abcam

Product datasheet

Anti-ATM antibody [ATM 11G12] ab31842

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概述

产品名称	Anti-ATM抗体[ATM 11G12]
描述	**小鼠单克隆抗体**[ATM 11G12] to ATM
宿主	Mouse
经测试应用	**适用于:** ICC/IF, Flow Cyt, WB, IP
种属反应性	**与反应:** Human
免疫原	Recombinant fragment, corresponding to amino acids 992-1144 of ATM
阳性对照	Lymphoblastoid cell line lysate

性能

形式	Liquid
存放说明	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
存储溶液	Constituent: PBS
纯度	IgG fraction
克隆	单克隆
克隆编号	ATM 11G12
骨髓瘤	Sp2/0-Ag14
同种型	IgG1

应用

Our Abpromise guarantee covers the use of **ab31842** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

应用	Ab评论	说明
ICC/IF		Use at an assay dependent concentration. See Abreview.
Flow Cyt		Use 2µg for 10^6 cells. ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

应用	Ab评论	说明
WB		1/500. Predicted molecular weight: 350 kDa.
IP		Use at an assay dependent concentration.

靶标

功能

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/H2AFX 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 p53/TP53, FANCD2, NFKBIA, BRCA1, CTIP, nibrin (NBN), TERF1, RAD9 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.

组织特异性

Found in pancreas, kidney, skeletal muscle, liver, lung, placenta, brain, heart, spleen, thymus, testis, ovary, small intestine, colon and leukocytes.

疾病相关

Defects in ATM are the cause of ataxia telangiectasia (AT) [MIM:208900]; also known as Louis-Bar syndrome, which includes four complementation groups: A, C, D and E. This rare recessive disorder is characterized by progressive cerebellar ataxia, dilation of the blood vessels in the conjunctiva and eyeballs, immunodeficiency, growth retardation and sexual immaturity. AT patients have a strong predisposition to cancer; about 30% of patients develop tumors, particularly lymphomas and leukemias. Cells from affected individuals are highly sensitive to damage by ionizing radiation and resistant to inhibition of DNA synthesis following irradiation.
Note=Defects in ATM contribute to T-cell acute lymphoblastic leukemia (TALL) and T-prolymphocytic leukemia (TPLL). TPLL is characterized by a high white blood cell count, with a predominance of prolymphocytes, marked splenomegaly, lymphadenopathy, skin lesions and serous effusion. The clinical course is highly aggressive, with poor response to chemotherapy and short survival time. TPLL occurs both in adults as a sporadic disease and in younger AT patients.
Note=Defects in ATM contribute to B-cell non-Hodgkin lymphomas (BNHL), including mantle cell lymphoma (MCL).
Note=Defects in ATM contribute to B-cell chronic lymphocytic leukemia (BCLL). BCLL is the commonest form of leukemia in the elderly. It is characterized by the accumulation of mature CD5+ B lymphocytes, lymphadenopathy, immunodeficiency and bone marrow failure.

序列相似性

Belongs to the PI3/PI4-kinase family. ATM subfamily.
Contains 1 FAT domain.
Contains 1 FATC domain.
Contains 1 PI3K/PI4K domain.

结构域

The FATC domain is required for interaction with KAT5.

翻译后修饰

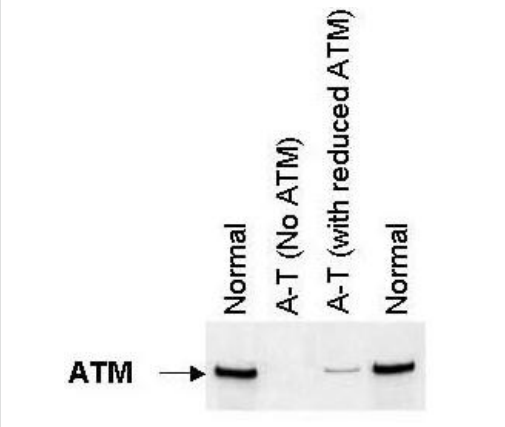
Phosphorylated by NUAK1/ARK5. Autophosphorylation on Ser-367, Ser-1893, Ser-1981

correlates with DNA damage-mediated activation of the kinase.
Acetylation, on DNA damage, is required for activation of the kinase activity, dimer-monomer transition, and subsequent autophosphorylation on Ser-1981. Acetylated in vitro by KAT5/TIP60.

细胞定位

Nucleus. Cytoplasmic vesicle. Primarily nuclear. Found also in endocytic vesicles in association with beta-adaptin.

图片

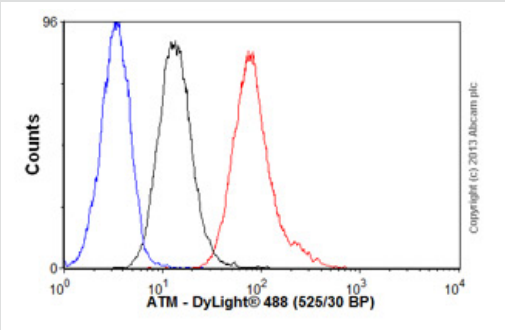


Western blot - Anti-ATM antibody [ATM 11G12] (ab31842)

All lanes : Anti-ATM antibody [ATM 11G12] (ab31842) at 1/500 dilution

Lanes 1 & 4 : Lysate of lymphoblastoid cell line from a normal patient showing ATM
Lane 2 : Lysate from a classical A-T patient with two truncating ATM mutations showing no ATM protein expression
Lane 3 : Lysate from an A-T patient carrying a splicing mutation that results in expression of ~5% of normal ATM

Predicted band size: 350 kDa



Flow Cytometry - Anti-ATM antibody [ATM 11G12] (ab31842)

Overlay histogram showing HeLa cells stained with ab31842 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab31842, 2µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line). Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.

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