

# WNK3 (C-20): sc-20473

## BACKGROUND

The protein kinase superfamily contains over a thousand proteins in 57 sub-families that all share a catalytic core of 250-300 amino acids organized in 2 domains. WNK kinases (with no lysine (K)) 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  $\alpha$  and  $\beta$  phosphoryl groups. The catalytic domains of WNK2, WNK3 and WNK4 are 95% homologous to WNK1. Human WNK1 maps to chromosome 12p13 and encodes a 2,382 protein that is primarily expressed in heart, kidney, muscle and distal nephron. Human WNK3 maps to chromosome Xp11.22 and encodes a protein that is primarily expressed in brain. Human WNK4 maps to chromosome 17q21-q22 and 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

1. Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 7: 273-281.
2. 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.
3. Verissimo, F., et al. 2001. WNK kinases, a novel protein kinase subfamily in multi-cellular organisms. Oncogene 20: 5562-5569.
4. Wilson, F.H., et al. 2001. Human hypertension caused by mutations in WNK kinases. Science 293: 1107-1112.
5. Xu, B.E., et al. 2002. Regulation of WNK1 by an autoinhibitory domain and autophosphorylation. J. Biol. Chem. 277: 48456-48462.

## CHROMOSOMAL LOCATION

Genetic locus: WNK3 (human) mapping to Xp11.22.

## SOURCE

WNK3 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of WNK3 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20473 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

WNK3 (C-20) is recommended for detection of WNK3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

WNK3 (C-20) is also recommended for detection of WNK3 in additional species, including equine and porcine.

Suitable for use as control antibody for WNK3 siRNA (h): sc-39258, WNK3 shRNA Plasmid (h): sc-39258-SH and WNK3 shRNA (h) Lentiviral Particles: sc-39258-V.

Molecular Weight of WNK3: 192 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410 or H4 cell lysate: sc-2408.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **WNK3 (A-6): sc-515570** or **WNK3 (4H5): sc-517063**, our highly recommended monoclonal alternatives to WNK3 (C-20).