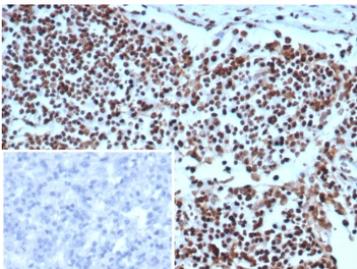


## XRCC5 Antibody / Genome Integrity Preservation Antibody [clone XRCC5/7314] (V4942)

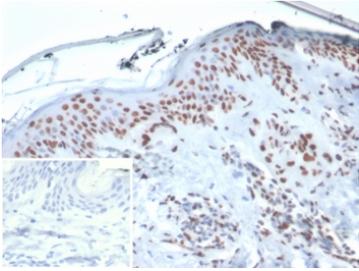
Catalog No.	Formulation	Size
V4942-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4942-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4942SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

### Bulk quote request

<b>Availability</b>	1-3 business days
<b>Species Reactivity</b>	Human
<b>Format</b>	Purified
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal (mouse origin)
<b>Isotype</b>	Mouse IgG1, kappa
<b>Clone Name</b>	XRCC5/7314
<b>Purity</b>	Protein A/G affinity
<b>UniProt</b>	P13010
<b>Localization</b>	Nucleus
<b>Applications</b>	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
<b>Limitations</b>	This XRCC5 antibody is available for research use only.



XRCC5 Antibody / Genome Integrity Preservation Antibody. Immunohistochemistry analysis of human lymph node tissue using XRCC5 antibody clone XRCC5/7314. Formalin-fixed, paraffin-embedded sections show strong HRP-DAB brown nuclear staining throughout the lymphoid cell population, consistent with XRCC5 (Ku80) expression in cells actively maintaining genomic integrity. The widespread nuclear signal reflects continuous DNA repair activity required to preserve chromosomal stability in highly proliferative immune cells. 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.



XRCC5 Antibody / Genome Integrity Preservation Antibody. Immunohistochemistry analysis of human skin tissue using XRCC5 antibody clone XRCC5/7314. Formalin-fixed, paraffin-embedded sections show strong HRP-DAB brown nuclear staining in epidermal keratinocytes, with comparatively weaker staining in the dermal compartment. The nuclear localization is consistent with XRCC5 (Ku80) function in preserving genome integrity, reflecting continuous DNA repair activity in proliferative epithelial layers exposed to environmental stress. 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 fundamental guardian of genome integrity, ensuring that DNA double-strand breaks are efficiently repaired and that chromosomal structure is preserved over time. XRCC5 Antibody is uniquely positioned for studies focused on genome integrity preservation, where detection of DNA repair proteins provides insight into how cells maintain stable genetic information across repeated cycles of replication and environmental stress. XRCC5 functions as part of the Ku heterodimer with XRCC6 (Ku70), binding DNA ends and initiating repair processes that prevent loss or rearrangement of genetic material.

XRCC5 Antibody is uniquely positioned for investigating long-term genome maintenance, where the cumulative effects of DNA damage and repair determine cellular health and disease progression. XRCC5 antibody, also referred to as Ku80 antibody, detects a nuclear protein that plays a continuous and protective role in safeguarding chromosomes from degradation, fusion, and mutation. Unlike markers that reflect acute damage, XRCC5 reflects the ongoing capacity of cells to preserve genome stability over time.

XRCC5 contributes to genome integrity not only by repairing DNA breaks but also by stabilizing DNA ends and preventing inappropriate processing that could lead to chromosomal abnormalities. Its activity is essential during DNA replication, where transient DNA breaks can occur, as well as during exposure to environmental stressors that challenge genome stability. Detection of XRCC5 therefore provides insight into the overall robustness of cellular maintenance systems rather than a single repair event.

Loss or dysfunction of XRCC5 leads to accumulation of DNA damage, increased mutation rates, and susceptibility to genomic instability-associated diseases, including cancer. Conversely, sustained XRCC5 activity supports long-term cellular viability and resistance to genomic stress. This makes XRCC5 particularly valuable for studies examining aging, disease progression, and cellular resilience.

In experimental models, XRCC5 can be used to evaluate how effectively cells maintain genome integrity under chronic stress conditions, including repeated DNA damage or replication stress. Its expression and activity serve as indicators of the balance between DNA damage accumulation and repair capacity. As a member of the DNA repair protein family, XRCC5 integrates DNA end recognition with repair processes that preserve chromosomal structure over time. XRCC5 Antibody provides a focused tool for studying genome stability, long-term DNA maintenance, and the biological consequences of genomic instability.

## Application Notes

Optimal dilution of the XRCC5 Antibody / Genome Integrity Preservation 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 / Genome Integrity Preservation Antibody.

## **Storage**

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

## **Alternate Names**

Ku80 antibody, XRCC5 genome stability antibody, XRCC5 genomic integrity antibody, Ku80 DNA maintenance antibody, XRCC5 chromosomal stability antibody