**Product Information**

- **Material Number:** 561495
- **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.

**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 to Alexa Fluor® 488 under optimum conditions, and unreacted Alexa Fluor® 488 was removed.

**Application Notes**

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<tr>
<td>Flow cytometry</td>
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<td>Bioimaging</td>
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**Flow cytometric analysis of Alkaline Phosphatase expression on human embryonic stem (ES) cells.** H9 human ES cells (WiCell, Madison, WI) passage 45 grown in mTeSR™1 medium (StemCell Technologies) on BD Matrigel™ hESC-qualified Matrix (Cat. No. 354277) were harvested and stained with Alexa Fluor® 488 Mouse anti-Human Alkaline Phosphatase antibody (solid line) or Alexa Fluor® 488 mouse IgG1, κ isotype control (Clone MOPC-21, Cat. No. 557702, dashed line). Flow cytometry was performed on a BD LSR™ II flow cytometry system.

**Immunofluorescent staining of Alkaline Phosphatase on human embryonic stem (ES) cells.** H9 human ES cells (WiCell, Madison, WI) passage 34 grown on irradiated mouse embryonic fibroblasts were fixed with BD Cytofix™ Fixation Buffer (Cat. No. 554655) and stained with Alexa Fluor® 488 Mouse anti-Human Alkaline Phosphatase monoclonal antibody (pseudo-colored green) at 5 µg/mL. Cell nuclei were counter-stained with Hoechst 33342 (pseudo-colored blue). The images were captured on a BD Pathway™ 435 Cell Analyzer and merged using BD Attovision™ Software.
## Suggested Companion Products

<table>
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<tr>
<td>354277</td>
<td>BD Matrigel™ hESC-qualified Matrix, 5 ml vial</td>
<td>NA</td>
<td>(none)</td>
</tr>
<tr>
<td>554656</td>
<td>Stain Buffer (FBS)</td>
<td>500 ml</td>
<td>(none)</td>
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<tr>
<td>557702</td>
<td>Alexa Fluor® 488 Mouse IgG1 κ Isotype Control</td>
<td>100 tests</td>
<td>MOPC-21</td>
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<tr>
<td>353219</td>
<td>BD Falcon™ 96-well Imaging Plate</td>
<td>NA</td>
<td>(none)</td>
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<tr>
<td>554655</td>
<td>Fixation Buffer</td>
<td>100 ml</td>
<td>(none)</td>
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## Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use $1 \times 10^6$ cells in a 100-µl experimental sample (a test).
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Alexa Fluor® 488 fluorochrome emission is collected at the same instrument settings as for fluorescein isothiocyanate (FITC).
5. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
6. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
7. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
8. mTESR™1 is a trademark of StemCell Technologies.
9. 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.
10. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

## References


