PRODUCT INFORMATION

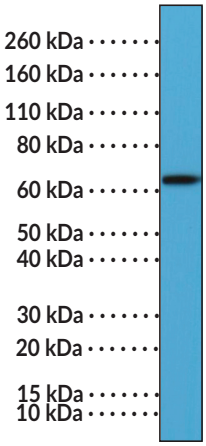
PLAP (N-Term) Rabbit Monoclonal Antibody (Clone RM317)

Item No. 32259

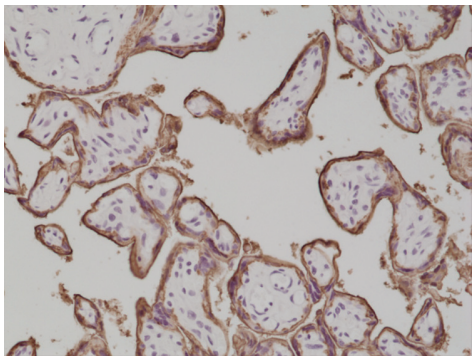
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Immunogen:	Peptide from the N-terminal region of human PLAP
Cross Reactivity:	(+) PLAP
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM317
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:500-1:1,000 for IHC and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of A431 cell lysates using PLAP (N-Term) Rabbit Monoclonal Antibody (Clone RM317) at a dilution of 1:2,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human placenta tissue using PLAP (N-Term) Rabbit Monoclonal Antibody (Clone RM317) at a 1:1,000 dilution.

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Description

Placental alkaline phosphatase (PLAP) is the placenta-specific isoenzyme of AP encoded by the *ALPP* gene in humans.[1,2] It exists as a homodimer where each monomer is composed of an N-terminal α-helix and a crown domain that stabilize PLAP homodimers, a Zn^{2+}- and Mg^{2+}-containing active site with a catalytic serine residue, and a non-catalytic metal-binding site occupied by Ca^{2+}.[3,4] PLAP is predominately expressed by syncytiotrophoblasts in the placenta and is tethered to the plasma membrane by a glycosylphosphatidylinositol (GPI) anchor.[3,4] It is also present at low levels in the cervix, ovaries, and type I pneumocytes, as well as in the serum.[1,3] Increased PLAP activity has been found in tumor tissue and cerebrospinal fluid (CSF) isolated from patients with intracranial germ cell tumors.[5] Cayman's PLAP (N-Term) Rabbit Monoclonal Antibody (Clone RM317) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Zaher, D.M., El-Gamal, M.I., Omar, H.A., *et al*. Recent advances with alkaline phosphatase isoenzymes and their inhibitors. *Arch. Pharm. (Weinheim)* **353(5)**, e2000011 (2020).
2. Wennberg, C., Kozlenkov, A., Di Mauro, S., *et al*. Structure, genomic DNA typing, and kinetic characterization of the D allozyme of placental alkaline phosphatase (PLAP/ALPP). *Hum. Mutat*. **19(3)**, 258-267 (2002).
3. Millán, J.L. Alkaline phosphatases : Structure, substrate specificity and functional relatedness to other members of a large superfamily of enzymes. *Purinergic Signal*. **2(2)**, 335-341 (2006).
4. Le Du, M.H., Stigbrand, T., Taussig, M.J., *et al*. Crystal structure of alkaline phosphatase from human placenta at 1.8 Å resolution. Implication for a substrate specificity. *J. Biol. Chem*. **276(12)**, 9158-9165 (2001).
5. Aihara, Y., Watanabe, S., Amano, K., *et al*. Placental alkaline phosphatase levels in cerebrospinal fluid can have a decisive role in the differential diagnosis of intracranial germ cell tumors. *J. Neurosurg*. **131(3)**, 687-694 (2018).

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