Revision 1

Store at +4C

#6992

# Phospho-NDRG1 (Thr346) (D98G11) XP® Rabbit mAb (Alexa Fluor® 488 Conjugate)

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.**

| Applications: | Reactivity: | Sensitivity: | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|
| IF-IC, FC-FP | H M R Mk | Endogenous | Rabbit IgG | #Q92597 | 10397 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Immunofluorescence (Immunocytochemistry) | 1:50 |
| Flow Cytometry (Fixed/Permeabilized) | 1:50 |

## Storage

Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

## Specificity/Sensitivity

Phospho-NDRG1 (Thr346) (D98G11) XP® Rabbit mAb (Alexa Fluor® 488 Conjugate) detects endogenous levels of NDRG1 when phosphorylated at Thr346. This antibody likely cross-reacts with other conserved phosporylation sites on NDRG1 at positions Thr356 and Thr366.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr346 of human NDRG1 protein.

## Description

This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 488 fluorescent dye and tested in-house for direct flow cytometry and immunofluorescent analysis in human cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-NDRG1 (Thr346) (D98G11) XP® Rabbit mAb #5482.

## Background

N-myc downstream-regulated gene 1 (NDRG1), also termed Cap43, Drg1, RTP/rit42, and Proxy-1, is a member of the NDRG family, which is composed of four members (NDRG1-4) that function in growth, differentiation, and cell survival (1-5). NDRG1 is ubiquitously expressed and highly responsive to a variety of stress signals, including DNA damage (4), hypoxia (5), and elevated levels of nickel and calcium (2). Expression of NDRG1 is elevated in N-myc defective mice and is negatively regulated by N- and c-myc (1,6). During DNA damage, NDRG1 is induced in a p53-dependent fashion and is necessary for p53-mediated apoptosis (4,7). Research studies have shown that NDRG1 may also play a role in cancer progression by promoting differentiation, inhibiting growth, and modulating metastasis and angiogenesis (3,4,6,8,9). Nonsense mutation of the *NDRG1* gene has been shown to cause hereditary motor and sensory neuropathy-Lom (HMSNL), which is supported by studies demonstrating the role of NDRG1 in maintaining myelin sheaths and axonal survival (10,11). NDRG1 is upregulated during mast cell maturation and its deletion leads to attenuated allergic responses (12). Both NDRG1 and NDRG2 are substrates of SGK1, although the precise physiological role of SGK1-mediated phosphorylation is not known (13). NDRG1 is phosphorylated by SGK1 at Thr328, Ser330, Thr346, Thr356, and Thr366. Phosphorylation by SGK1 primes NDRG1 for phosphorylation by GSK-3.

## Background References

1. Shimono, A. et al. (1999) *Mech Dev* 83, 39-52.
2. Zhou, D. et al. (1998) *Cancer Res* 58, 2182-9.
3. van Belzen, N. et al. (1997) *Lab Invest* 77, 85-92.
4. Kurdistani, S.K. et al. (1998) *Cancer Res* 58, 4439-44.
5. Park, H. et al. (2000) *Biochem Biophys Res Commun* 276, 321-8.
6. Li, J. and Kretzner, L. (2003) *Mol Cell Biochem* 250, 91-105.
7. Stein, S. et al. (2004) *J Biol Chem* 279, 48930-40.
8. Maruyama, Y. et al. (2006) *Cancer Res* 66, 6233-42.
9. Nishio, S. et al. (2008) *Cancer Lett* 264, 36-43.
10. Kalaydjieva, L. et al. (2000) *Am J Hum Genet* 67, 47-58.
11. Okuda, T. et al. (2004) *Mol Cell Biol* 24, 3949-56.
12. Taketomi, Y. et al. (2007) *J Immunol* 178, 7042-53.
13. Murray, J.T. et al. (2004) *Biochem J* 384, 477-88.

## Species Reactivity

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

## Applications Key

**IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

## Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

This product is provided under an intellectual property license from Life Technologies Corporation. The transfer of this product is conditioned on the buyer using the purchased product solely in research conducted by the buyer, excluding contract research or any fee for service research, and the buyer must not (1) use this product or its components for (a) diagnostic, therapeutic or prophylactic purposes; (b) testing, analysis or screening services, or information in return for compensation on a per-test basis; or (c) manufacturing or quality assurance or quality control, and/or (2) sell or transfer this product or its components for resale, whether or not resold for use in research. For information on purchasing a license to this product for purposes other than as described above, contact Life Technologies Corporation, 5791 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@lifetech.com.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

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.