Data Sheet (Cat.No.TMAH-00883)

Anti-Phospho-ATM (Ser1981) Antibody (3I272)

Product Details

Ig Type:	Rabbit IgG
Reactivity:	Human
Conjugation:	Unconjugated
Clone:	3I272
Purification:	Affinity-chromatography

Applications

Verified Activity:	Immunofluorescence staining of Hela cells with TMAH-00883 at 1:100,counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. The secondary antibody was Alexa Fluor 488-congugated AffiniPure Goat Anti-Rabbit IgG (H+L).
Application:	ELISA, IF
Recommended	IF:1:20-1:200.

Properties

Stability & Storage:	Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles.
Shipping:	Shipping with blue ice.

Antigen Details

Immunogen:	A synthetic peptide: Human Phospho-ATM (S1981)
Antigen Species:	Human
Gene ID:	472
Uniprot ID:	Q13315
Synonyms:	OTTHUMP00000232981;ATM (p-S1981);telomere maintenance 1;TELO1;TEL1;AT mutated; Phospho-ATM (S1981);AT1;MGC74674;ATDC;ATA;Ataxia telangiectasia mutated homolog;ATM (p-Ser1981);Telomere fusion protein;Serine protein kinase ATM;Tefu;A-T mutated homolog;p-ATM (Ser1981);A-T mutated;ATC;Serine/threonine-protein kinase ATM;Ataxia telangiectasia mutated;ATM serine/threonine kinase;ATE;ATD;DKFZp781A0353;p-ATM (S1981);homolog
Biology Area:	Epigenetics and Nuclear Signaling

Research Background

Serine/threonine protein kinase which activates checkpoint signaling upon double strand breaks (DSBs), apoptosis and genotoxic stresses such as ionizing ultraviolet A light (UVA), thereby acting as a DNA damage sensor. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates 'Ser-139' of histone variant H2AX at double strand breaks (DSBs), thereby regulating DNA damage response mechanism. Also plays a role in pre-B cell allelic exclusion, a process leading to expression of a single immunoglobulin heavy chain allele to enforce clonality and monospecific recognition by the B-cell antigen receptor (BCR) expressed on individual B-lymphocytes. After the introduction of DNA breaks by the RAG complex on one immunoglobulin allele, acts by mediating a repositioning of

the second allele to pericentromeric heterochromatin, preventing accessibility to the RAG complex and recombination of the second allele. Also involved in signal transduction and cell cycle control. May function as a tumor suppressor. Necessary for activation of ABL1 and SAPK. Phosphorylates DYRK2, CHEK2, p53/TP53, FBXW7, FANCD2, NFKBIA, BRCA1, CTIP, nibrin (NBN), TERF1, UFL1, RAD9, UBQLN4 and DCLRE1C. May play a role in vesicle and/or protein transport. Could play a role in T-cell development, gonad and neurological function. Plays a role in replication-dependent histone mRNA degradation. Binds DNA ends. Phosphorylation of DYRK2 in nucleus in response to genotoxic stress prevents its MDM2-mediated ubiquitination and subsequent proteasome degradation. Phosphorylates ATF2 which stimulates its function in DNA damage response. Phosphorylates ERCC6 which is essential for its chromatin remodeling activity at DNA double-strand breaks.

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