Technical Data Sheet

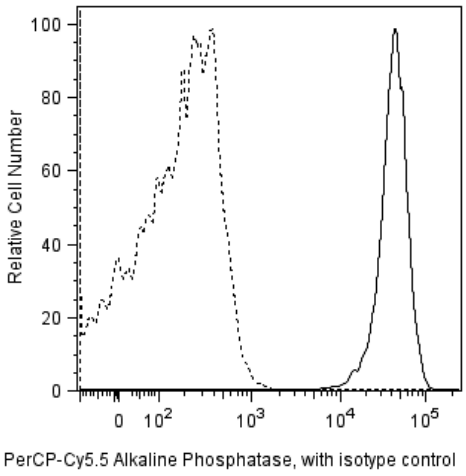
PerCP-Cy™5.5 Mouse Anti-Human Alkaline Phosphatase

Product Information

Material Number:	**561508**
Alternate Name:	Bone/Kidney/Liver Alkaline Phosphatase, TNAP, TNSALP, AP-TNAP, ALPL
Entrez Gene ID:	249
Size:	100 tests
Vol. per Test:	5 µl
Clone:	B4-78
Immunogen:	Human Bone Alkaline Phosphatase
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Tested: Human Lack of Reactivity Confirmed in Development: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The B4-78 monoclonal antibody reacts with the tissue-nonspecific isozyme of alkaline phosphatase. Alkaline phosphatases are membrane-bound glycoproteins. Four isozymes of alkaline phosphatase exist in humans: placental, placental-like, intestinal, and liver/bone/kidney. Liver/bone/kidney alkaline phosphatase is also known as tissue-nonspecific alkaline phosphatase (TNAP). Human embryonic stem cells and embryonic carcinoma cells express high levels of tissue-nonspecific alkaline phosphatase that decrease upon differentiation. Genetic and biochemical studies suggest that TNAP plays a role in skeletal mineralization.



Flow cytometric analysis of Alkaline Phosphatase expression on human embryonic stem (ES) cells. *H9 human ES cells (WiCell, Madison, WI) passage 33 grown in mTESR™1 media (StemCell Technologies) on BD Matrigel™ hESC-qualified Matrix (Cat. No. 354277) were harvested and stained with PerCP-Cy™5.5 Mouse anti-Human Alkaline Phosphatase antibody (solid line) or a PerCP-Cy™5.5 mouse IgG1, κ isotype control (Clone MOPC-21, Cat. No.550795, dashed line). Flow cytometry was performed on a BD™ LSR II flow cytometry system.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with PerCP-Cy5.5 under optimum conditions, and unconjugated antibody and free PerCP-Cy5.5 were removed. Storage of PerCP-Cy5.5 conjugates in unoptimized diluent is not recommended and may result in loss of signal intensity.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
354277	BD Matrigel™ hESC-qualified Matrix, 5 ml vial	NA	(none)
550795	PerCP-Cy™5.5 Mouse IgG1 κ Isotype Control	0.1 mg	MOPC-21
554656	Stain Buffer (FBS)	500 ml	(none)

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Product Notices

1. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. PerCP-Cy5.5–labelled antibodies can be used with FITC- and R-PE–labelled reagents in single-laser flow cytometers with no significant spectral overlap of PerCP-Cy5.5, FITC, and R-PE fluorescence.
4. PerCP-Cy5.5 is optimized for use with a single argon ion laser emitting 488-nm light. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using dual-laser cytometers, which may directly excite both PerCP and Cy5.5™. We recommend the use of cross-beam compensation during data acquisition or software compensation during data analysis.
5. This product is subject to proprietary rights of Amersham Biosciences Corp. and Carnegie Mellon University and made and sold under license from Amersham Biosciences Corp. This product is licensed for sale only for research. It is not licensed for any other use. If you require a commercial license to use this product and do not have one return this material, unopened to BD Biosciences, 10975 Torreyana Rd, San Diego, CA 92121 and any money paid for the material will be refunded.
6. mTESR™1 is a trademark of StemCell Technologies.
7. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
8. Cy is a trademark of Amersham Biosciences Limited. This conjugated product is sold under license to the following patents: US Patent Nos. 5,486,616; 5,569,587; 5,569,766; 5,627,027.
9. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
10. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
11. An isotype control should be used at the same concentration as the antibody of interest.
12. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Addison WN, Sorensen ES, Kaartinen MT, McKee MD. Pyrophosphate inhibits mineralization of osteoblast cultures by binding to mineral, up-regulating osteopontin, and inhibiting alkaline phosphatase activity. *J Biol Chem.* 2007; 282(21):15872-15883. (Biology)

Dorheim MA, Sullivan M, Dandapani V, et al. Osteoblastic gene expression during adipogenesis in hematopoietic supporting murine bone marrow stromal cells. *J Cell Physiol.* 1993; 154(2):317-328. (Clone-specific)

Eghbali-Fatourechi GZ, Lamsam J, Fraser D, Nagel D, Riggs BL, Khosla S. Circulating osteoblast-lineage cells in humans. *N Engl J Med.* 2005; 352(19):1959-1966. (Clone-specific)

International Stem Cell Initiative. Characterization of human embryonic stem cell lines by the International Stem Cell Initiative. *Nat Biotechnol.* 2007; 25(7):803-816. (Biology)

Lawson GM, Katzmann JA, Kimlinger TK, O'Brien JF. Isolation and preliminary characterization of a monoclonal antibody that interacts preferentially with the liver isoenzyme of human alkaline phosphatase. *Clin Chem.* 1985; 31(3):381-385. (Immunogen)

O'Connor MD, Kardel MD, Iosfina I, Youssef D, Lu M, Li MM, Vercauteren S, Nagy A, Eaves CJ. Alkaline phosphatase-positive colony formation is a sensitive, specific, and quantitative indicator of undifferentiated human embryonic stem cells. *Stem Cells.* 2008; 26(5):1109-1116. (Biology)