

Product Specification Sheet

With-No-Lysine Kinase-4 (WNK4) Antibodies

<input type="checkbox"/> Cat. # WNK41-S	Rabbit Anti-Human WNK4 antiserum	SIZE: 100 ul
<input type="checkbox"/> Cat. # WNK41-A	Rabbit Anti-Human WNK4 IgG (Aff pure)	SIZE: 100 ug
<input type="checkbox"/> Cat. # WNK41-P	Human WNK4 Control/blocking peptide	SIZE: 100 ug

Protein kinases represent a superfamily of over 400 members that share a catalytic domain of 250-300 amino acids. A conserved lysine, in subdomain II of the catalytic core of all 390 protein kinases, anchors α and β phosphoryl groups of ATP. The catalytic domain of **WNK** (With No K=Lysine) kinases contains all invariant residues, except for this **lysine** residue. There are 4 (identified) WNK genes (**WNK1**, **WNK2**, **WNK3** and **WNK4**) in human (h) and rat (r). The hWNK kinases exhibit ~30% seq identity and 50% seq homology to human **Mitogen Activated Protein kinases** (MAPK) **STK2**, **PAK2**, **MEKK3**, **PAK3** and **Raf-1**.

WNK4 (human 1243-aa, 17q21) is a Ser-Thr kinase in which the conserved catalytic lysine is replaced by a cysteine but another lysine residue in subdomain I confers the kinase activity. WNK4 is 76% identical to WNK1 in kinase domain. WNK4 is expressed predominantly in kidney, colon and skin. WNK4 localize to the distal convoluted tubule (DCT) and cortical collecting duct (CCD), that play a key role in salt, water, K⁺ and pH homeostasis. WNK4 is present exclusively in the intracellular tight junctions in DCT and in both cytoplasm and tight junctions in CCD. In DCT, salt reabsorption is mediated by the electroneutral Na-Cl cotransporter.

Source of Antigen and Antibodies

Antigen	13-aa peptide from human WNK-4 (protein accession # Q96J92 , refs 1); Designation (WNK41-P, control or blocking peptide) conjugated to KLH; epitope location ~ mapping at the middle (around ~650-aa) region
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (# WNK41-S) and IgG, purified over antigen-agarose (Cat # WNK41-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)

100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,

Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -200C and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). WNK4 is ~135/155 kDa in kidney.

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: not tested. We recommend the use of affinity pure antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Human WNK41-P antigenic peptide is conserved in monkey, gorilla (100%), camel, cat, horse (92%), bovine, goat (76%), and mouse/rat (53%) WNK4. No significant sequence homology of WNK41-P is seen with other WNK1-3 or proteins. Antibody reactivity in various species is not established. The WNK41-P Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity.

General References: Wilson. (2001) Science 293, 1107; Xu (2000) JBC. 275, 16795; Verissimo (2001) Oncogene 20, 5562; Ito et al. (2001) Cancer Res. 61, 2038.

(2) Citations of ADI's Antibodies (see web site for updated list)

yang C-L 2003, J. Clin. Invest., 111: 1039 - 1045 WB, IF IP

**This product is for In vitro research use only.*

Related materials available from ADI

Antibodies: WNK11-S (WNK1), WNK31-S (WNK3), WNK41-S (WNK4), ENACa11-S (ENAC-alpha); ENACb21-S (ENAC-beta) ENACg31-S (ENAC-gamma) and ENACd11-S (ENAC-delta).

WNK41-S-A-P 141211A