

Product Information

E64 Ready Made Solution

Non-freezing solution, 1 mg/mL

Catalog Number **SAE0154**

Storage Temperature -20 °C

CAS RN 66701-25-5 (E-64)

Synonyms: Proteinase Inhibitor E 64; *N*-[*N*-(*L*-3-transcarboxyirane-2-carbonyl)-*L*-Leucyl]-agmatine; trans-Epoxy succinyl-*L*-leucylamido(4-guanidino)butane; *L*-trans-3-Carboxyoxiran-2-carbonyl-*L*-leucylagmatine; *N*-(trans-Epoxy succinyl)-*L*-leucine 4-guanidinobutylamide

Product Description

E-64 is an irreversible, potent and highly selective cysteine protease inhibitor. The trans-epoxy succinyl group of E-64, its active moiety, irreversibly binds to an active thiol group of many cysteine proteases, such as papain, actinidase, and cathepsins B, H and L,^{2,3} to form a thioether linkage.

E-64 is reported to be one of the most effective low molecular weight inhibitors of trypsin-catalyzed hydrolysis.³ E-64 inhibited the activity of bleomycin hydrolase, and blocked the activity of a yeast cysteine protease gene (YCP1) which induces an increase in bleomycin metabolism.⁴ For *in vivo* studies, E-64 can be very useful, because it has specific inhibition, it is permeable in cells and tissues, it has low toxicity, it is easily synthesized, and it is stable.²

E-64 does not react with the functional thiol group of *L*-lactate dehydrogenase or creatine kinase, both non-protease enzymes.^{5,6} E-64 does not inhibit serine proteases (except trypsin) like the cysteine protease inhibitors leupeptin and antipain.^{2,7} It does not react with low MW thiol compounds like 2-mercaptoethanol. E-64 has been used as an active site titrant.^{2,8,9} Synthetic¹ and natural⁵ methods for E-64 preparation have been reported.

This E-64 Ready Made Solution is supplied as a proprietary 2.8 mM non-freezing solution formulation. .

Storage/Stability

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.

Procedure

The stock solution may be diluted at a ratio of 1:100 to 1:1000 to achieve a working concentration in the range of 28 μM - 2.8 μM, respectively. The effective concentration range is 1-10 μM.

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.

References

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8. Beynon, R.J. and Bond, J.S (eds.), *Proteolytic Enzymes: A Practical Approach*. IRL Press (Oxford, UK), 244 (1989).
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