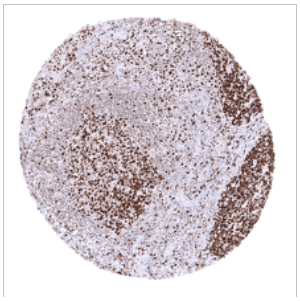
Rectum, mucosa - A strong MCM3 immunostaining is seen in crypt cells



Testis - Most spermatocytes are strongly MCM3 positive but mature sperms and probably also spermatogonia are negative

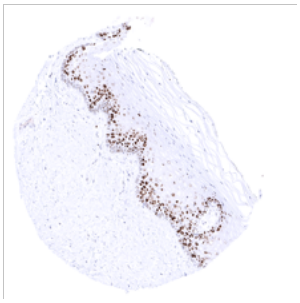


Thymus - A particularly strong MCM3 positivity occurs in most cells of the thymic cortex

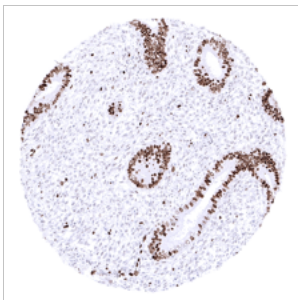


Tonsil - In the tonsil, a large fraction of lymphocytes is at least weakly MCM3 positive. A particularly strong MCM3 positivity occurs in most cells of germinal centres and also in individual cells of the interfollicular zone

Tonsil, surface epithelium - The squamous epithelium shows a moderate to strong MCM3 immunostaining of suprabasal and basal cells. Many lymphocytes are also positive



Uterus, ectocervix - The squamous epithelium shows a moderate MCM3 immunostaining of (mostly) suprabasal cells



Uterus, endometrium (proliferation) - Almost all epithelial cells and a fraction of stromal cells are MCM3 positive