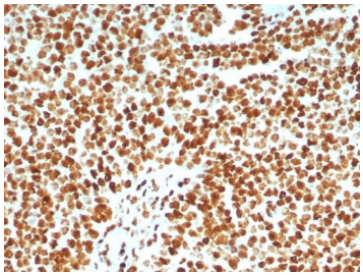
Ku80 Antibody / DNA Double-Strand Break Repair Antibody [clone XRCC5/8093R] (V4950)

Catalog No.	Formulation	Size
V4950-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4950-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4950SAF-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 IgG1, kappa
Clone Name	XRCC5/8093R
Purity	Protein A/G affinity
UniProt	P13010
Localization	Nucleus
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This Ku80 antibody is available for research use only.



Ku80 Antibody / DNA Double-Strand Break Repair Antibody. Immunohistochemistry of human lymph node tissue using Ku80 antibody clone XRCC5/8093R. Formalin-fixed, paraffin-embedded (FFPE) sections show strong HRP-DAB brown nuclear staining in lymphoid cells, consistent with the role of Ku80 (XRCC5) as a nuclear DNA double-strand break repair protein. The staining is widespread across the lymphocyte population, reflecting the high proliferative activity and active DNA repair processes in lymphoid tissue. Hematoxylin counterstain highlights nuclei (blue), providing clear contrast to the nuclear Ku80 signal.

Description

Ku80 (XRCC5) is a core DNA repair protein that plays a central role in the repair of DNA double-strand breaks through

the non-homologous end joining (NHEJ) pathway. Ku80 Antibody is uniquely positioned for studies focused on DNA double-strand break repair, where precise detection of repair machinery is essential for understanding how cells maintain genomic integrity. Ku80 forms a stable heterodimer with Ku70 (XRCC6), and this complex serves as one of the earliest responders to DNA damage by directly binding exposed DNA ends at break sites.

Upon binding to DNA, the Ku heterodimer acts as a molecular scaffold that recruits DNA-dependent protein kinase catalytic subunit (DNA-PKcs) and additional repair factors required for efficient ligation of DNA ends. Ku80 antibody, also known as XRCC5 antibody, detects a ubiquitously expressed nuclear protein that is rapidly mobilized to sites of double-strand breaks induced by ionizing radiation, oxidative stress, and chemotherapeutic agents. This rapid recruitment makes Ku80 an important marker for assessing the initiation and progression of DNA repair events at the molecular level.

This Ku80 Antibody is uniquely positioned for investigating the earliest stages of DNA damage recognition and repair complex assembly. Because Ku80 directly engages with DNA ends, its detection provides insight into the presence and activity of repair sites within the nucleus. In many experimental systems, Ku80 accumulation correlates with active DNA repair processes, allowing researchers to monitor how efficiently cells respond to genotoxic stress. This is particularly relevant in studies of radiation response, genome editing outcomes, and mechanisms of DNA repair pathway selection.

Ku80 is widely expressed across proliferating and non-proliferating cell types, but its functional importance is especially pronounced in rapidly dividing cells, including tumor cells, where DNA repair capacity is critical for survival. Alterations in Ku80 expression or activity have been associated with genomic instability, cancer progression, and resistance to DNA-damaging therapies. As a result, Ku80 is frequently studied in oncology research to understand how tumors maintain viability despite high levels of DNA damage.

As a member of the DNA repair protein family, Ku80 functions in coordination with DNA-dependent protein kinase and other NHEJ components to restore DNA integrity following damage. Its direct interaction with DNA and central role in repair initiation make it a reliable and biologically meaningful marker for studying double-strand break repair mechanisms. Ku80 Antibody provides a focused and robust tool for researchers examining DNA damage recognition, repair pathway activation, and the maintenance of genome stability under physiological and stress conditions.

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 Ku80 Antibody / DNA Double-Strand Break Repair 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 Ku80 Antibody / DNA Double-Strand Break Repair Antibody.

Storage

Aliquot the Ku80 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

XRCC5 antibody, Ku80 DNA repair antibody, Ku80 double-strand break antibody, XRCC5 NHEJ antibody, Ku80 DNA damage response antibody

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