

IAP (AAP.1): sc-56917

BACKGROUND

The intestinal alkaline phosphatase gene (ALPI) encodes a digestive brush-border enzyme, IAP (also designated ALP), which is highly upregulated during small intestinal epithelial cell differentiation. IAP, an enterocyte differentiation marker that functions to limit fat absorption, has been implicated in trans-cellular transport of chylomicrons and in chylomicron formation. At high pH, IAP removes phosphate groups from proteins and from the 5' end of DNA and RNA. Most mammals have four different IAP isozymes: placental, placental-like, intestinal and non tissue-specific. Non tissue-specific isozymes are found in liver, kidney and bone. Tissues with particularly high concentrations of IAP include the liver, bile ducts, placenta and bone. Damaged or diseased tissue releases enzymes into the blood, so serum IAP measurements can be abnormal in many conditions, including bone disease and liver disease. Serum IAP levels vary among ABO blood groups, and fatty acid metabolism may change among ABO blood types. Intestinal alkaline phosphatase is more prevalent in humans of blood group O or B.

REFERENCES

1. Cordell, J.L., Falini, B., Erber, W., Ghosh, A., Abdulaziz, Z., MacDonald, S., Pulford, K.A., Stein, H. and Mason, D.Y. 1984. Immunoenzymatic labeling of monoclonal antibodies using immune complexes of alkaline phosphatase and monoclonal anti-alkaline phosphatase. *J. Histochem. Cytochem.* 32: 219-229.
2. Lai, A.P., Moss, F.M., Armitage, R.J. and Cawley, J.C. 1985. Bone marrow macrophages and megakaryocytes express common acute lymphoblastic leukaemia antigen. *Leuk. Res.* 9: 1155-1159.
3. Moss, F.M., Bobrow, L.G., Beverley, P.C.L. and Souhami, R.L. 1988. Detection of small cell carcinoma in bone marrow aspirates using monoclonal antibodies and mixtures of monoclonal antibodies. *Lung Cancer* 4: 76-78.
4. Cho, S.R., Lim, Y.A. and Lee, W.G. 2005. Unusually high alkaline phosphatase due to intestinal isoenzyme in a healthy adult. *Clin. Chem. Lab. Med.* 43: 1274-1275.
5. Olsen, L., Bressendorff, S., Troelsen, J.T. and Olsen, J. 2005. Differentiation-dependent activation of the human intestinal alkaline phosphatase promoter by HNF-4 in intestinal cells. *Am. J. Physiol. Gastrointest. Liver Physiol.* 289: G220- G226.
6. Luong, K.V. and Nguyen, L.T. 2005. Adult hypophosphatasia and a low level of red blood cell thiamine pyrophosphate. *Ann. Nutr. Metab.* 49: 107-109.
7. Nakano, T., Shimanuki, T., Matsushita, M., Koyama, I., Inoue, I., Katayama, S., Alpers, D.H. and Komoda, T. 2006. Involvement of intestinal alkaline phosphatase in serum apolipoprotein B-48 level and its association with ABO and secretor blood group types. *Biochem. Biophys. Res. Commun.* 341: 33-38.
8. Malo, M.S., Mozumder, M., Zhang, X.B., Biswas, S., Chen, A., Bai, L.C., Merchant, J.L. and Hodin, R.A. 2006. Intestinal alkaline phosphatase gene expression is activated by ZBP-89. *Am. J. Physiol. Gastrointest. Liver Physiol.* 290: G737-G746.

CHROMOSOMAL LOCATION

Genetic locus: ALPI (human) mapping to 2q37.1.

SOURCE

IAP (AAP.1) is a mouse monoclonal antibody raised against D98/AH-2 (HeLa) cells 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.

APPLICATIONS

IAP (AAP.1) is recommended for detection of IAP of human origin by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IAP siRNA (h): sc-72032, IAP shRNA Plasmid (h): sc-72032-SH and IAP shRNA (h) Lentiviral Particles: sc-72032-V.

Molecular Weight of IAP: 67 kDa.

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 for detailed protocols and support products.