ATM Antibody
Cat. No. CG1021

Applications:	WB, IF
Detected MW:	350 kDa
Species & Reactivity:	Human, Mouse
Isotype:	Rabbit IgG

BACKGROUND

ATM (Ataxia telangiectasia mutated) and ATR (Ataxia telangiectasia and Rad3 related) are closely related kinases that are activated by DNA damage. These serine-threonine protein kinases are part of the phosphatidylinositol-3 kinase-like kinase (PIKK) family. Upon recruitment by the DNA damage binding proteins/complexes (ATRIP for ATR; MRN for ATM), ATM/ATR initiate the DNA damage checkpoint by phosphorylating a number of key proteins. Once activated, the checkpoint leads to cell cycle arrest and either DNA repair or apoptosis. ATM is activated by double stranded breaks and phosphorylates Chk2, whilst ATR is activated by single strand breaks and phosphorylates Chk1.[1]

ATM 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. It recognizes the substrate consensus sequence [ST]-Q and phosphorylates 'Ser-139' of histone variant H2AX/H2AFX at double strand breaks (DSBs), thereby regulating DNA damage response mechanism.[2] ATM functions as a regulator of a wide variety of downstream proteins, including tumor suppressor proteins p53 and BRCA1, checkpoint kinase CHK2, checkpoint proteins RAD17 and RAD9, and DNA repair protein NBS1. Both ATM and ATR are thought to be master controllers of cell cycle checkpoint signaling pathways that are required for cell response to DNA damage and for genome stability.[3] Mutations in ATM gene are associated with ataxia telangiectasia, an autosomal recessive disorder.

References:
1. Yang, J. et al: Carcinogen. 24:1571-80, 2003
2. Nakamura, T.M. et al: Mol. Cell. Biol. 24:6215-30, 2004
3. Abraham, R.T.: Genes Dev. 15:2177-96, 2001

TECHNICAL INFORMATION

Source:
ATM Antibody is a rabbit antibody raised against human ATM sequence around Ser1981.

Specificity and Sensitivity:
This antibody detects endogenous levels of ATM proteins in normal cell lysates without cross-reactivity with other family members.

Storage Buffer: Solution in phosphate-buffered saline containing 0.02% sodium azide and 50% glycerol.
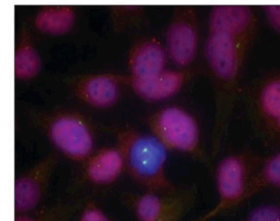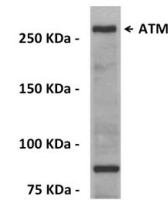
Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:500-1,000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d
IF	1:100-1:200
*Optimal dilutions must be determined by end user.	

QUALITY CONTROL DATA

Top: Analysis of extracts from 293T cells using Anti-ATM (Ab-1981) antibody and the same antibody preincubated with blocking peptide.
Bottom: Staining of methanol-fixed HeLa cells using Anti-ATM (Ab-1981) antibody (Red).