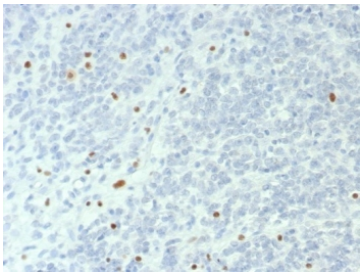
SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R / BRG1 Chromatin Remodeling Protein Antibody [clone BRG1/6531R] (V4586)

Catalog No.	Formulation	Size
V4586-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4586-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4586SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

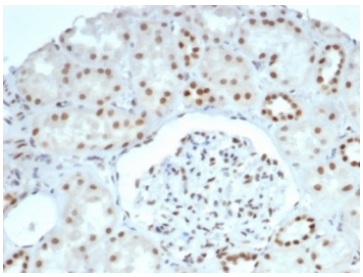
Recombinant RABBIT MONOCLONAL

Bulk quote request

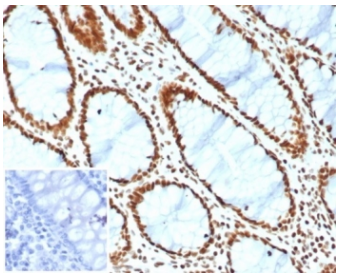
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	BRG1/6531R
Purity	Protein A/G affinity
UniProt	P51532
Localization	Nucleus
Applications	ELISA (Order BSA-free Format For Coating) : Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This SMARCA4 antibody is available for research use only.



SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R. Immunohistochemistry analysis of BRG1 / SMARCA4 in FFPE human ovarian small cell carcinoma tissue demonstrates largely negative tumor cell nuclei with only scattered HRP-DAB brown nuclear staining in a small subset of cells. This staining pattern is consistent with the known loss or reduced expression of BRG1 in many SMARCA4-deficient ovarian small cell carcinomas. Occasional positive nuclei may represent residual BRG1-expressing cells or non-tumor stromal elements within the tumor microenvironment. Heat induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris buffer with 1mM EDTA for 20 minutes followed by cooling prior to antibody incubation.



SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R. Immunohistochemistry analysis of BRG1 / SMARCA4 in FFPE human kidney tissue demonstrates strong HRP-DAB brown nuclear staining in renal epithelial cells within the kidney tubules, consistent with the nuclear localization of the BRG1 chromatin remodeling ATPase. The staining highlights nuclei of tubular epithelial cells surrounding the glomerulus while the surrounding stromal cells show comparatively weaker nuclear signal. This nuclear staining pattern aligns with the role of SMARCA4 as a core ATP-dependent subunit of the SWI/SNF chromatin remodeling complex involved in transcriptional regulation. Heat induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris buffer with 1mM EDTA for 20 minutes followed by cooling prior to antibody incubation.



SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R. Immunohistochemistry analysis of BRG1 / SMARCA4 in FFPE human colon tissue demonstrates strong HRP-DAB brown nuclear staining in epithelial cells lining the colonic glands, consistent with the nuclear localization of the BRG1 chromatin remodeling ATPase within the SWI/SNF complex. The staining highlights nuclei of glandular epithelial cells while surrounding stromal components show comparatively weaker nuclear signal. The inset negative control, in which PBS was used in place of the primary antibody, shows no specific brown chromogenic staining, confirming staining specificity. Heat induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris buffer with 1mM EDTA for 20 minutes followed by cooling prior to antibody incubation.

Description

SMARCA4 (BRG1) is an ATP-dependent chromatin remodeling enzyme that serves as a catalytic ATPase subunit of the SWI/SNF chromatin remodeling complex and regulates transcription by altering nucleosome positioning and chromatin accessibility. SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R recognizes the BRG1 protein encoded by the SMARCA4 gene and is developed as a recombinant rabbit monoclonal antibody designed to provide highly consistent detection of this chromatin remodeling ATPase. BRG1, also known as Brahma related gene 1, is a large nuclear protein that plays a critical role in transcriptional regulation, cellular differentiation, and tumor suppression pathways through its ability to modify chromatin structure and regulate gene expression programs.

BRG1 localizes primarily within the cell nucleus where it functions as a core catalytic component of the SWI/SNF chromatin remodeling complex. Through ATP hydrolysis, BRG1 drives nucleosome repositioning that enables transcription factors and regulatory proteins to access DNA regulatory regions. This ATP-dependent remodeling of chromatin structure allows activation or repression of genes involved in developmental processes, cell cycle control, and cellular differentiation. Because of this essential role in chromatin remodeling, SMARCA4 is widely studied in molecular biology and epigenetics research investigating transcriptional regulation and chromatin dynamics.

Clone BRG1/6531R is produced as a recombinant rabbit monoclonal antibody, combining the high affinity binding characteristics of rabbit monoclonal antibodies with the stability and reproducibility of recombinant antibody production. Recombinant rabbit monoclonal antibodies are generated from defined antibody sequences that are expressed through controlled recombinant systems, enabling consistent antibody production and stable epitope recognition across manufacturing batches. This recombinant rabbit monoclonal antibody format supports reliable detection of the BRG1 protein in research applications examining chromatin remodeling complexes and transcriptional regulatory pathways.

SMARCA4 has an important tumor suppressor role, and alterations in BRG1 expression have been reported in multiple malignancies. Loss or mutation of SMARCA4 has been described in cancers including lung carcinoma, thoracic sarcoma, ovarian small cell carcinoma of hypercalcemic type, and other tumor types associated with disruption of SWI/SNF chromatin remodeling components. Because of these biological roles, BRG1 detection is frequently used to investigate chromatin remodeling defects and tumor-associated alterations in SWI/SNF complex activity.

SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R therefore provides a recombinant rabbit monoclonal

antibody reagent for detecting the BRG1 chromatin remodeling ATPase in studies focused on transcriptional regulation, chromatin remodeling biology, and SWI/SNF complex function.

Application Notes

Optimal dilution of the SMARCA4 Antibody Recombinant Rabbit MAb BRG1/6531R should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 200-400) from the human protein was used as the immunogen for the SMARCA4 antibody.

Storage

Aliquot the SMARCA4 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

BRG1 antibody, SMARCA4 antibody, Brahma related gene 1 antibody, SWI/SNF ATP dependent chromatin remodeling protein antibody