Product Information

Leupeptin Ready Made Solution

Non-freezing solution, 5 mg/mL

SAE0153

Product Description

Storage Temperature: –20 °C

Leupeptin, also known as *N*-acetyl-L-leucyl-L-leucyl-L-argininal, is a tripeptide produced by *Actinomycetes*/*Streptomyces*. Leupeptin is a reversible competitive inhibitor of cysteine proteases and serine proteases.[1] Leupeptin acts by covalent binding to, respectively:[2]

- Catalytic cysteines of cysteine proteases
- Catalytic series of serine proteases

Leupeptin was first isolated from microbial sources as a mixture of two very similar forms:[3]

- Acetyl-Leu-Leu-Arg-al
- Propionyl-Leu-Leu-Arg-al

While the propionyl leupeptin is active as an inhibitor, the acetyl form is more commonly used.

Leupeptin has been reported to inhibit calpain,[4] cathepsin B,[5] cathepsins H and L,[6] and trypsin.[7]

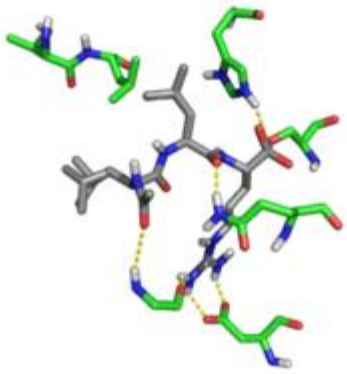

Figure 1. Crystal structure of Leupeptin (silver) in the Trypsin (green) binding pocket. Hydrogen bonds are shown as yellow dotted lines.[8,9]

A typical working concentration range is 10-100 µM. The activity of leupeptins and related analogs has been studied.[10]

HPLC analysis of leupeptin gives multiple peaks because of the formation of tautomeric isomers in aqueous solution.[11] The purity is determined using three main peaks. The majority of 'contaminating' peptide is racemized leupeptin.

Reagent

This Leupeptin Ready Made Solution is supplied as a proprietary non-freezing formulation, at 10 mM concentration (~5 mg/mL).

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The solution is shipped on cooler packs ("wet ice").

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.

Usage

The stock solution may be diluted 1:100 to obtain a 100 µM working concentration. The effective concentration of leupeptin is in the range of 10 µM–100 µM.

Because of its aldehyde group, leupeptin may act as a reducing agent, and thus may interfere in protein determination assays, such as the Lowry assay and, to a lesser extent, the Bradford assay.

References

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