

WNK2 (46.21): sc-100452

BACKGROUND

The protein kinase superfamily contains over a thousand proteins in 57 subfamilies that all share a catalytic core of 250-300 amino acids organized in 2 domains. WNK, for "with no lysine (K)", kinases are serine-threonine protein kinases that contain a cysteine residue in place of a lysine residue in a family of proteins that traditionally contain a lysine following a short string of hydrophobic residues. WNK kinases contain a lysine upstream of the traditional position, within a glycine string. This lysine functions as an anchor and orients ATP through interactions with the α and β phosphoryl groups. The catalytic domains of WNK2, WNK3 and WNK4 are 95% homologous to WNK1. The human WNK1 gene encodes a 2,382 amino acid protein that is primarily expressed in heart, kidney, muscle and distal nephron. The human WNK3 gene encodes a protein that is primarily expressed in brain; the human WNK4 gene encodes a 1,243 amino acid protein that is expressed in kidney. Aberrant function of WNK kinases and their associated signaling pathways are implicated in hypertension, increased renal salt reabsorption and impaired K^+ and H^+ excretion.

REFERENCES

- Xu, B., et al. 2000. WNK1, a novel mammalian serine/threonine protein kinase lacking the catalytic lysine in subdomain II. *J. Biol. Chem.* 275: 16795-16801.
- Verissimo, F. and Jordan, P. 2001. WNK kinases, a novel protein kinase subfamily in multi-cellular organisms. *Oncogene* 20: 5562-5569.
- Wilson, F.H., et al. 2001. Human hypertension caused by mutations in WNK kinases. *Science* 293: 1107-1112.
- Xu, B.E., et al. 2002. Regulation of WNK1 by an autoinhibitory domain and autophosphorylation. *J. Biol. Chem.* 277: 48456-48462.
- Hollenberg, N.K. 2002. Human hypertension caused by mutations in WNK kinases. *Curr. Hypertens. Rep.* 4: 267.
- Nakamichi, N., et al. 2002. Compilation and characterization of a novel WNK family of protein kinases in *Arabidopsis thaliana* with reference to circadian rhythms. *Biosci. Biotechnol. Biochem.* 66: 2429-2436.
- Yang, C.L., et al. 2003. WNK kinases regulate thiazide-sensitive Na-Cl cotransport. *J. Clin. Invest.* 111: 1039-1045.
- Tobin, M.D., et al. 2005. Association of WNK1 gene polymorphisms and haplotypes with ambulatory blood pressure in the general population. *Circulation* 112: 3423-3429.

CHROMOSOMAL LOCATION

Genetic locus: WNK2 (human) mapping to 9q22.31.

SOURCE

WNK2 (46.21) is a mouse monoclonal antibody raised against recombinant WNK2 of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

WNK2 (46.21) is recommended for detection of WNK2 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

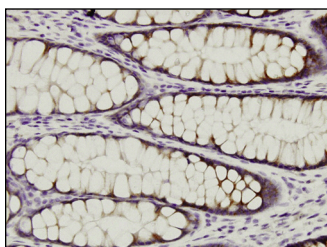
Suitable for use as control antibody for WNK2 siRNA (h): sc-61803, WNK2 shRNA Plasmid (h): sc-61803-SH and WNK2 shRNA (h) Lentiviral Particles: sc-61803-V.

Molecular Weight of WNK2: 243 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



WNK2 (46.21): sc-100452. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Niu, Y., et al. 2009. Identification of peptides applicable as vaccines for HLA-A26-positive cancer patients. *Cancer Sci.* 100: 2167-2174.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.