

Product Information

Protease Inhibitor Cocktail Animal Component Free for general use

Catalog Number **I3911**
Storage Temperature -20°C

Product Description

Crude cell extracts contain a number of endogenous enzymes, such as proteases and phosphatases, which are capable of degrading the proteins present in the extract. The best way to improve the yield of intact proteins is to add inhibitors of those enzymes known to be present.

This protease inhibitor cocktail has been optimized and tested for general use. It is a mixture of water-soluble protease inhibitors with a broad specificity for the inhibition of serine, cysteine, and metalloproteases.

Components of this cocktail are of non-animal origin and no animal products were used in the component production process. All vessels and instruments used for the cocktail production are dedicated for animal component free production and have never encountered an animal product. Aprotinin used in this cocktail is a recombinant bovine protein expressed in plants (*Nicotiana*).

Specific inhibitory properties of the components are:

- AEBSF – [4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride] – serine proteases, e.g., trypsin, chymotrypsin, plasmin, kallikrein, and thrombin
- Aprotinin – serine proteases, e.g., trypsin, chymotrypsin, plasmin, and kallikrein; human leukocyte elastase, but not pancreatic elastase.
- Bestatin hydrochloride – aminopeptidases, e.g., leucine aminopeptidase and alanyl aminopeptidase.¹⁻⁴
- E-64 – [N-(*trans*-Epoxysuccinyl)-L-leucine 4-guanidinobutylamide] – cysteine proteases, e.g., calpain, papain, cathepsin B, and cathepsin L.
- EDTA – metalloproteases
- Leupeptin hemisulfate salt – both serine and cysteine proteases, e.g., plasmin, trypsin, papain, and cathepsin B.

Recommended Usage

One ml of the cocktail solution is recommended for the inhibition of endogenous enzymes equivalent to 1 mg of USP pancreatin. One bottle is recommended for the inhibition of proteases present in a maximum of 20 g of cell extract.

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

Reagent

The product is a lyophilized powder

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.

Preparation Instructions

One bottle prepares 100 mL of cocktail solution. The product is packaged in a 10 mL serum vial with a crimp cap. Dissolve the contents of the vial in 10 mL of working buffer and then transfer to a larger container for dilution to 100 mL.

Storage/Stability

Store the lyophilized powder at -20°C . The lyophilized powder is stable for 4 years when stored at -20°C .

References

1. Umezawa, H., Ann. Rev. Microbiol., **36**, 75-99 (1982).
2. Aoyagi, T. et al., Biochem. Int., **9**, 405-411 (1984).
3. Aoyagi, T., and Umezawa, H., Acta Biol. Med. Ger., **40**, 1523-1529 (1981).
4. Mumford, R.A. et al., Biochem. Biophys. Res. Comm., **103**, 565-572 (1981).

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