

# LACTB (O-21): sc-133721

## BACKGROUND

Penicillin refers to any member of  $\beta$ -lactam antibiotics group. These agents are identified by a  $\beta$ -lactam ring within their molecular structure. As the most widely used group of antibiotics available,  $\beta$ -lactam are used for the treatment of bacterial infections usually caused by gram-positive organisms.  $\beta$ -lactam antibiotics are bactericidal, functioning to inhibit the synthesis of the peptidoglycan layer of bacterial cell walls. Bacterial penicillin-binding proteins and  $\beta$ -lactamases constitute a large family of serine proteases that perform essential functions in the synthesis and maintenance of peptidoglycan cell wall. Notably,  $\beta$ -lactamases cleave  $\beta$ -lactam, therefore providing the bacteria with resistance to the antibiotic. Homologues of  $\beta$ -lactamases occur in many species, including human, rat, bovine, rabbit, porcine, *Xenopus*, zebrafish and *C. elegans*. The human homologues, LACTB and LACTB2, are active-site-serine enzymes thought to be involved in metabolism.

## REFERENCES

1. Smith, T.S., et al. 2001. Identification, genomic organization, and mRNA expression of LACTB, encoding a serine  $\beta$ -lactamase-like protein with an amino-terminal transmembrane domain. *Genomics* 78: 12-14.
2. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608440. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Liobikas, J., et al. 2006. Expression and purification of the mitochondrial serine protease LACTB as an N-terminal GST fusion protein in *Escherichia coli*. *Protein Expr. Purif.* 45: 335-342.
4. Romano, A., et al. 2006. A comparison of the performance of two penicillin reagent kits in the diagnosis of  $\beta$ -lactam hypersensitivity. *Allergy* 62: 53-58.
5. Ruddle, C.C. and Smyth, T.P. 2006. Exploring the chemistry of penicillin as a  $\beta$ -lactamase-dependent prodrug. *Org. Biomol. Chem.* 5: 160-168.

## CHROMOSOMAL LOCATION

Genetic locus: LACTB (human) mapping to 15q22.2; *Lactb* (mouse) mapping to 9 C.

## SOURCE

LACTB (O-21) is an affinity purified rabbit polyclonal antibody raised against synthetic LACTB peptide of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG in 500  $\mu$ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## 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.

## APPLICATIONS

LACTB (O-21) is recommended for detection of LACTB of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LACTB siRNA (h): sc-89970, LACTB siRNA (m): sc-146632, LACTB shRNA Plasmid (h): sc-89970-SH, LACTB shRNA Plasmid (m): sc-146632-SH, LACTB shRNA (h) Lentiviral Particles: sc-89970-V and LACTB shRNA (m) Lentiviral Particles: sc-146632-V.

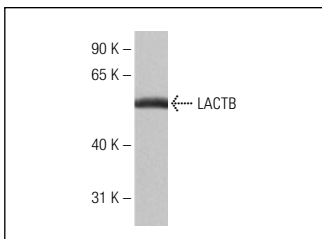
Molecular Weight of LACTB: 61/41 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or THP-1 cell lysate: sc-2238.

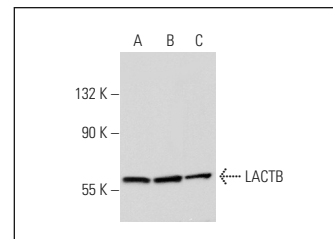
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



LACTB (O-21): sc-133721. Western blot analysis of LACTB expression in human fetal liver tissue extract.



LACTB (O-21): sc-133721. Western blot analysis of LACTB expression in HeLa (A), K-562 (B) and THP-1 (C) whole cell lysates.

## RESEARCH USE

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