SANTA CRUZ BIOTECHNOLOGY, INC.

ITPase (P-18): sc-87781

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The Power to Question

BACKGROUND

ITPase (inosine triphosphate pyrophosphatase) is also known as putative oncogene protein hlc14-06-p or ITPA (inosine triphosphatase (nucleoside triphosphate pyrophosphatase)) and is a 194 amino acid protein. ITPase is abundantly expressed in heart, liver, sex glands, thyroid and adrenal gland, and is localized to the cytoplasm in the cell. ITPase catalyzes the pyrophosphohydrolysis of both ITP (inosine triphosphate) and dITP (deoxyinosine triphosphate) to IMP (inosine monophosphate) and diphosphate. IMP can be used as a substrate for purine nucleotide pathways. IMP can be phosphorylated to ITP, and ITPase can regulate the concentration of ITP in the cell by converting ITP back to IMP. Defects in ITPase result in ITPase deficiency which is thought to be inherited and is characterized by an over-accumulation of ITP in erythocytes, leukocytes and fibroblasts.

REFERENCES

1. Verhoef, V.L., et al. 1980. Individual variation of nucleoside triphosphate pyrophosphohydrolase activity in human erythrocytes, granulocytes, lymphocytes, and platelets. Biochem. Genet. 18: 235-245.
2. online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 147520. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Breen, D.P., et al. 2005. Pharmacogenetic association with adverse drug reactions to azathioprine immunosuppressive therapy following liver transplantation. Liver Transpl. 11: 826-833.
4. Savchenko, A., et al. 2007. Molecular basis of the antimutagenic activity of the house-cleaning inosine triphosphate pyrophosphatase RdgB from *Escherichia coli*. J. Mol. Biol. 374: 1091-1103.
5. Bierau, J., et al. 2007. Pharmacogenetic significance of inosine triphosphatase. Pharmacogenomics 8: 1221-1228.
6. Tomkova, J., et al. 2008. ITPase activity in dry blood spots is comparable with that in fresh erythrocytes. Nucleosides Nucleotides Nucleic Acids 27: 656-660.
7. von Ahsen, N., et al. 2008. Characterization of the inosine triphosphatase (ITPA) gene: haplotype structure, haplotype-phenotype correlation and promoter function. Ther. Drug Monit. 30: 16-22.

CHROMOSOMAL LOCATION

Genetic locus: ITPA (human) mapping to 20p13; Itpa (mouse) mapping to 2 F1.

SOURCE

ITPase (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of ITPase of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-87781 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ITPase (P-18) is recommended for detection of ITPase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ITPase (P-18) is also recommended for detection of ITPase in additional species, including equine, canine and bovine.

Suitable for use as control antibody for ITPase siRNA (h): sc-75348, ITPase siRNA (m): sc-146312, ITPase shRNA Plasmid (h): sc-75348-SH, ITPase shRNA Plasmid (m): sc-146312-SH, ITPase shRNA (h) Lentiviral Particles: sc-75348-V and ITPase shRNA (m) Lentiviral Particles: sc-146312-V.

Molecular Weight (predicted) of ITPase: 21 kDa.

Molecular Weight (observed) of ITPase: 29 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.