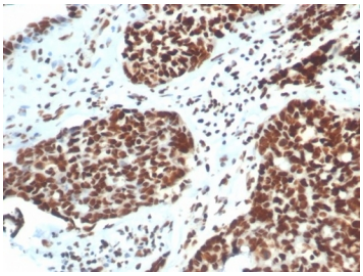
XRCC5 Antibody / Ku Heterodimer DNA End-Binding Antibody [clone XRCC5/7316] (V4940)

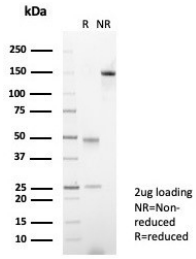
Catalog No.	Formulation	Size
V4940-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4940-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4940SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

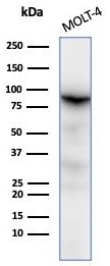
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1 + IgG2b, kappa
Clone Name	XRCC5/7316
Purity	Protein A/G affinity
UniProt	P13010
Localization	Nucleus
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This XRCC5 antibody is available for research use only.



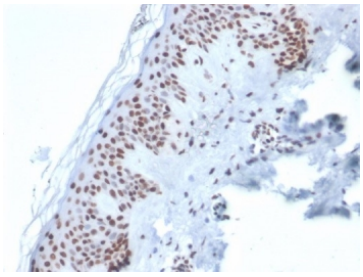
XRCC5 Antibody Colon IHC. Immunohistochemistry analysis of human colon tissue using XRCC5 antibody clone XRCC5/7316. Formalin-fixed, paraffin-embedded sections show strong HRP-DAB brown nuclear staining in glandular epithelial cells, consistent with XRCC5 (Ku80) localization as part of the Ku heterodimer. The prominent nuclear signal reflects active DNA end-binding at sites of DNA maintenance and repair within proliferative epithelial compartments. Hematoxylin counterstain highlights nuclei (blue), providing contrast to the XRCC5-positive nuclear staining pattern.



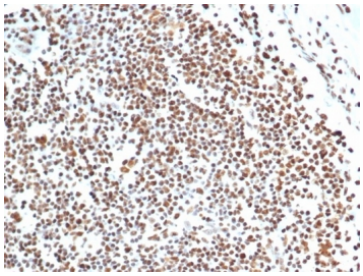
SDS-PAGE analysis of purified, BSA-free XRCC5 / Ku86 / Ku80 antibody (clone XRCC5/7316) as confirmation of integrity and purity.



XRCC5 Antibody MOLT-4 WB. Western blot analysis of XRCC5 (Ku80) in human MOLT-4 cell lysate. A band is detected at approximately 80-86 kDa, consistent with the predicted molecular weight of XRCC5 (Ku80). The clear band supports detection of this DNA end-binding protein, which functions as part of the Ku heterodimer to recognize DNA double-strand break termini and initiate repair complex assembly.



XRCC5 Antibody Skin IHC. Immunohistochemistry analysis of human skin tissue using XRCC5 antibody clone XRCC5/7316. Formalin-fixed, paraffin-embedded sections show strong HRP-DAB brown nuclear staining in epidermal keratinocytes, with minimal staining in the underlying dermal compartment. The nuclear localization is consistent with XRCC5 (Ku80) function as a DNA end-binding component of the Ku heterodimer, reflecting active DNA maintenance and repair in proliferative epithelial layers. Hematoxylin counterstain highlights nuclei (blue), providing contrast to the XRCC5-positive nuclear staining pattern.



XRCC5 Antibody Lymph Node IHC. Immunohistochemistry staining of FFPE human lymph node tissue with XRCC5 / Ku86 / Ku80 antibody (clone XRCC5/7316). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.

Description

X-ray repair cross-complementing protein 5 (XRCC5), also known as Ku80, is a DNA end-binding protein that functions as part of the Ku heterodimer together with XRCC6 (Ku70). XRCC5 Antibody is uniquely positioned for studies focused on DNA end recognition, where the ability of proteins to bind exposed DNA termini is critical for initiating repair of double-strand breaks. The Ku heterodimer is one of the first protein complexes to engage broken DNA, forming a stable ring-like structure that encircles DNA ends and protects them from degradation.

XRCC5 Antibody is uniquely positioned for investigating the molecular mechanics of DNA end-binding, a defining feature that distinguishes the Ku complex from other DNA repair proteins. XRCC5 antibody, also referred to as Ku80 antibody, detects a nuclear protein that exhibits high affinity for DNA termini regardless of sequence context. This sequence-independent binding allows XRCC5 to act as a universal sensor of DNA double-strand breaks, making it essential for rapid and efficient detection of genomic damage.

The DNA end-binding activity of XRCC5 enables recruitment of additional repair factors, including DNA-dependent protein kinase catalytic subunit and ligation enzymes that complete the non-homologous end joining process. Without this initial binding step, repair complexes cannot assemble properly, leading to accumulation of DNA damage and compromised genomic stability. Detection of XRCC5 therefore provides direct insight into the earliest stages of DNA damage

recognition and repair initiation.

XRCC5 is broadly expressed across cell types and is particularly active in proliferating cells, where DNA replication increases the likelihood of double-strand breaks. Its DNA-binding function can be influenced by chromatin accessibility, DNA damage load, and cellular stress conditions, making it a valuable marker for studying DNA-protein interactions under a wide range of biological contexts. In experimental systems, XRCC5 detection can be used to assess the presence of DNA ends and the efficiency of repair initiation.

As a member of the DNA repair protein family, XRCC5 integrates structural DNA binding with recruitment of repair machinery, serving as a bridge between damage detection and repair execution. Its role as a DNA end-binding component of the Ku heterodimer provides a distinct functional identity that is not shared by downstream repair enzymes. XRCC5 Antibody provides a focused tool for researchers studying DNA end recognition, repair complex assembly, and the molecular architecture of DNA repair pathways.

For studies focused on XRCC6-associated DNA end recognition and double-strand break repair signaling, see our Ku70 Antibody / DNA End Binding Protein Antibody page featuring IHC and western blot validation data across multiple tumor types and human cell lines.

Application Notes

Optimal dilution of the XRCC5 Antibody / Ku Heterodimer DNA End-Binding Antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 300-500) from the human protein was used as the immunogen for the XRCC5 Antibody / Ku Heterodimer DNA End-Binding Antibody.

Storage

Aliquot the XRCC5 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Ku80 antibody, XRCC5 Ku heterodimer antibody, Ku80 DNA end-binding antibody, XRCC5 DNA binding protein antibody, Ku complex antibody