Phospho-ATM Sampler Kit

E051044

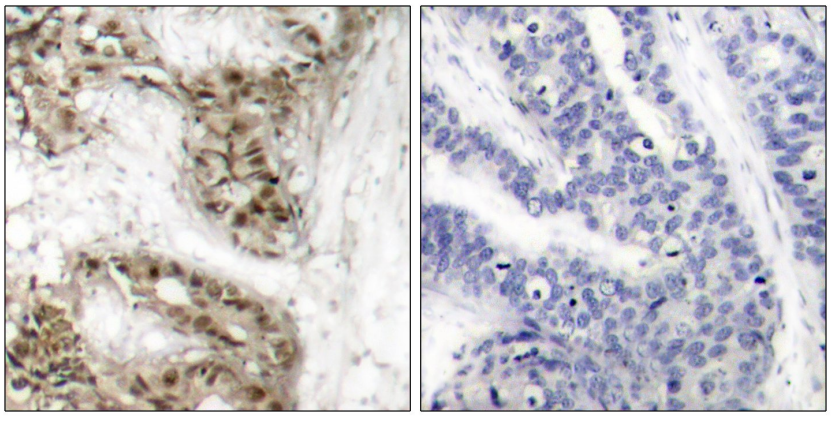
Kits Includes	Cat.	Quantity	Application	Reactivity	Source
cdc25C (Phospho-Ser216) Antibody	E011118-1	50μg/50μl	IHC, IF	Human	Rabbit
Chk1 (Phospho-Ser345) Antibody	E011121-1	50μg/50μl	IHC	Human, Mouse, Rat	Rabbit
Chk2 (Phospho-Thr68) Antibody	E011061-1	50μg/50μl	IHC, WB	Human, Mouse, Rat	Rabbit
ATM (Phospho-Ser1981) Antibody	E011122-1	50μg/50μl	IHC	Human, Mouse	Rabbit
p53 (Phospho-Ser15) Antibody	E011094-1	50μg/50μl	IHC, WB,IF	Human	Rabbit

ATM protein belongs to the PI3/PI4-kinase family. This protein is an important cell cycle checkpoint kinase that phosphorylates; thus, it 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. This protein and the closely related kinase 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. Mutations in this gene are associated with ataxia telangiectasia, an autosomal recessive disorder. Two transcript variants encoding different isoforms have been found for this gene. 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 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. 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 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. Phosphorylated by NUAK1/ARK5. Autophosphorylation on Ser-367, Ser-1983, 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.

cdc25C (Phospho-Ser216) Antibody

E011118

Catalog Number: E011118-1, E011118-2
Amount: 50μg/50μl, 100μg/100μl
Swiss-Prot No. : P30307
All Names: CDC25M1, Dual specificity phosphatase Cdc25C, M-phase inducer phosphatase 3, MPIP3
All Sites: Human: Ser216
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human cdc25C around the phosphorylation site of serine 216 (S-P-S^{P}-M-P).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: cdc25C (phospho-Ser216) antibody detects endogenous levels of cdc25C only when phosphorylated at serine 216.
Reactivity: Human
Applications: IHC: 1:50~1:100 IF: 1:100-200
References:
Toyoshima-Morimoto F. et al. (2002) EMBO Rep. 3(4): 341-348.
Ferguson AM. et al. (2005) Mol Cell Biol. 25(7): 2853-2860.
Donzelli M. et al. (2003) EMBO Rep. 4(7): 671-677.
Chen F. et al. (2002) Proc Natl Acad Sci U S A. 99(4): 1990-1995.



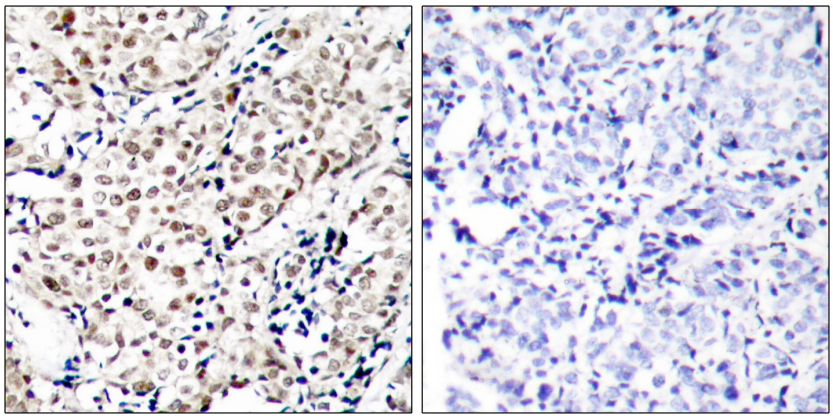
P-Peptide - +

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using cdc25C (phospho-Ser216) antibody (E011118).

Chk1 (Phospho-Ser345) Antibody

E011121

Catalog Number: E011121-1, E011121-2
Amount: 50μg/50μl, 100μg/100μl
Swiss-Prot No. : O14757
All Names: CHEK1, Chk1, kinase Chk1
All Sites: Human: Ser345; Mouse: Ser345; Rat: Ser345
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human Chk1 around the phosphorylation site of serine 345 (S-F-S^{P}-Q-P).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatogramphy using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: Chk1 (phospho-Ser345) antibody detects endogenous levels of Chk1 only when phosphorylated at serine 345.
Reactivity: Human, Mouse, Rat
Applications: IHC: 1:50~1:100
References:
Shiromizu T, et al. (2006) Genes CellsMay: 11(5): 477-85.
Hang YW, et al. (2005) Mol Cell: 19(5): 607-18.
Lu X, et al. (2005) Genes Dev: 19(10): 1162-74.
Falck J, et al. (2005) Nature: 434(7033): 605-11.



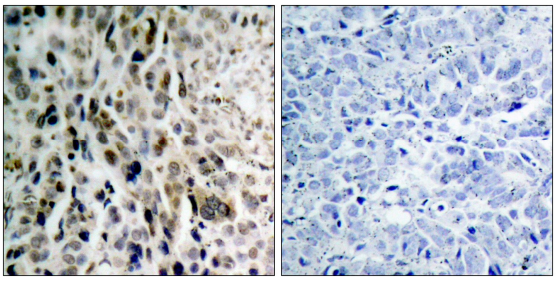
P-Peptide - +

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using Chk1 (phospho-Ser345) antibody (E011121).

Chk2 (Phospho-Thr68) Antibody

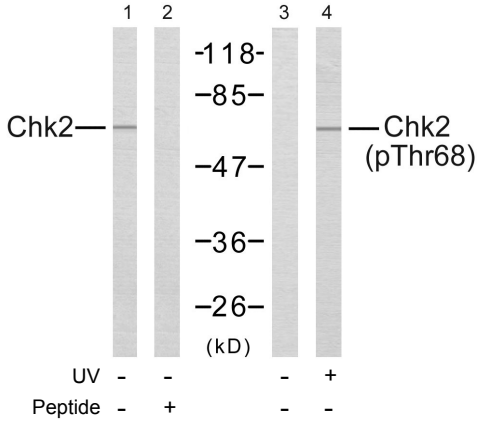
E011061

Catalog Number: E011061-1, E011061-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human Chk2 around the phosphorylation site of threonine 68 (V-S-T^P-Q-E).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatogramphy using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: Chk2 (phospho-Thr68) antibody detects endogenous levels of Chk2 only when phosphorylated at threonine 68.
Reactivity: Human, Mouse, Rat
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100
Swiss-Prot No. : O96017
References: Gorgoulis VG, et al. (2005) Nature; 434(7035): 907-13.
Falck J, et al. (2005) Nature; 434(7033): 605-11.
Jin ZH, et al. (2005) Oncogene; 24(12): 1973-81.
Li J, et al. (2005) J Biol Chem; 280(12): 12041-50.



P-Peptide - +

Immunohistochemical analysis of paraffin- embedded human lung carcinoma tissue using Chk2 (phospho-Thr68) antibody (E011061).

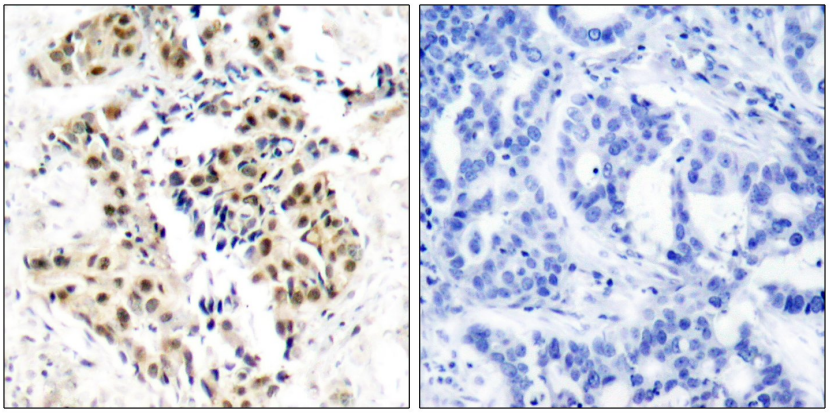


Western blot analysis of extract from Jurkat cells, using Chk2 (Ab-68) antibody (E021087, Lane 1 and 2) and Chk2 (phospho-Thr68) antibody (E011061, Lane 3 and 4).

ATM (Phospho-Ser1981) Antibody

E011122

Catalog Number: E011122-1, E011122-2
Amount: 50μg/50μl, 100μg/100μl
Swiss-Prot No. : Q13315
All Names: A-T, mutated, Ataxia telangiectasia mutated, Ataxia telangiectasia mutated homolog, Serine-protein kinase ATM, kinase ATM
All Sites: Human: Ser1981; Mouse: Ser1987
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human ATM around the phosphorylation site of serine 1981 (E-G-S^P-Q-S).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: ATM (phospho-Ser1981) antibody detects endogenous levels of ATM only when phosphorylated at serine 1981.
Reactivity: Human, Mouse
Applications: IHC: 1:50~1:100
References: Gupta A. et al. (2005) Mol Cell Biol. 25(12): 5292-5305.
Bernstein JL. et al. (2002) Breast Cancer Res. 4(6): 249-252.
Silverman J. et al. (2004) Genes Dev. 18(17): 2108-2119.
Nakada D. et al. (2003) Nucleic Acids Res. 31(6): 1715-1724.



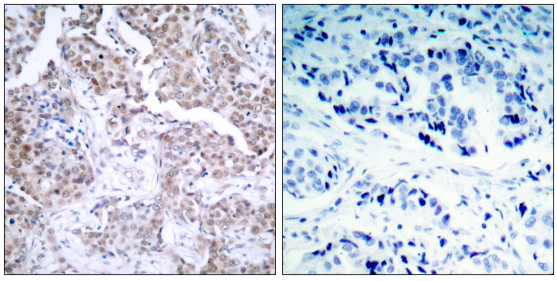
P-Peptide - +

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using ATM (phospho-Ser1981) antibody (E011122).

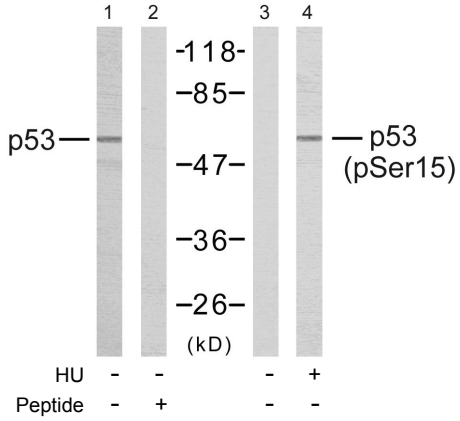
p53 (Phospho-Ser15) Antibody

E011094

Catalog Number: E011094-1, E011094-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human p53 around the phosphorylation site of serine 15 (P-L-S^P-Q-E).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: p53 (phospho-Ser15) antibody detects endogenous levels of p53 only when phosphorylated at serine15.
Reactivity: Human
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100 IF: 1:100-200
Swiss-Prot No. : P04637
References:
Shieh, S. Y. et al. (1999) *EMBO J.* 18, 1815-1823.
Honda, R. et al. (1997) *FEBS Lett.* 420, 25-27.
Hirao, A. et al. (2000) *Science* 287, 1824-1827.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using p53 (phospho-Ser15) antibody (E011094).



Western blot analysis of the extracts from HeLa cells untreated or treated with hydroxyurea, using p53 (Ab-15) antibody (E021085, Line1 and 2) and p53 (phospho-Ser15) antibody (E011094, Line3 and 4).