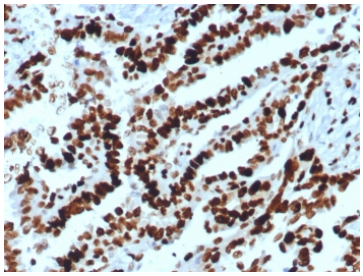
MCM2 Antibody [clone MCM2/8006R] (V4990)

Catalog No.	Formulation	Size
V4990-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4990-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4990SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MCM2/8006R
Purity	Protein A/G affinity
UniProt	P49736
Localization	Nucleus
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT Western Blot : 2-4ug/ml
Limitations	This MCM2 antibody is available for research use only.



IHC staining using MCM2 antibody. Formalin-fixed, paraffin-embedded human ovarian carcinoma tissue shows strong nuclear brown chromogenic staining in tumor cells, consistent with proliferative MCM2 expression, while surrounding stromal cells show lower staining intensity. Clone MCM2/8006R demonstrates specific nuclear localization following heat-induced epitope retrieval in pH 9 Tris-EDTA buffer. The inset negative control using PBS instead of primary antibody shows no specific staining.

Description

MCM2 antibody recognizes Minichromosome maintenance complex component 2, a nuclear DNA replication licensing

factor encoded by the human MCM2 gene. MCM2 antibody detects a key subunit of the MCM2-7 helicase complex that is essential for initiation and elongation during DNA replication. MCM2 is localized to the nucleus and is highly expressed in proliferating cells, particularly during S phase, where it participates in replication origin firing and fork progression.

MCM2 antibody, also referred to as Minichromosome maintenance protein 2 antibody and DNA replication licensing factor MCM2 antibody in the literature, targets a member of the highly conserved MCM protein family. The MCM2-7 complex functions as a replicative helicase, unwinding double-stranded DNA to allow polymerase access. MCM2 plays a regulatory role within this hexameric complex and contributes to helicase activation through phosphorylation-dependent mechanisms involving CDKs and CDC7 kinase.

The MCM2 gene is located on chromosome 3q21.3 and encodes a protein containing conserved ATPase domains characteristic of the AAA+ superfamily. Structurally, MCM2 includes an N-terminal regulatory region and a C-terminal helicase domain that interacts with other MCM subunits. Its activity is tightly controlled to ensure replication occurs only once per cell cycle, preventing genomic instability.

Expression of MCM2 is strongly associated with cellular proliferation. It is abundant in actively cycling cells such as basal epithelial cells, germinal center B cells, and tumor cells, while largely absent in quiescent or differentiated tissues. Because of this, MCM2 antibody is widely used as a proliferation marker in research settings, often compared with Ki-67 for assessment of cell cycle status.

Dysregulation of MCM2 has been reported in multiple malignancies including colorectal carcinoma, breast cancer, lung cancer, and hematologic neoplasms. Elevated nuclear MCM2 expression correlates with high proliferative index and may be associated with aggressive tumor behavior. Its role in DNA replication licensing also links it to pathways governing cell cycle checkpoints and genomic stability.

MCM2 participates in critical signaling networks that coordinate DNA replication with cell cycle progression, including interactions with CDC6, CDT1, and the origin recognition complex. Through these interactions, MCM2 helps assemble the pre-replication complex during G1 phase and becomes activated during S phase. An antibody to MCM2 is suitable for detecting nuclear MCM2 expression in proliferating cells and for studying DNA replication mechanisms, cell cycle regulation, and tumor biology in relevant research applications.

Application Notes

Optimal dilution of the MCM2 antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 1-200) from the human protein was used as the immunogen for the MCM2 antibody.

Storage

Aliquot the MCM2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.