

Alkaline Phosphatase (A-10): sc-271431

BACKGROUND

Alkaline Phosphatases (AP) are glycosyl-phosphatidylinositol (GPI)-anchored, dimeric, Zn²⁺-metallated glycoproteins that catalyze the hydrolysis of phosphomonoesters into an inorganic phosphate and an alcohol. Placental Alkaline Phosphatase (also known as PLAP, ALPP, PALP, placental ALP-1 or regan iso-zyne) is a 530 amino acid, tissue-specific AP that is expressed in the placenta, the serum of pregnant women and ectopically expressed in various cancers, including those of the ovary and testis. PLAP may assist in guiding migratory cells and transporting specific molecules, such as fatty acids and immunoglobulins, across the plasma membrane. The three tissue-specific APs identified in human, PLAP, germ cell AP (GCAP) and intestinal AP, are 90-98% homologous and their genes are clustered on chromosome 2q.

CHROMOSOMAL LOCATION

Genetic locus: ALPP/ALPPL2/ALPI (human) mapping to 2q37.1; Akp3 (mouse) mapping to 1 D.

SOURCE

Alkaline Phosphatase (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 66-111 within an internal region of PLAP of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Alkaline Phosphatase (A-10) is available conjugated to agarose (sc-271431 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271431 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271431 PE), fluorescein (sc-271431 FITC), Alexa Fluor® 488 (sc-271431 AF488), Alexa Fluor® 546 (sc-271431 AF546), Alexa Fluor® 594 (sc-271431 AF594) or Alexa Fluor® 647 (sc-271431 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271431 AF680) or Alexa Fluor® 790 (sc-271431 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271431 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

Alkaline Phosphatase (A-10) is recommended for detection of PLAP, ALPPL2 and IAP of human origin, and Akp-3 of mouse and rat 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) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

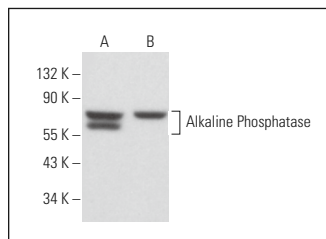
Molecular Weight of Alkaline Phosphatase: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or JAR cell lysate: sc-2276.

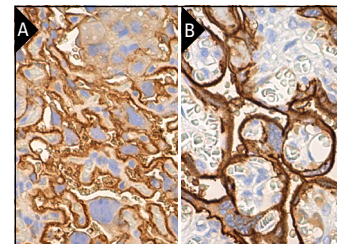
STORAGE

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

DATA



Alkaline Phosphatase (A-10): sc-271431. Western blot analysis of Alkaline Phosphatase expression in HeLa (A) and MCF7 (B) whole cell lysates.



Alkaline Phosphatase (A-10): sc-271431. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse placenta (A) and human placenta (B) tissue showing membrane and cytoplasmic staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

- Ozeki, N., et al. 2015. Polyphosphate induces matrix metalloproteinase-3-mediated proliferation of odontoblast-like cells derived from induced pluripotent stem cells. *Exp. Cell Res.* 333: 303-315.
- Zhu, Y.L., et al. 2017. MiR-217 inhibits osteogenic differentiation of rat bone marrow-derived mesenchymal stem cells by binding to Runx2. *Mol. Med. Rep.* 15: 3271-3277.
- Liang, J., et al. 2018. Gossypol promotes bone formation in ovariectomy-induced osteoporosis through regulating cell apoptosis. *Biomed Res. Int.* 2018: 3635485.
- Wang, L., et al. 2019. α -melanocyte stimulating hormone (α -MSH) promotes osteoblast differentiation of MC3T3-E1 cells. *Eur. J. Pharmacol.* 844: 1-8.
- Silva, L.A.B.D., et al. 2019. Comparison of apical periodontitis repair in endodontic treatment with calcium hydroxide-dressing and aPDT. *Braz. Oral Res.* 33: e092.
- Silva, R.A.B., et al. 2019. Histopathological, histoenzymological, immunohistochemical and immunofluorescence analysis of tissue response to sealing materials after furcation perforation. *Int. Endod. J.* 52: 1489-1500.
- Chen, S., et al. 2020. *In vitro* evaluation of a novel osteo-inductive scaffold for osteogenic differentiation of bone-marrow mesenchymal stem cells. *J. Craniofac. Surg.* 31: 577-582.
- Seo, M.H., et al. 2020. Effects of pentoxifylline and tocopherol on an osteoradionecrosis animal model. *J. Craniofac. Surg.* 48: 621-631.
- Liu, Z.Z., et al. 2020. Autophagy receptor OPTN (optineurin) regulates mesenchymal stem cell fate and bone-fat balance during aging by clearing FABP3. *Autophagy* 17: 2766-2782.

RESEARCH USE

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