

# Alkaline Phosphatase (G-9): sc-398461

## BACKGROUND

Alkaline phosphatases (AP) are glycosyl-phosphatidylinositol (GPI)-anchored, dimeric, Zn<sup>2+</sup>-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 isozyme) 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.

## REFERENCES

1. Travers, P. and Bodmer, W. 1984. Preparation and characterization of monoclonal antibodies against placental Alkaline Phosphatase and other human trophoblast-associated determinants. *Int. J. Cancer* 33: 633-641.
2. Epenetos, A.A., et al. 1984. An immunohistological study of testicular germ cell tumours using two different monoclonal antibodies against placental Alkaline Phosphatase. *Br. J. Cancer* 49: 11-15.
3. Tucker, D.F., et al. 1985. Serum marker potential of placental Alkaline Phosphatase-like activity in testicular germ cell tumours evaluated by H17E2 monoclonal antibody assay. *Br. J. Cancer* 51: 631-639.
4. Epenetos, A.A., et al. 1985. Monoclonal antibody assay of serum placental Alkaline Phosphatase in the monitoring of testicular tumours. *Br. J. Cancer* 51: 641-644.

## CHROMOSOMAL LOCATION

Genetic locus: ALPP/ALPPL2/ALP1 (human) mapping to 2q37.1; Alpl (mouse) mapping to 4 D3, Alpl2/Alpl (mouse) mapping to 1 D.

## SOURCE

Alkaline Phosphatase (G-9) is a mouse monoclonal antibody raised against amino acids 31-330 mapping near the N-terminus of PLAP of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Alkaline Phosphatase (G-9) is recommended for detection of PLAP, ALPPL2 and IAP 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

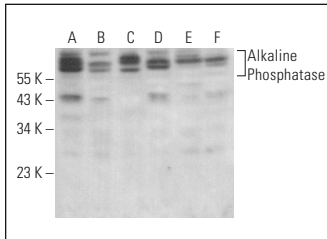
Molecular Weight of Alkaline Phosphatase: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, PLAP (h): 293T Lysate: sc-113546 or human placenta extract: sc-363772.

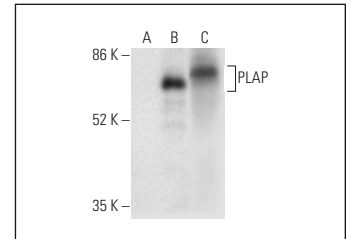
## STORAGE

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

## DATA



Alkaline Phosphatase (G-9): sc-398461. Western blot analysis of Alkaline Phosphatase expression in HeLa (A), TK-1 (B), C2C12 (C), JAR (D), SUP-T1 (E) and MIA PaCa-2 (F) whole cell lysates.



Alkaline Phosphatase (G-9): sc-398461. Western blot analysis of PLAP expression in non-transfected: sc-117752 (A) and human PLAP transfected: sc-113546 (B) 293T whole cell lysates and human placenta tissue extract (C).

## SELECT PRODUCT CITATIONS

1. Nakayama, H., et al. 2018. Cullin 3 regulates ADAMs-mediated ectodomain shedding of amphiregulin. *Biochem. Biophys. Res. Commun.* 499: 17-23.
2. Heo, S.K., et al. 2021. LIGHT (TNFSF14) enhances osteogenesis of human bone marrow-derived mesenchymal stem cells. *PLoS ONE* 16: e0247368.
3. Molagoda, I.M.N., et al. 2021. Fisetin promotes osteoblast differentiation and osteogenesis through GSK-3β phosphorylation at Ser9 and consequent β-catenin activation, inhibiting osteoporosis. *Biochem. Pharmacol.* 192: 114676.
4. Karunarathne, W.A.H.M., et al. 2021. Anthocyanin-enriched polyphenols from *Hibiscus syriacus L. (Malvaceae)* exert anti-osteoporosis effects by inhibiting GSK-3β and subsequently activating β-catenin. *Phytomedicine* 91: 153721.
5. Molagoda, I.M.N., et al. 2022. Fermented oyster (*Crassostrea gigas*) extract cures and prevents prednisolone-induced bone resorption by activating osteoblast differentiation. *Foods* 11: 678.
6. Maduranga Karunarathne, W.A.H., et al. 2022. Bisphenol A inhibits osteogenic activity and causes bone resorption via the activation of retinoic acid-related orphan receptor α. *J. Hazard. Mater.* 438: 129458.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **PLAP (8B6): sc-47691** for PLAP antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.