Revision 1

#3394 Store at -20C

NHERF1 (A310) Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC	H	Endogenous	50	Rabbit	#O14745	9368

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:50

Storage

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

Specificity / Sensitivity

NHERF1 (A310) Antibody detects endogenous levels of total NHERF1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide surrounding Ala310 of human NHERF1. Antibodies are purified by peptide affinity chromatography.

Background

Na+/H+ exchanger regulatory factor (NHERF1 or EBP-50) is one of several related PDZ domain-containing proteins (1). NHERF1 was first identified as a necessary cofactor for cyclic AMP-associated inhibition of Na+/ H+ exchanger isoform 3 (NHE3) (2). NHERF1 is a multifunctional adaptor protein that interacts with receptors and ion transporters via its PDZ domains, and with the ERM family of proteins, including merlin, via its carboxy-terminus (2,3). NHERF1 may play an important role in breast cancer. Estrogen has been found to induce NHERF1 in estrogen receptor-positive breast cancer cells (2,3). Furthermore, NHERF1 has been shown to bind to PDGFR, which is activated in breast carcinomas. NHERF1 has been found to promote the formation of a ternary complex containing PTEN, NHERF1, and PDGFR. Therefore, NHERF1 may function to recruit PTEN to PDGFR to inhibit the activation of PI3K/Akt signaling in normal cells; this mechanism may be disrupted in cancer (4). NHERF1 also binds to the cystic fibrosis transmembrane conductance regulator (CFTR), which functions as an ion channel and has disease-causing mutations in cystic fibrosis (5). Other proposed functions of NHERF1 include testicular differentiation, endosomal recycling, membrane targeting, protein sorting, and trafficking (6).

Background References

1. Donowitz, M. et al. (2005) *J Physiol* 567, 3-11.
2. Voltz, J.W. et al. (2001) *Oncogene* 20, 6309-14.
3. Stemmer-Rachamimov, A.O. et al. (2001) *Am J Pathol* 158, 57-62.
4. Takahashi, Y. et al. (2006) *EMBO J* 25, 910-20.
5. Wheeler, D. et al. (2007) *J Biol Chem* 282, 25076-87.
6. Weinman, E.J. et al. (2000) *Am J Physiol Renal Physiol* 279, F393-9.

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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