GRS Protease Inhibitor Cocktail

 # GPI02.0001 (1 ml)

(FOR RESEARCH ONLY)

Product Description

GRS Protease Inhibitor Cocktail is a mix of several compounds that inhibit protease activity and is being used to protect against undesired protein digestion that occurs during and after cell lysis.

Composition

The GRS Protease Inhibitor Cocktail comprises 100mM PMSF, 2mM Bestatin, 0.3mM Pepstatin A, and 0.3 mM E-64, dissolved in DMSO containing a small amount of deionized water.

PMSF (PhenylMethylSulfonyl Fluoride) is a serine protease inhibitor with an effective concentration of 0.1-1mM and a short half-life in aqueous solutions (ranging from ~2 hours at pH 7 to ~30 min at pH 8). Bestatin (Ubenimex) is a competitive, reversible protease inhibitor, derived from *Streptomyces olivoreticuli*, which has been shown to inhibit the enzymatic degradation of oxytocin, vassopresin, and several other peptides and compounds. Pepstatin A is a hexapeptide containing the uncommon aminoacid statine and is a very potent inhibitor of aspartyl proteases, as well as of some aspartic proteases such as Pepsin and Cathepsins D and E. And E-64 is an epoxide isolated from *Aspergillus japonicas* that irreversibly inhibits many cysteine proteases such as papain, calpain, staphopain and cathepsins B and L.

Usage

For the inhibition of protease activity, it is suggested to use 10 µl of GRS Protease Inhibitor Cocktail for each 1ml of cell lysate prepared from a cell culture with a density of 10^8cells/ml. Yet, as levels of endogenous proteases vary a lot between different organisms/cells, it is recommended to optimize final concentration for a particular experiment.

Storage

The GRS Protease Inhibitor Cocktail is dissolved in DMSO (containing small amount of deionized water) and should stored at -20ºC for up to 1 year. If crystals have been formed, incubate at room temperature for 5 minutes before usage.

Caution

PMSF is toxic (acetylcholine esterase inactivator) and may cause irritation to eyes and skin. When handling, always wear gloves and eye protection and proper lab clothing.