SANTA CRUZ BIOTECHNOLOGY, INC.

LAP3 (D-3): sc-376270

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

LAP3 (leucine aminopeptidase 3), also known as LAPEP or PEPS, is a 519 amino acid protein that localizes to the cytoplasm and belongs to the peptidase M17 family. Existing as a homohexamer, LAP3 uses zinc as a cofactor to catalyze the release of an N-terminal proline from a target peptide and is, therefore, involved in the processing and turnover of intracellular proteins. Multiple isoforms of LAP3 exist due to alternative splicing events. The gene encoding LAP3 maps to human chromosome 4, which houses nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Lewis, W.H., et al. 1967. Human red cell peptidases. Nature 215: 351-355.
2. Shows, T.B., et al. 1978. Assignment of peptidase S (PEPS) to chromosome 4 in man using somatic cell hybrids. Hum. Genet. 43: 119-125.
3. Schmutz, S.M. and Simpson, N.E. 1983. Suggested assignment of peptidase S (PEPS) to 4p11-4q12 by exclusion using gene dosage, accounting for variability in fibroblasts. Hum. Genet. 64: 134-138.

CHROMOSOMAL LOCATION

Genetic locus: LAP3 (human) mapping to 4p15.32; Lap3 (mouse) mapping to 5 B3.

SOURCE

LAP3 (D-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 67-105 within an internal region of LAP3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LAP3 (D-3) is available conjugated to agarose (sc-376270 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376270 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376270 PE), fluorescein (sc-376270 FITC), Alexa Fluor® 488 (sc-376270 AF488), Alexa Fluor® 546 (sc-376270 AF546), Alexa Fluor® 594 (sc-376270 AF594) or Alexa Fluor® 647 (sc-376270 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376270 AF680) or Alexa Fluor® 790 (sc-376270 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376270 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

LAP3 (D-3) is recommended for detection of LAP3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (start-ing dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

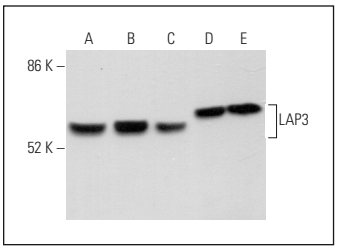
Suitable for use as control antibody for LAP3 siRNA (h): sc-75411, LAP3 siRNA (m): sc-75412, LAP3 shRNA Plasmid (h): sc-75411-SH, LAP3 shRNA Plasmid (m): sc-75412-SH, LAP3 shRNA (h) Lentiviral Particles: sc-75411-V and LAP3 shRNA (m) Lentiviral Particles: sc-75412-V.

Molecular Weight of LAP3 monomer: 55 kDa.

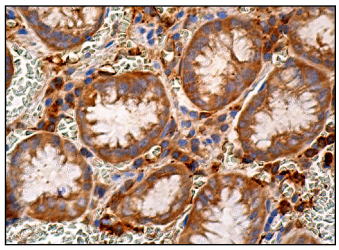
Molecular Weight of LAP3 homohexamer: 300 kDa.

Positive Controls: mouse liver extract: sc-2256, Hep G2 cell lysate: sc-2227 or rat liver extract: sc-2395.

DATA



LAP3 (D-3): sc-376270. Western blot analysis of LAP3 expression in Hep G2 (**A**), U266 (**B**) and Daudi (**C**) whole cell lysates and mouse liver (**D**) and rat liver (**E**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



LAP3 (D-3): sc-376270. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Wang, X., et al. 2015. Inhibition of leucine aminopeptidase 3 suppresses invasion of ovarian cancer cells through down-regulation of fascin and MMP-2/9. Eur. J. Pharmacol. 768: 116-122.
2. Fang, C., et al. 2018. Leucine aminopeptidase 3 promotes migration and invasion of breast cancer cells through upregulation of fascin and matrix metalloproteinases-2/9 expression. J. Cell. Biochem. 120: 3611-3620.
3. Wu, H., et al. 2019. A new method to evaluate the enzyme-suppressing activity of a leucine aminopeptidase 3 inhibitor. Drug Discov. Ther. 13: 17-21.
4. Yang, H., et al. 2020. Inhibition of the proliferation, migration, and invasion of human breast cancer cells by leucine aminopeptidase 3 inhibitors derived from natural marine products. Anticancer Drugs 31: 60-66.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.