Revision 1

#99891 Store at -20°C

Homologous Recombination (HR) DNA Repair Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
ATM (D2E2) Rabbit mAb	2873	20 µl	350 kDa	Rabbit IgG
Phospho-ATM (Ser1981) (D25E5) Rabbit mAb	13050	20 µl	350 kDa	Rabbit IgG
Rad51 (D4B10) Rabbit mAb	8875	20 µl	37 kDa	Rabbit IgG
BRCA1 (A8X9F) Rabbit mAb	14823	20 µl	220 kDa	Rabbit IgG
BRCA2 (D9S6V) Rabbit mAb	10741	20 µl	380 kDa	Rabbit IgG
Rad54 (D4W3Z) Rabbit mAb	15016	20 µl	84 kDa	Rabbit IgG
p95/NBS1 (D6J5I) Rabbit mAb	14956	20 µl	95 kDa	Rabbit IgG
Phospho-p95/NBS1 (Ser343) Antibody	3001	20 µl	95 kDa	Rabbit
CtIP (D76F7) Rabbit mAb	9201	20 µl	110 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Homologous Recombination (HR) DNA Repair Antibody Sampler Kit provides an economical means of detecting proteins involved in HR DNA repair. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Background

DNA double-strand breaks (DSBs) are potentially hazardous lesions that can be induced by ionizing radiation (IR), radiomimetic chemicals, or DNA replication inhibitors. Cells recognize and repair DSBs via two distinct but partly overlapping signaling pathways, non-homologous end joining (NHEJ) and homologous recombination (HR). DSBs that arise during S or G2 phase are repaired via HR, using the replicated sister chromatid as a repair template (1). Activation of ATM by autophosphorylation on Ser1981 occurs in response to exposed DNA DSBs. ATM regulates various responses to DNA damage, including regulation of HR factors (2). Rad51 recombinase polymerizes and forms a filament along single-stranded DNA, mediating HR with the help of auxiliary proteins, including Rad54 and BRCA2 (3). BRCA2 has been shown to be required for localization of Rad51 to sites of DSBs, and cells lacking BRCA1 and BRCA2 cannot repair DSBs through HR (4). NBS1 is critical for HR, and requires CDK-dependent association with CtIP and subsequent phosphorylation by ATM at Ser278 and Ser343 (5-6).

Background References

1. Hartlerode, A.J. and Scully, R. (2009) *Biochem J* 423, 157-68.
2. Lee, J.H. and Paull, T.T. (2007) *Oncogene* 26, 7741-8.
3. Sung, P. et al. (2003) *J Biol Chem* 278, 42729-32.
4. Tutt, A. and Ashworth, A. (2002) *Trends Mol Med* 8, 571-6.
5. Wang, H. et al. (2013) *PLoS Genet* 9, e1003277.
6. Wen, J. et al. (2013) *Oncogene* 32, 4448-56.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.