Revision 4

Store at -20C

#9040

Rad18 (D2B8) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H	Endogenous	80, 90	Rabbit IgG	#Q9NS91	56852

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Immunofluorescence (Immunocytochemistry)	1:400 - 1:800

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.

Specificity/Sensitivity

Rad18 (D2B8) XP® Rabbit mAb recognizes endogenous levels of total Rad18 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human Rad18 protein.

Background

DNA damage, if not repaired, can lead to genome instability and tumorigenesis. Eukaryotic cells use multiple (sometimes overlapping) signaling pathways to respond to agents that cause various types of DNA lesions. Downstream molecules in DNA repair pathways converge on the sites of DNA damage, resulting in cell cycle arrest and repair or apoptosis (1). Rad18 is an E3 ubiquitin ligase recruited to sites of DNA damage. Along with the E2 ubiquitin ligase Rad6, Rad18 is responsible for monoubiquitination of DNA damage proteins including the replication clamp PCNA and the Fanconi anemia core protein FANCD2. Monoubiquitination of these proteins signals to downstream effector molecules and results in the repair of either post-replication repair lesions via the translesion synthesis (TLS) pathway or DNA double strand breaks via homologous recombination (2-4). Phospho-proteomic studies indicate that Ser403 of Rad18 may be phosphorylated by ATM/ATR in response to DNA damage-inducing agents (5,6).

Background References

1. Helleday, T. et al. (2008) *Nat Rev Cancer* 8, 193-204.
2. Huang, J. et al. (2009) *Nat Cell Biol* 11, 592-603.
3. Song, I.Y. et al. (2010) *J Biol Chem* 285, 31525-36.
4. Ting, L. et al. (2010) *DNA Repair (Amst)* 9, 1241-8.
5. Mu, J.J. et al. (2007) *J Biol Chem* 282, 17330-4.
6. Matsuoka, S. et al. (2007) *Science* 316, 1160-6.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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Limited Uses

force or effect.

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