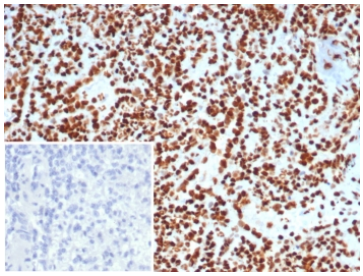
XRCC5 Antibody / DNA-PK Complex Assembly Antibody [clone XRCC5/7313] (V4944)

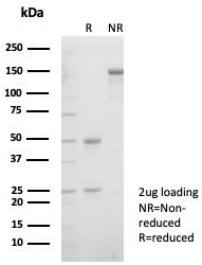
Catalog No.	Formulation	Size
V4944-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4944-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4944SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

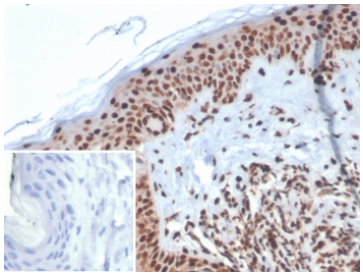
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2c, kappa
Clone Name	XRCC5/7313
Purity	Protein A/G affinity
UniProt	P13010
Localization	Nucleus
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This XRCC5 antibody is available for research use only.



XRCC5 Antibody / DNA-PK Complex Assembly Antibody. Immunohistochemistry analysis of human lymph node tissue using XRCC5 antibody clone XRCC5/7313. Formalin-fixed, paraffin-embedded sections show strong HRP-DAB brown nuclear staining throughout the lymphoid cell population, consistent with XRCC5 (Ku80) localization as a structural component of the DNA-PK complex. The widespread nuclear signal reflects active assembly of DNA repair complexes in proliferative immune cells, where XRCC5 participates in recruitment and stabilization of DNA-PKcs at sites of DNA damage. The inset shows PBS used in place of primary antibody (secondary antibody negative control), demonstrating absence of specific staining. 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 XRCC5/7313) as confirmation of integrity and purity.



XRCC5 Antibody / DNA-PK Complex Assembly Antibody. Immunohistochemistry analysis of human skin tissue using XRCC5 antibody clone XRCC5/7313. Formalin-fixed, paraffin-embedded sections show strong HRP-DAB brown nuclear staining in epidermal keratinocytes, with comparatively lighter staining in the dermal compartment. The nuclear localization is consistent with XRCC5 (Ku80) function as a structural component of the DNA-PK complex, reflecting active assembly of DNA repair machinery in proliferative epithelial layers. The inset shows PBS used in place of primary antibody (secondary antibody negative control), demonstrating absence of specific staining. Hematoxylin counterstain highlights nuclei (blue), providing contrast to the XRCC5-positive nuclear staining pattern.

Description

X-ray repair cross-complementing protein 5 (XRCC5), also known as Ku80, is a central organizing component of the DNA-dependent protein kinase (DNA-PK) complex, where it functions as a structural scaffold that enables assembly of multi-protein DNA repair machinery. XRCC5 Antibody is uniquely positioned for studies focused on DNA-PK complex assembly, where detection of XRCC5 provides insight into how DNA repair proteins are recruited, stabilized, and organized at sites of DNA damage. Unlike enzymes that act downstream, XRCC5 plays a foundational role in building the repair complex itself.

XRCC5 Antibody is uniquely positioned for investigating the architecture of DNA repair complexes, where XRCC5 acts as a molecular bridge linking DNA ends with enzymatic repair components. XRCC5 antibody, also referred to as Ku80 antibody, detects a nuclear protein that forms a heterodimer with XRCC6 (Ku70) and subsequently recruits DNA-dependent protein kinase catalytic subunit (DNA-PKcs). This step is essential for converting DNA end recognition into an active repair complex capable of processing and ligating DNA breaks.

What distinguishes XRCC5 in this context is its role in complex assembly rather than catalytic activity. XRCC5 stabilizes interactions between multiple proteins, ensuring proper spatial arrangement of repair factors at DNA break sites. Detection of XRCC5 therefore reflects the presence of assembled or assembling DNA repair complexes, making it particularly valuable for studying how protein networks form and function during repair.

In experimental systems, XRCC5 can be used to assess how efficiently DNA repair complexes are formed under different conditions, including genotoxic stress, replication stress, or therapeutic treatment. Disruption of XRCC5 function can impair assembly of the DNA-PK complex, leading to defective repair and increased genomic instability. Monitoring XRCC5 provides a direct readout of repair complex integrity and assembly dynamics.

XRCC5 is widely expressed and becomes functionally engaged in response to DNA damage, but its defining role in this context is its ability to organize repair machinery into a functional unit. As a member of the DNA repair protein family, XRCC5 integrates DNA binding with protein recruitment, acting as a structural hub within the DNA-PK complex. XRCC5 Antibody provides a highly targeted tool for researchers studying DNA repair complex formation, protein interaction networks, and the coordinated assembly of DNA repair systems.

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 / DNA-PK Complex Assembly 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 / DNA-PK Complex Assembly Antibody.

Storage

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

Alternate Names

Ku80 antibody, XRCC5 DNA-PK antibody, XRCC5 repair complex antibody, Ku80 protein complex antibody, XRCC5 interaction complex antibody