Revision 1

#14466 Store at -20C

# RAP80 (D1T6Q) 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: |
|---|---|---|---|---|---|---|
| WB, IF-IC | H | Endogenous | 90 | Rabbit IgG | #Q96RL1 | 51720 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunofluorescence (Immunocytochemistry) | 1:400 |

## 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

RAP80 (D1T6Q) Rabbit mAb recognizes endogenous levels of total RAP80 protein.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly321 of human RAP80 protein.

## Background

The breast cancer type 1 susceptibility protein (BRCA1) is an E3 ubiquitin ligase that functions in the maintenance of genome stability through regulation of the DNA damage response and DNA repair. BRCA1 protein forms at least three distinct complexes (BRCA1 A, B, and C) with other DNA repair proteins, and these interactions are vital for regulation of BRCA1 protein function. The BRCA1-RAP80 complex (BRCA1 A complex) includes RAP80, BRCC36, BRE, Abraxas, and NBA1 and functions in G2/M phase checkpoint control (reviewed in 1,2).
The ubiquitously expressed receptor-associated protein 80 (RAP80, UIMC1) is required for recruitment and stability of the BRCA1 A complex at sites of DNA damage (3). Research studies indicate that the absence of RAP80 in cells results in increased sensitivity to the topoisomerase II inhibitor etoposide (4). In the absence of functional RAP80, BRCA1 A complex function is suppressed and cells become more sensitive to DNA damage-induced genome instability (5,6). Phosphorylation of RAP80 by CDK1/Cyclin B at Ser177 regulates RAP80 function at the mitotic checkpoint (7). A naturally occurring in-frame deletion mutant within RAP80 likely alters RAP80 protein-protein interactions and is associated with an increase in chromosomal abnormalities (8,9).

## Background References

1. Ohta, T. et al. (2011) *FEBS Lett* 585, 2836-44.
2. Huen, M.S. et al. (2010) *Nat Rev Mol Cell Biol* 11, 138-48.
3. Wu, J. et al. (2012) *J Biol Chem* 287, 22919-26.
4. Iijima, J. et al. (2010) *Cancer Res* 70, 8467-74.
5. Bian, C. et al. (2012) *PLoS One* 7, e40406.
6. Yin, Z. et al. (2012) *Cancer Res* 72, 5080-90.
7. Cho, H.J. et al. (2013) *J Biol Chem* 288, 3768-76.
8. Nikkilä, J. et al. (2009) *Oncogene* 28, 1843-52.
9. Anamika et al. (2014) *J Biol Chem* 289, 12852-62.

## 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

**WB:** Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

## Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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