ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

With-No-Lysine Kinase-3 (WNK3) Antibodies

□ Cat. # WNK31-S	Rabbit Anti-Human WNK3 antiserum	**SIZE**: 100 ul
□ Cat. # WNK31-A	Rabbit Anti-Human WNK3 IgG (aff pure)	**SIZE**: 100 ug
□ Cat. # WNK31-P	Human WNK3 Control/blocking peptide	**SIZE**: 100 ug

The protein kinases represent a superfamily of over 400 members in 57 subfamilies that share a catalytic domain (12 subdomains) of 250-300 amino acids. Some of these residues are conserved and crucial for structure and function of the active site. A conserved lysine, in subdomain II of the catalytic core of all 390 protein kinases, anchors and orientates the 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. Being specific for multicellular organisms, the number of WNK genes an organism reflects the organism's complexity. There are 4 (identified) WNK genes (**WNK1**, **WNK2**, **WNK3** and **WNK4**) in human (h) and rat (r), one in *C. elegans* and *D. melanogaster* and no WNK-homologous gene in yeast or bacteria. The hWNK kinases exhibit ~30% sequence identity and 50% sequence homology to human Mitogen Activated Protein kinases (MAPK) **STK2**, **PAK2**, **MEKK3**, **PAK3** and **Raf-1**. The mutation in genes expressing WNK1 (chromosome 12p13.3) and WNK4 (chromosome 17q) causes Pseudohypoaldosteronism type II (PHAII), an autosomal disorder featuring hypertension, hyperkalemia (high serum K^+ level), normal/elevated aldosterone level, increased renal salt absorption, and impaired K^+ and H^+ excretion.

WNK3 (partial 1450-aa, chromosome Xp11.21-23) is a serine-threonine kinase with a catalytic domain which is ~93% homologous to that of hWNK1. The conserved catalytic lysine in subdomain II is replaced by a cysteine but another lysine residue in the glycine ribbon of the subdomain I confers the WNK3 kinase activity. Eleven out of 33 residues in the subdomains I and II of WNK3 are conserved in the 18 WNK-related kinases. The WNK3 gene is predominantly expressed in brain.

Protein name Serine/threonine-protein kinase WNK3
Synonyms EC 2.7.11.1
Protein kinase with no lysine 3
Protein kinase, lysine-deficient 3
Gene name Name: WNK3, Synonyms: KIAA1566, PRKWNK3
Similarity: Contains 1 protein kinase domain.

Source of Antigen and Antibodies

Antigen	16-aa peptide of Human WNK3; (protein accession #Q9BYP7, refs 1). (**designated WNK31-P or control peptide**)conjugated to KLH;Epitope location ~ C-terminus
Ab Host/type	Rabbit, polyclonal Aff pure IgG1 (**cat #NADC31-A**) purified over the antigen column
2-ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
-ve control	# 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 20°C and powder at 4°C or -20°C..
Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20°C or below.
Shipping: 4°C 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).

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 WNK31-P antigenic peptide sequences is conserved in other species WNK3: monkey and chimp (100%), pig, cat, cow (80%), chicken, rabbit, sheep (75%), rat (68%) and mouse (62%). No significant sequence homology of WNK31-P is seen with other WNK1-2, -4 or other proteins. Antibody reactivity in various species is not established. The WNK31-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: (1) Wilson et al. (2001) Science 293, 1107; Xu et al. (2000) J. Biol. Chem. 275, 16795; Verissimo and Jordan (2001) Oncogene 20, 5562; Ito et al. (2001) Cancer Res. 61, 2038; Moore et al. (2000) J. Biol. Chem. 275, 4311.

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

Related materials available from ADI

Antibodies: WNK1-4, EnaCs, AQPs,

WNK31-S-A-P 141211A

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