

Product Information

ReadyShield™ Phosphatase Inhibitor Cocktail

For Serine/Threonine Protein Phosphatases and L-Isozymes of Alkaline Phosphatase

Catalogue Number P0001

Storage Temperature -20 °C

Product Description

Crude protein extracts contain endogenous enzymes, such as phosphatases, which can dephosphorylate the proteins in the extracts. The best way to increase the yield of intact unmodified proteins is to add inhibitors for the phosphatase enzymes known to be present in the extract.

ReadyShield™ Phosphatase Inhibitor Cocktail has been optimized and tested for mammalian cellular and tissue extracts. It contains inhibitors with a broad specificity for L-isozymes of alkaline phosphatases, and serine/ threonine protein phosphatases. ReadyShield™ Phosphatase Inhibitor Cocktail has been tested on extracts from various animal tissues such as human placenta and bovine liver, and on extracts of A431, CHO, and U937 cells.

This cocktail is supplied as a ready-to-use solution using a proprietary non-freezing formulation.

ReadyShield™ Phosphatase Inhibitor Cocktail (Catalogue Number P0001) is a non-freezing formulation that contains the same inhibitors as Phosphatase Inhibitor Cocktail 3 (Cat. No. P0044).

This cocktail contains three Phosphatase inhibitors, with the following specific inhibitory properties:

- Cantharidin (Cat. No. C7632 or equivalent) inhibits protein phosphatase 2A (PP-2A).¹
- (-)-p-Bromolevamisole oxalate (Catalogue Number 190047 or equivalent) inhibits L-isoforms of alkaline phosphatases.²
- Calyculin A (Cat. No. C5552 or equivalent) inhibits protein phosphatases 1 and 2A (PP-1 and PP-2A).^{3,4}

Precautions and Disclaimer

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

Storage/Stability

The cocktail is shipped on wet ice and storage at -20 °C is recommended. The product, as supplied, is stable for two years. For short time periods the product can be stored at 2-8 °C.

Procedure

The recommended dilution of the cocktail in the biological extract is 1 ml of the cocktail per 500 mg of protein extracted from tissue or cells. In many cases, the cocktail can be used at a final concentration of 1% (v/v, 1 ml of cocktail solution per 100 ml of extraction buffer).

Note: Not all lysates and extracts contain the same levels of endogenous phosphatases, and it may be necessary to adjust the volume of cocktail used.

References

1. Honkanen, R.E., Cantharidin, another natural toxin that inhibits the activity of serine/threonine protein phosphatase types 1 and 2A. FEBS Lett., 330, 283- 286 (1993).
2. Onsgard-Meyer, M. et al., Effect of bromotetramisole on renal phosphate excretion. Proc. Soc. Exp. Biol. Med., 213, 193-195, (1996).
3. Runnegar, M.T. et al., Differential toxicity of the protein phosphatase inhibitors microcystin and calyculin A. J. Pharmacol. Exp. Ther., 273, 545-553 (1995).
4. Peirce, M.J. et al., Role of protein phosphatase in the regulation of human mast cell and basophil function. Am. J. Physiol., 277, C1021-C1028 (1999).

EO, DT 06/2

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

Technical Service

Visit the tech service page on our web site at SigmaAldrich.com/techservice.

Standard Warranty

The applicable warranty for the products listed in this publication may be found at SigmaAldrich.com/terms.