

Double Strand Breaks (DSB) Repair Antibody Sampler Kit

Cat# AK0148

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

PRODUCT DESCRIPTION

Double strand DNA breaks (DSB) in mammalian cells can be repaired by the related mechanisms of non-homologous end-joining (NHEJ) and homologous recombination (HR). A DNA-dependent protein kinase composed of DNA-binding subunits Ku70 and Ku86 and the DNA-PKcs catalytic subunit mediates NHEJ repair. The Ku heterodimer binds free DNA ends and recruits DNA-PKcs to the break. DNA-PKcs signals areas of DNA damage and recruits additional proteins, such as the Artemis exo- and endonuclease that processes and primes the damaged sequence. Following replacement DNA synthesis, a ligase complex composed of DNA ligase IV and XRCC4 joins the repaired ends. XRCC4-like factor (XLF) is an essential ligase-associated repair factor that promotes gap-filling during NHEJ. Homologous recombination utilizes aligned homologous sequences as a repair template. The MRN complex, composed of Mre11, Rad50, and nibrin (p95/NBS1), plays a critical role in sensing, processing and repairing breaks. MRN interacts with BRCA1 and CtIP to facilitate 5' resection of DSB DNA to generate 3' ssDNA ends necessary for repair. DNA-binding protein Mre11 exhibits exonuclease and endonuclease activity and is largely responsible for ssDNA end processing. Interaction between the MRN complex and ATM kinase promotes association between the kinase and its substrates and likely leads to ATM activation. ATM acts a central controller of the cell cycle checkpoint by phosphorylating multiple targets, including c-Abl, BRCA1 and p95/NSB1. Activated c-Abl phosphorylates Rad52, which promotes Rad51 binding to ssDNA and subsequent annealing of ssDNA.

PRODUCT INCLUDES

Cat No.	Product name	Quantity	Applications	Reactivity	Host
A340385	Phospho-ATM (Ser1981) Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse	Rabbit
A340439	ATM Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse	Rabbit
A340501	PRKDC Polyclonal Antibody	20µL	WB, IHC, IF, ELISA	Human, Mouse	Rabbit
A340579	XRCC5 Polyclonal Antibody	20µL	WB, IHC, IF, ELISA	Human, Monkey	Rabbit

A340597	MRE11 Polyclonal Antibody	20μL	WB, IHC, ELISA	Human, Mouse, Rat, Monkey	Rabbit
A340655	RAD50 Polyclonal Antibody	20μL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
A1013s	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.