ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

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 $\alpha$ and $\beta$ 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

India Contact:
**Life Technologies (India) Pvt. Ltd.**
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com