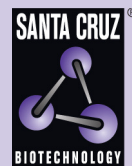


TNAP (N-18): sc-23430



The Power to Question

BACKGROUND

Alkaline phosphatases (AP) are glycosyl-phosphatidylinositol (GPI)-anchored, dimeric, Zn²⁺ metallated glycoproteins that catalyze the hydrolysis of phospho-monoesters into an inorganic phosphate and an alcohol. There are at least four distinct but related alkaline phosphatases: intestinal (IAP), placental (PLAP), placental-like (ALP-1 or GCAP) and tissue non-specific (TNAP). The first three are located together on chromosome 2 while the tissue non-specific form is located on chromosome 1. TNAP is widely expressed in liver, kidney, bone, stomach and colon, and is therefore referred to as the tissue non-specific form of AP. TNAP, in conjunction with plasma cell membrane glycoprotein-1, functions in bone mineralization; however, mice that lack a functional form of TNAP show normal skeletal development. This enzyme has been linked directly to a disorder known as hypophosphatasia, a rare inborn disorder that is characterized by defective bone mineralization and includes skeletal defects. The gene encoding human TNAP maps to chromosome 1p36.12.

REFERENCES

- Shao, J.S., et al. 2000. Effect of tissue non-specific alkaline phosphatase in maintenance of structure of murine colon and stomach. *Microsc. Res. Tech.* 51: 121-128.
- Johnson, K.A., et al. 2000. Osteoblast tissue-nonspecific alkaline phosphatase antagonizes and regulates PC-1. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 279: 1365-1377.
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CHROMOSOMAL LOCATION

Genetic locus: ALPL (human) mapping to 1p36.12; Alp2 (mouse) mapping to 4 D3.

SOURCE

TNAP (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TNAP 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.

TNAP (N-18) is available conjugated to agarose (sc-23430 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-23430 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

TNAP (N-18) is recommended for detection of TNAP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Suitable for use as control antibody for TNAP siRNA (h): sc-38921, TNAP siRNA (m): sc-38922, TNAP shRNA Plasmid (h): sc-38921-SH, TNAP shRNA Plasmid (m): sc-38922-SH, TNAP shRNA (h) Lentiviral Particles: sc-38921-V and TNAP shRNA (m) Lentiviral Particles: sc-38922-V.

Molecular Weight of TNAP: 80 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181.

SELECT PRODUCT CITATIONS

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- Mota, A., et al. 2008. Characterization of rat heart alkaline phosphatase isoenzymes and modulation of activity. *Braz. J. Med. Biol. Res.* 41: 600-609.
- Pedrosa, W.F., et al. 2009. Immunohistochemical, tomographic and histological study on onlay bone graft remodeling. Part II: calvarial bone. *Clin. Oral Implants Res.* 20: 1254-1264.
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- Guo, D., et al. 2010. Identification of osteocyte-selective proteins. *Proteomics* 10: 3688-3698.

RESEARCH USE

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



Try **TNAP (TRA-2-39): sc-21708** or **TNAP (TRA-2-54): sc-21707**, our highly recommended monoclonal alternatives to TNAP (N-18).