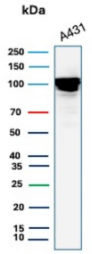
MCM4 Antibody / Cell proliferation marker MCM4 [clone MCM4/13209R] (V5942)

Catalog No.	Formulation	Size
V5942-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5942-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V5942SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

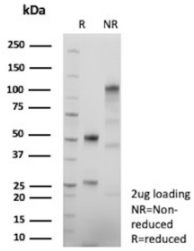
Recombinant RABBIT MONOCLONAL

Bulk quote request

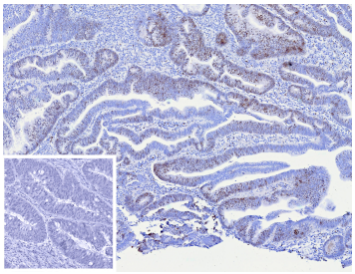
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MCM4/13209R
UniProt	P33991
Localization	Nucleus
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml Western Blot : 2-4ug/ml
Limitations	This recombinant MCM4/Cell proliferation marker MCM4 antibody is available for research use only.



Western blot analysis of A431 cell lysate using recombinant MCM4/Cell proliferation marker MCM4 antibody (clone MCM4/13209R). A prominent band is detected at approximately 100 kDa, corresponding to the predicted molecular weight of MCM4, with a characteristic doublet pattern consistent with different phosphorylation states of this cell cycleâ€“regulated protein.



SDS-PAGE Analysis purified recombinant MCM4/Cell proliferation marker MCM4 antibody (clone MCM4/13209R). Confirmation of Purity and Integrity of Antibody.



Immunohistochemistry analysis of recombinant MCM4 antibody (clone MCM4/13209R) in human colon adenocarcinoma. Formalin-fixed, paraffin-embedded human colon adenocarcinoma shows strong nuclear brown staining in proliferating tumor epithelial cells within glandular structures, consistent with MCM4 as a DNA replication licensing factor and proliferation-associated marker, while adjacent stromal cells demonstrate minimal to absent staining. The inset shows PBS used in place of primary antibody as a negative control, confirming specificity of the nuclear signal. Heat-induced epitope retrieval was performed by heating tissue sections in 10mM Tris with 1mM EDTA, pH 9.0, for 45 min at 95oC followed by cooling at room temperature for 20 minutes prior to staining.

Description

MCM4/Cell proliferation marker MCM4 Antibody recognizes Minichromosome maintenance complex component 4, also known as DNA replication licensing factor 4 and commonly described as a cell proliferation marker MCM4 in pathology literature. The MCM4 gene encodes a nuclear protein that forms part of the heterohexameric MCM2-7 complex, the core replicative helicase responsible for unwinding DNA during S phase. Because of its central role in replication licensing and DNA synthesis, MCM4 antibody is widely used as a sensitive indicator of proliferating cells in normal and neoplastic tissues.

MCM4 is expressed in the nuclei of cells that are actively cycling, including those in G1, S, G2, and M phases, but is absent in quiescent or terminally differentiated cells. This expression pattern makes cell proliferation marker MCM4 antibody particularly useful for identifying growth fractions in tumors. Compared with traditional proliferation markers, MCM4 often highlights a broader population of cycling cells, reflecting its role in replication origin licensing before DNA synthesis begins.

At the molecular level, MCM4 interacts with MCM2, MCM3, MCM5, MCM6, and MCM7 to assemble the functional helicase complex. Activation of this complex requires sequential phosphorylation events mediated by cyclin-dependent kinases and DDK, enabling origin firing and fork progression. Dysregulation of MCM4 expression has been associated with genomic instability and tumor progression in several malignancies, including colorectal carcinoma, breast carcinoma, lung carcinoma, and gynecologic cancers. Elevated nuclear labeling with MCM4 antibody frequently correlates with high proliferative index and aggressive clinicopathologic features.

In immunohistochemistry, MCM4 antibody produces distinct nuclear staining in proliferating epithelial, lymphoid, and mesenchymal cells, while non-dividing stromal or differentiated cells typically remain negative. This selective nuclear localization aligns with its biological function in DNA replication. Clone MCM4/13209R is designed to detect endogenous MCM4 protein in research applications and provides clear nuclear labeling suitable for evaluating proliferative activity in formalin-fixed, paraffin-embedded tissue sections.

By targeting a key replication licensing factor, MCM4 antibody serves as a valuable tool for studying cell cycle regulation, oncogenesis, and tissue growth dynamics. Its established role as a cell proliferation marker MCM4 makes it particularly relevant for cancer research and for comparative analyses of proliferative indices across different tissue types and tumor grades.

Application Notes

Optimal dilution of the recombinant MCM4/Cell proliferation marker MCM4 antibody should be determined by the researcher.

Immunogen

A recombinant fragment (around amino acids 600-800) of human MCM4 protein (exact sequence is proprietary) was used as the immunogen for the recombinant MCM4/Cell proliferation marker MCM4 antibody.

Storage

MCM4/Cell proliferation marker MCM4 antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.