Recombinant Gamma H2AX Antibody / Phospho-S139 [clone RM224] (R20244)

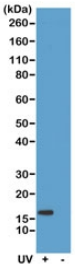
Catalog No.	Formulation	Size
R20244-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20244-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25

Recombinant RABBIT MONOCLONAL

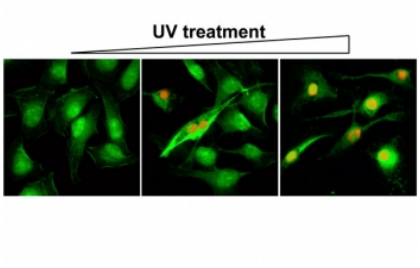
Citations (1)

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Vertebrates
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM224
Purity	Protein A purified from animal origin-free supernatant
UniProt	P16104
Gene ID	3014
Applications	Western Blot : 0.5-2ug/ml ELISA : 0.2-1ug/ml Immunocytochemistry : 0.5-2ug/ml
Limitations	This recombinant Gamma H2AX antibody is available for research use only.



Western blot of acid extracts of HeLa cells treated or non-treated with UV, using recombinant Gamma H2AX antibody at 0.5 ug/ml, showed a band of Histone H2A.X phosphorylated at Serine 139 in HeLa cells.



ICC/IF of HeLa cells using recombinant Gamma H2AX antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green).

Description

The Recombinant Gamma H2AX antibody is a recombinant reagent engineered to detect the phosphorylated form of histone H2AX at serine 139 (pSer139), commonly known as gamma H2AX. Histone H2AX is a variant of histone H2A that plays a central role in the cellular response to DNA double-strand breaks. Following genotoxic stress, kinases such as ATM, ATR, and DNA-PK phosphorylate H2AX at Ser139, generating gamma H2AX. This modification rapidly accumulates at DNA break sites, forming visible foci that act as recruitment platforms for DNA repair proteins. The Recombinant Gamma H2AX antibody provides highly specific recognition of this phosphorylation event, enabling researchers to investigate genome stability and DNA damage repair pathways.

Histone H2AX differs from canonical H2A by possessing an extended C-terminal tail containing the Ser139 residue. Once phosphorylated, gamma H2AX spreads across large chromatin domains surrounding double-strand breaks, coordinating the assembly of DNA damage response complexes. Proteins such as MDC1, 53BP1, and BRCA1 are recruited to gamma H2AX-labeled chromatin, linking this modification to checkpoint activation and repair pathway selection. The Recombinant Gamma H2AX antibody specifically distinguishes gamma H2AX from unmodified H2AX or other phosphorylated histones, providing accurate detection of double-strand break formation.

In western blotting, the Recombinant Gamma H2AX antibody identifies gamma H2AX as a distinct band, allowing quantitative assessment of DNA damage levels. In immunofluorescence, it produces characteristic nuclear foci, serving as one of the most sensitive markers of chromatin damage at the single-cell level. In immunohistochemistry, the antibody highlights areas of gamma H2AX accumulation in tissues subjected to irradiation or chemotherapy. It is also useful in chromatin immunoprecipitation (ChIP) to enrich DNA regions marked by DNA double-strand breaks. Recombinant production ensures reproducibility between batches, overcoming variability common with polyclonal phospho-specific antibodies.

This antibody is widely used in oncology and toxicology research, where gamma H2AX serves as a biomarker for monitoring DNA damage and therapeutic responses. It is also relevant in developmental biology, where programmed double-strand breaks occur naturally during meiosis and V(D)J recombination. Synonym terms such as recombinant phospho-Ser139 histone H2AX antibody, recombinant histone gamma H2AX antibody, and recombinant gamma histone H2AX antibody expand accessibility for researchers using alternate nomenclature.

By providing validated and reproducible detection, the Recombinant Gamma H2AX antibody ensures accurate assessment of DNA repair activity and genome integrity. NSJ Bioreagents validates this reagent under rigorous quality standards, giving researchers confidence in its use for western blotting, immunofluorescence, immunohistochemistry, and ChIP. With specificity for Ser139 phosphorylation, the Recombinant Gamma H2AX antibody is an essential tool for studying DNA damage signaling and chromatin-based repair pathways.

This recombinant Gamma H2AX antibody reacts to Histone H2A.X only when phosphorylated at serine 139. No cross reactivity with other phosphorylated histones.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant Gamma H2AX antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A phospho-peptide corresponding to phospho-Histone H2AX (pS139) was used as the immunogen for this recombinant Gamma H2AX antibody.

Storage

Store the recombinant Gamma H2AX antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).