Alexa Fluor® 594 anti-H2A.X Antibody

Catalog# / Size	600203 / 25 µg 600204 / 100 µg
Clone	W16171A
Regulatory Status	RUO
Other Names	H2A.X Variant Histone, H2A Histone Family Member X, Histone H2A.X, Histone H2AX, H2AFX
Isotype	Rat IgG2a, κ
Description	Histone subunit H2A, along with subunits 2B, 3, and 4, make up the core subunits of the nucleosome octomer. An octomer contains two protomers of each subunit tightly wrapped around a ~147 bp segment of DNA. Histones have integral roles in chromatin integrity, genomic stability, and gene regulation. Post-translational modification of histones in response to certain stimuli results in alterations of nucleosomal positioning relative to DNA. Histone H2A.X is a non-allelic variant of Histone 2A that harbors a C-terminal extension and is essential for checkpoint mediated cell cycle arrest and DNA double-stranded break (DSB) repair in response to both endogenous and exogenous agents, as well as meiotic recombination events and immunoglobulin class switching in lymphocytes. Phosphorylation of C-terminal residue serine 139 by ATM (γ-H2A.X) results in the recruitment of DSB-repair machinery. Phopshorylation of H2A.X is also critical for chromatin fragmentation during apoptosis.

Product Details

Verified Reactivity	Human, Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Synthetic human histone H2A.X peptide (127-143) conjugated to KLH.
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 594 under optimal conditions.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. **Do not freeze.**
Application	ICC - *Quality tested*
Recommended Usage	Each lot of this antibody is quality control tested by immunocytochemistry. For immunocytochemistry, a concentration range of 1.0 - 5.0 µg/ml is recommended. It is recommended that the reagent be titrated for optimal performance for each application. * Alexa Fluor® 594 has an excitation maximum of 590 nm, and a maximum emission of 617 nm. Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation. View full statement regarding label licenses
Excitation Laser	Green Laser (532 nm)/Yellow-Green Laser (561 nm)
Application Notes	This product is a monoclonal antibody raised against the C-terminus of H2A.X (residues 127-143); BioLegend's existing antibody against H2A.X (Poly6133, cat# 613302) is a polyclonal antibody which was generated against (partial), N-terminal H2A.X. This clone is not recommended for ChIP (Chromatin Immunoprecipitation) assays (as determined by in-house testing).
RRID	AB_2734498 (BioLegend Cat. No. 600203) AB_2734499 (BioLegend Cat. No. 600204)

Antigen Details

Structure	Histone H2A.X is a 143 amino acid protein with a predicted molecular weight of 15.1 kD.
Distribution	Ubiquitous tissue expression; nuclear localization
Function	H2A.X, upon phosphorylation, promotes DNA repair and maintains genomic stability. Important for recombination between immunoglobulin switch regions.
Interaction	ATM, MDC1, TP53BP1, BRCA1, MRE11, RAD50, NBN
Biology Area	Apoptosis/Tumor Suppressors/Cell Death, Cell Biology, Cell Cycle/DNA Replication, Chromatin Remodeling/Epigenetics, DNA Repair/Replication
Antigen References	1. Chen CC, *et al*. 2017. *Proc. Natl. Acad. Sci*. 114: 7665. 2. Natale F, *et al*. 2017. *Nat. Commun*. 8: 15760. 3. Bhargava R, *et al*. 2017. *Proc. Natl. Acad. Sci*. 114: 728. 4. Weyemi U, *et al*. 2016. *Nat. Commun*. 7: 10711. 5. Rezaeian AH, *et al*. 2017. *Nat. Cell. Biol*. 19: 38. 6. Horn S, *et al*. 2015. *Biochim. Biophys. Acta*. 1853: 2199. 7. Reina-San-Martin B, *et al*. 2003. *J. Exp. Med*. 197:1767 8. Celeste A, *et al*. 2002. *Science* 296:922. 9. Mannironi C, *et al*.1989. *Nucleic Acids Res*. 17:9113.
Gene ID	3014

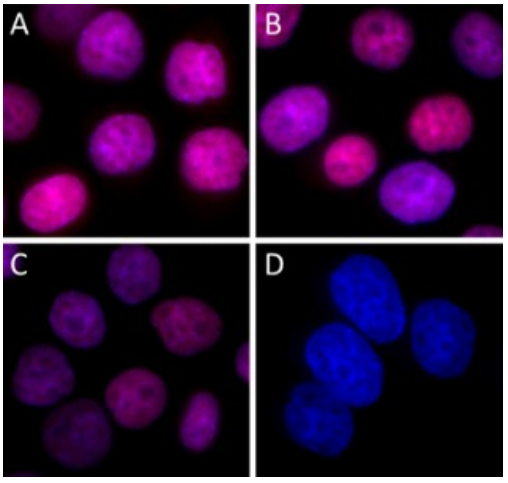
Related Protocols

Immunocytochemistry Staining Protocol

Other Formats

Purified anti-H2A.X, Alexa Fluor® 594 anti-H2A.X, Alexa Fluor® 647 anti-H2A.X, Alexa Fluor® 488 anti-H2A.X

Product Data



HeLa cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.5% Triton X-100 for 10 minutes, and blocked with 5% FBS for 60 minutes. Cells were then intracellularly stained with 1:100 (5 µg/mL, panel A), 1:200 (2.0 µg/mL, panel B) and 1:500 (1.0 µg/mL, panel C) dilutions of Alexa Fluor® 594 anti-H2A.X antibody for two hours at room temperature. Alexa Fluor® 594 Rat IgG2a, κ Isotype Ctrl Antibody (2.0 µg/mL) was used as a negative control (panel D). Nuclei were counterstained with DAPI, and images were captured with a 60X objective.

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