Product Information

Phosphatase, Alkaline-Agarose from Calf Intestine

Ammonium Sulfate Suspension

P0762

Storage Temperature: 2-8 °C

Product Description

Alkaline phosphatase (EC 3.1.3.1) is a zinc-dependent dimeric glycoprotein with a broad specificity for phosphate esters of alcohols, amines, pyrophosphate and phenols. Alkaline phosphatase is routinely used to dephosphorylate proteins and nucleic acids. Native alkaline phosphatase has an approximate molecular mass of 138-140 kDa, while the individual dimer has a molecular mass of 69-70 kDa.[1,2]

Alkaline phosphatase is most stable in the pH range of 7.5-9.5.[3] The enzyme has optimal activity in the pH range of 8-10.

This alkaline phosphatase-agarose product is prepared by the immobilization of alkaline phosphatase, originally isolated from calf intestine, to activated 4% cross-linked beaded agarose. Several references have cited use of this product in various peptide and protein dephosphorylation protocols,[3-6] band-shift analysis,[7] cell lysate treatment,[8-11] sample preparation for protein crystallization,[12] and a nucleotide loading assay.[13]

The use of this product has been reported in various buffer systems, such as:

- 0.1 M Trizma® (pH 8.0)[3,4]
- 25 mM ammonium bicarbonate[6]

Buffers with chelating agents such as EDTA should **not** be used with this alkaline-phosphatase-agarose product, because chelating agents can bind the zinc from alkaline phosphatase and render the enzyme inactive. Acidic pH ranges should be avoided with this product, as acidic pH is known to inactivate alkaline phosphatase.[1]

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Product

This alkaline phosphatase-agarose product is sold as a 2.0 M ammonium sulfate suspension (pH 7), with 1 mM $MgCl_2$ and 0.1 mM $ZnCl_2$ also present.

Preparation Instructions

General instructions for re-suspension of our enzyme-agarose conjugates include the following steps:

- Suspend the lyophilized enzyme-agarose to 5-10 mg solid/mL water.
- Allow brief hydration of the lyophilized powder.
- Filter and wash the rehydrated enzyme-agarose product several times with either water or your intended buffer.
- Re-suspend the enzyme-agarose in your intended buffer. The product is now ready for use.

Storage/Stability

For re-use of our enzyme-agarose conjugates, the following steps may be used as a general guide:

- Wash the enzyme-agarose with water and/or buffer until it is free of substrates.
- For long-term storage, enzyme-agarose products may be re-converted to their dry form, as follows:
    - Wash the enzyme-agarose with the buffer of choice.
    - Drain excess buffer
    - Dry the enzyme-agarose in a vacuum desiccator.
    - Store the freshly lyophilized enzyme-agarose at 2–8 °C.

References

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