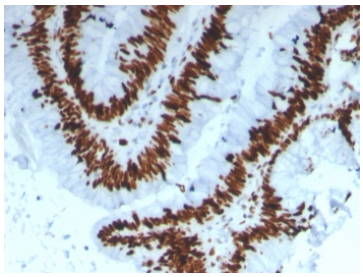
MCM3 Antibody / Cell Cycle Marker [clone MCM3/3221] (V5118)

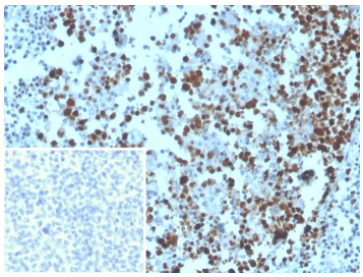
Catalog No.	Formulation	Size
V5118-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5118-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5118SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

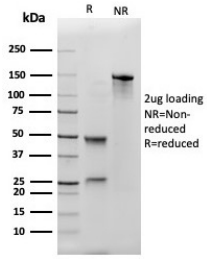
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	MCM3/3221
Purity	Protein A/G affinity
UniProt	P25205
Localization	Nucleus
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This recombinant MCM3/Cell Cycle Marker antibody is available for research use only.



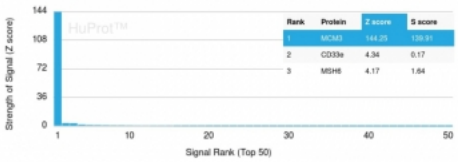
Immunohistochemistry analysis of recombinant MCM3/Cell Cycle Marker antibody (clone MCM3/3221) in FFPE human colon carcinoma tissue. Strong nuclear brown staining is observed in malignant epithelial cells, consistent with the role of MCM3 as a DNA replication licensing factor and proliferation marker. Adjacent stromal cells show comparatively lower labeling. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9, 10mM Tris with 1mM EDTA for 20 min followed by cooling prior to staining.



IHC staining of FFPE human tonsil tissue with recombinant MCM3/Cell Cycle Marker antibody (clone MCM3/3221). Inset: PBS instead of primary antibody, secondary only control.



SDS-PAGE analysis of purified, BSA-free recombinant MCM3/Cell Cycle Marker antibody (clone MCM3/3221) as confirmation of integrity and purity.



Analysis of a HuProt(TM) microarray containing more than 19,000 full-length human proteins using recombinant MCM3/Cell Cycle Marker antibody (clone MCM3/3221). Z- and S- Score: The Z-score represents the strength of a signal that a monoclonal antibody (in combination with a fluorescently-tagged anti-IgG secondary antibody) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If targets on HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-score. S-score therefore represents the relative target specificity of a mAb to its intended target. A mAb is considered to specific to its intended target, if the mAb has an S-score of at least 2.5. For example, if a mAb binds to protein X with a Z-score of 43 and to protein Y with a Z-score of 14, then the S-score for the binding of that mAb to protein X is equal to 29.

Description

MCM3/Cell Cycle Marker Antibody (clone MCM3/3221) recognizes Minichromosome maintenance complex component 3, a core subunit of the MCM2-7 helicase complex that functions as a DNA replication licensing factor. MCM3 antibody is widely used as a cell cycle marker antibody because MCM3 protein expression is tightly linked to cell proliferation and S phase entry. The MCM3 gene encodes a nuclear protein that participates in formation of the pre-replication complex during G1 phase, ensuring that DNA replication occurs once per cell cycle.

MCM3 protein forms a heterohexameric complex with MCM2, MCM4, MCM5, MCM6, and MCM7. This complex acts as a replicative helicase that unwinds DNA at replication origins, allowing DNA polymerases to initiate synthesis. As a cell cycle marker antibody, MCM3 Antibody detects nuclei of cells that are licensed for replication, including cells in late G1, S, G2, and early mitosis. In contrast to markers restricted to active DNA synthesis, MCM3 highlights a broader proliferative compartment, making it useful for assessing growth fraction in tissues.

In normal tissues, MCM3 expression is observed in proliferative zones such as basal epithelial layers, germinal centers of lymphoid tissue, and stem or progenitor cell populations. Differentiated, quiescent, or terminally specialized cells typically show little to no MCM3 staining. In tumor pathology, MCM3 Antibody is frequently applied as a cell cycle marker antibody to evaluate proliferative activity in carcinomas, lymphomas, and other neoplasms. Elevated nuclear MCM3 staining correlates with increased tumor grade, aggressive behavior, and poor clinical outcome in several cancer types.

MCM3 protein is localized predominantly in the nucleus, where it associates with chromatin during replication licensing. Its expression is regulated by cell cycle dependent kinases and E2F transcription factors, linking MCM3 levels to key oncogenic pathways. Because deregulated replication licensing contributes to genomic instability, detection of MCM3

provides insight into aberrant cell cycle control in cancer. Clone MCM3/3221 is designed to detect endogenous MCM3 protein in research applications, supporting studies of DNA replication, tumor proliferation, and cell cycle regulation in both normal and malignant tissues.

Overall, MCM3/Cell Cycle Marker (clone MCM3/3221) serves as a robust tool for identifying proliferating cells and characterizing replication licensing activity across a wide range of experimental and pathological contexts.

Application Notes

Optimal dilution of the recombinant MCM3/Cell Cycle Marker antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 650-750) from the human protein was used as the immunogen for the recombinant MCM3/Cell Cycle Marker antibody.

Storage

Aliquot the recombinant MCM3/Cell Cycle Marker antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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