

# DNA Damage Antibody Sampler Kit

Cat# AK0146

Upon receipt, store at -20°C. Avoid freeze/thaw cycles.

## PRODUCT DESCRIPTION

Ataxia telangiectasia mutated kinase (ATM) and ataxia telangiectasia and Rad3-related kinase (ATR) are PI3 Kinase-related kinase (PIKK) family members that phosphorylate multiple substrates on serine or threonine residues that are followed by a glutamine in response to DNA damage or replication blocks. p53 is phosphorylated by ATM, ATR and DNA-PK at Ser15. This phosphorylation impairs the ability of MDM2 to bind p53, promoting both the accumulation and activation of p53 in response to DNA damage. Chk1 and Chk2, downstream protein kinases of ATM/ATR, plays an important role in DNA damage checkpoint control, embryonic development and tumor suppression. Chk1 is phosphorylated at Ser280 and Ser296 following DNA damage. The amino-terminal domain of Chk2 contains a series of seven serine or threonine residues, including Thr68, each followed by glutamine (SQ or TQ motif). After DNA damage by ionizing radiation (IR), UV irradiation or hydroxyurea treatment, Thr68 and other sites in this region become phosphorylated by ATM/ATR. The breast cancer susceptibility proteins BRCA1 and BRCA2 are frequently mutated in cases of hereditary breast and ovarian cancers and have roles in multiple processes related to DNA damage, repair, cell cycle progression, transcription, ubiquitination and apoptosis. Numerous DNA-damage induced phosphorylation sites on BRCA1 have been identified, including serine 1524, and kinases activated in a cell cycle-dependent manner, including Aurora A and CDK2, can also phosphorylate BRCA1. IR, DNA and radiometric-induced DNA damage also results in rapid phosphorylation of the histone H2A family member H2A.X at Ser139 by ATM. Within minutes following DNA damage, Ser139-phosphorylated H2A.X localizes to sites of DNA damage at subnuclear foci.

## PRODUCT INCLUDES

Cat No.	Product name	Quantity	Applications	Reactivity	Host
A340208	Phospho-CHEK2 (Thr68) Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
A340376	Phospho-Histone H2A.X (Ser139) Polyclonal Antibody	20µL	WB	Human, Mouse, Rat	Rabbit
A340264	Phospho-P53 (Ser15) Polyclonal Antibody	20µL	WB, IHC, IF, IP, ELISA	Human, Rat	Rabbit
A340385	Phospho-ATM (Ser1981) Polyclonal Antibody	20µL	WB, IHC-p, ELISA	Human, Mouse	Rabbit

<b>A1013s</b>	Goat Anti-Rabbit IgG (H+L) (peroxidase/HRP conjugated)	120μL	WB, ELISA	Rabbit	Goat
---------------	---	-------	-----------	--------	------

## **PRODUCT USE LIMITATION**

These products are intended for research use only.