Revision 1

Store at -20C

#94350

NLK (D9X3C) Rabbit mAb

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:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	58	Rabbit IgG	#Q9UBE8	51701

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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

NLK (D9X3C) Rabbit mAb recognizes endogenous levels of total NLK protein.

Source / Purification

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

Background

Nemo-like kinase (NLK) is a serine/threonine-protein kinase that regulates multiple signaling pathways, including Wnt/β-catenin, TGFβ, IL-6, and Notch (1-4). NLK contributes to cell proliferation, differentiation, cell fate determination during early embryogenesis and nervous system development in vertebrates (5-7). Recent studies showed that NLK is aberrantly expressed in various types of cancer where it regulates cancer cell proliferation, migration, invasion and survival (8-11). NLK is localized predominantly in nucleus and at a lower level in cytoplasm(12). Homodimerization of NLK is required for its activation and nuclear localization. NLK is activated via intermolecular autophosphorylation at Thr286 (13). NLK interacts with and phosphorylates a number of transcription factors including FOXO1, FOXO4, MYB, NOTCH1 and TCF7L2/TCF4, and LEF-1/TCF (14-18). NLK also associates with E3 ubiquitin ligase NARF and Raptor and regulates their function (19,20).

Background References

1. Smit, L. et al. (2004) *J Biol Chem* 279, 17232-40.
2. Ohkawara, B. et al. (2004) *Genes Dev* 18, 381-6.
3. Kojima, H. et al. (2005) *Proc Natl Acad Sci U S A* 102, 4524-9.
4. Ishitani, T. et al. (2010) *Nat Cell Biol* 12, 278-85.
5. Hyodo-Miura, J. et al. (2002) *Genes Cells* 7, 487-96.
6. Thorpe, C.J. and Moon, R.T. (2004) *Development* 131, 2899-909.
7. Satoh, K. et al. (2007) *Mol Cell Biol* 27, 7623-30.
8. Li, M. et al. (2013) *Tumour Biol* 34, 3995-4000.
9. Lv, L. et al. (2014) *J Cell Biochem* 115, 81-92.
10. Huang, Y. et al. (2013) *PLoS One* 8, e69148.
11. Dong, J.R. et al. (2013) *Asian Pac J Cancer Prev* 14, 7137-41.
12. Brott, B.K. et al. (1998) *Proc Natl Acad Sci U S A* 95, 963-8.
13. Ishitani, S. et al. (2011) *Mol Biol Cell* 22, 266-77.
14. Ishitani, T. et al. (2003) *Mol Cell Biol* 23, 1379-89.
15. Kanei-Ishii, C. et al. (2004) *Genes Dev* 18, 816-29.
16. Kim, S. et al. (2010) *J Biol Chem* 285, 8122-9.
17. Togi, S. et al. (2011) *J Biol Chem* 286, 19170-7.
18. Szypowska, A.A. et al. (2011) *Antioxid Redox Signal* 14, 563-78.
19. Yamada, M. et al. (2006) *J Biol Chem* 281, 20749-60.
20. Yuan, H.X. et al. (2015) *Genes Dev* 29, 2362-76.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

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

Trademarks and Patents

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.