ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Lipin-2 Antibodies

Cat. # LPN21-A	Rabbit Anti- Mouse Lipin-2 IgG (Aff pure)	**SIZE**: 100 ug
Cat. # LPN21-P	Mouse Lipin-2 Control/blocking peptide	**SIZE**: 100 ug

The actions of insulin culminate in changes in the phosphorylation state of a number of downstream targets including phosphatidylinositol 3-OH kinase (PI3-kinase). Activation of PI3-kinase is central to insulin-stimulated phosphorylation in fat cells. In adipocytes, PI3 is involved in activation of protein kinase B (PKB), glycogen synthase, transitional regulators, 4E-BP1, $p70^{s6k}$ and mTOR protein (mammalian target of rapamycin). The kinase activity of mTOR functions in nutrient sensing pathway that maintains a proper balance of aa availability, protein synthesis and cell growth. Most importantly, mTOR controls the phosphorylation of a newly discovered protein **Lipin-1**, required for normal adipose tissue development and metabolism. The mutation in *Lpin-1* gene results in immature adipocytes and thus in fatty liver dystrophy (fld) phenotype in mice and in lipodystrophy, a group of rare human diseases. These phenotypes are characterized by a triglyceride-filled fatty liver, loss of body fat, hypertrigyceridemia, insulin resistance, increased susceptibility to atherosclerosis, reduced fertility, reduced plasma **Leptin** and a progressive neuropathy affecting peripheral nerves in adulthood. Lipin defines a family of nuclear proteins containing at least three members in human and mouse: **Lipin-1**; **Lipin-2** and **Lipin-3**. All Lipin members contain a nuclear signal seq, a highly conserved amino- (NLIP) and a carboxy-terminal (CLIP) domains.

Lipin-2: The human and mouse *LPIN-2* genes have been mapped at chromosomes 18p and 17, respectively. The Lipin-2 seqs from mouse and human are ~90% identical. The overall aa seq of mouse Lipin-2 (891aa) is ~48% identical to mouse Lipin-1(891aa) and Lipin-3 (848aa).

Source of Antigen and Antibodies

Antigen	14aa peptide of **Mouse Lipin-2** (1); **Designated (LPN21-P or control peptide) conjugated to KLH; epitope location ~ N-terminus**
Ab Host/type	Rabbit, polyclonal Aff pure IgG1 (**cat # LPN21-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (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

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 -20OC 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 (1-10 ug/ml for affinity pure antibody using ECL technique). The antibody (**cat # LPN21-A**) will recognize mouse Lipin-2 under non-reducing conditions.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested.

Specificity & Cross-reactivity

The LPN21-P peptide is conserved in mouse (100%) and human (69%) Lipin-2. No significant sequence homology of LPN21-P is seen with Lipin-1, Lipin-3 or other proteins. Antibody reactivity in various species is not known. The LPN21-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 (see detailed protocol at the web site).

General References

(1) Huffman et al. (2002) PNAS **99**, 1047-1052; Peterfy et al. (2001) Nature *Genet*. **27**, 121-124; Hager et al. (1998) Nature *Genet*. **20**, 304-308; Reue et al. (2000) J. Lipid Res. **41**, 1067-1076.

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

Related materials available from ADI

Antibodies: Lipin-1 (LPN11-S); Lipin-3 (LPN31-S).

LPN21-S-A-P 71214A

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