

TNAP (TRA-2-54): sc-21707

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, function 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. Human gene encoding TNAP maps to chromosome 1p36.12.

CHROMOSOMAL LOCATION

Genetic locus: ALPL (human) mapping to 1p36.12.

SOURCE

TNAP (TRA-2-54) is a mouse monoclonal antibody raised against 2102Ep human embryonal carcinoma cells, recognizes liver/bone/kidney isozyme of alkaline phosphatase.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TNAP (TRA-2-54) is recommended for detection of TNAP of 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)] and flow cytometry (1 µg per 1 x 10⁶ cells).

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

Molecular Weight of TNAP: 80 kDa.

Positive Controls: TNAP (h): 293T Lysate: sc-112384 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

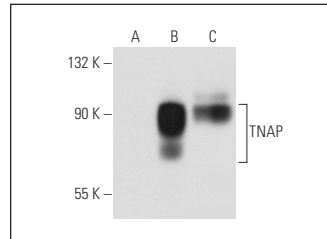
RESEARCH USE

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

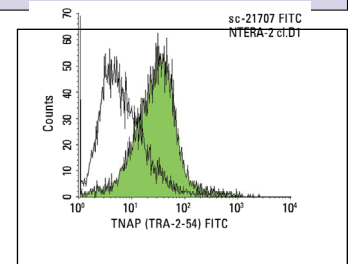
STORAGE

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

DATA



TNAP (TRA-2-54): sc-21707. Western blot analysis of TNAP expression in non-transfected 293T: sc-117752 (A), human TNAP transfected 293T: sc-112384 (B) and NTERA-2 cl.D1 (C) whole cell lysates.



TNAP (TRA-2-54): sc-21707. Indirect FCM analysis of live NTERA-2 cl.D1 cells stained with TNAP (TRA-2-54), followed by FITC-conjugated goat anti-mouse IgG₁-FITC: sc-2078.

SELECT PRODUCT CITATIONS

- Li, S.S., et al. 2006. Characterization and gene expression profiling of five new human embryonic stem cell lines derived in Taiwan. *Stem Cells Dev.* 15: 532-555.
- Li, S.S. 2012. Characterization and gene expression profiling of five human embryonic stem cell lines derived in Taiwan. *Methods Mol. Biol.* 873: 127-149.
- Shimozawa, N., et al. 2013. Cynomolgus monkey induced pluripotent stem cells established by using exogenous genes derived from the same monkey species. *Differentiation* 85: 131-139.
- Erndt-Marino, J.D., et al. 2015. Evaluation of the osteoinductive capacity of polydopamine-coated poly(ε-caprolactone) diacrylate shape memory foams. *ACS Biomater. Sci. Eng.* 1: 1220-1230.
- Kamaldinov, T., et al. 2018. Tuning forkhead box D3 overexpression to promote specific osteogenic differentiation of human embryonic stem cells while reducing pluripotency in a three-dimensional culture system. *J. Tissue Eng. Regen. Med.* 12: 2256-2265.

PROTOCOLS

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



See **Alkaline Phosphatase (F-4): sc-166261** for Alkaline Phosphatase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.