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ProductInformation

Phosphatase Inhibitor Cocktail 2
For Tyrosine Protein Phosphatases, Acid and Alkaline Phosphatases

Product Number **P 5726**
Storage Temperature 2-8 °C

Product Description

Crude cell extracts contain a number of endogenous enzymes, such as proteases and phosphatases, which are capable of modifying the proteins present in the extract. The best way to improve the yield of native proteins is to add inhibitors of these enzymes known to be present in the source material. This phosphatase inhibitor cocktail has been optimized and tested for tyrosine protein phosphatases, acid and alkaline phosphatases.

Component

The cocktail is supplied as a clear aqueous solution. The product has been sterile filtered through a 0.2 µm membrane and the bottles are aseptically filled.

The individual components of this proprietary formulation have specific inhibitory properties. A description of each inhibitor is given below.

Sodium orthovanadate (Product No. S 6508) inhibits a number of ATPases, protein tyrosine phosphatases, and other phosphate-transferring enzymes.[1]

Sodium molybdate (Product No. M 1003) inhibits acid and phosphoprotein phosphatases.[2]

Sodium tartrate (Product No. S 4797) inhibits acid phosphatases.[3]

Imidazole (Product No. I 0125) inhibits alkaline phosphatases.[4]

Storage/Stability

The product is shipped on wet ice and it is recommended to store the cocktail at 2-8 °C. The product is stable for two years as supplied.

Procedure

One ml will inhibit phosphatase activities found in the 100,000 x *g* supernatant from human placenta, bovine liver, rabbit muscle, A431, or Jurkat cell extracts at a protein concentration of approximately 5 mg/ml.

One ml of cocktail solution is used to prepare 100 ml of supernatant that contains a maximum of 500 mg of protein. Therefore, 1 ml of cocktail solution should be added per 500 mg of protein extracted from the tissue in use or 1 ml of cocktail solution per 100 ml of extraction buffer.

This product has been tested on cell extracts from various animal tissues (cytosolic and TRITON™ X-100 extracts of bovine liver and human placenta; cytosolic extract of rabbit muscle; TRITON X-100 extracts of A431 and Jurkat cells). It was found to inhibit phosphatase activities as measured with p-nitrophenyl phosphate (pNPP) at pH 7.5, and tyrosine protein phosphatase activity as measured by dephosphorylation of ^{32}P-Tyr-myelin basic protein at pH 7.6.

References

1. Beynon, R. J. and Bo, J.S. (1989) Proteolytic Enzymes A Practical Approach, eds. p. 207.
2. Jain, M.K. (1982) Handbook of Enzyme Inhibitors, pp. 222. John Wiley and Sons, New York, NY.
3. Jain, M.K. (1982) Handbook of Enzyme Inhibitors, pp. 334. John Wiley and Sons, New York, NY.
4. Jain, M.K. (1982) Handbook of Enzyme Inhibitors, pp. 189-90. John Wiley and Sons, New York, NY.

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