

## Product Information

# ReadyShield™ Protease Inhibitor Cocktail

For Use with Mammalian Cell and Tissue Extracts

PIC0002

### Product Description

Crude protein extracts contain endogenous proteases, which can degrade the proteins in the extracts. The best way to increase the yield of intact unmodified proteins is to add inhibitors for the proteases known to be present in the extract.

This ReadyShield™ Protease Inhibitor Cocktail has been optimized and tested for mammalian cell and tissue extracts. It contains inhibitors with a broad specificity for serine, cysteine, and acid proteases, and aminopeptidases. The 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™ Protease Inhibitor Cocktail for use with mammalian cell and tissue extracts is a non-freezing formulation that contains the same inhibitors as is the DMSO based cocktail P8340.

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<sup>1-4</sup>
- E-64 – [N-(trans-Epoxy succinyl)-L-leucine 4-guanidinobutylamide] – cysteine proteases, e.g., calpain, papain, cathepsin B, and cathepsin L
- Leupeptin hemisulfate salt– both serine and cysteine proteases, e.g., plasmin, trypsin, papain, and cathepsin B

- Pepstatin A – acid proteases, e.g., pepsin, renin and cathepsin D, and many microbial aspartic proteases

### Procedure

The recommended dilution of the cocktail in the biological extract is 1 ml of the cocktail in 100 ml of lysate derived for example from 20g (wet weight) of bovine liver or 10<sup>9</sup> CHO cells.

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

### 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.

### 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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