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ProductInformation

Enalapril maleate salt

Product Number **E 6888**
Store at Room Temperature

Product Description

Molecular Formula: $C_{20}H_{28}N_2O_5 \cdot C_4H_4O_4$
Molecular Weight: 492.5
CAS Number: 76095-16-4
Melting Point: 143-144.5 °C[1]
Specific Rotation: -42.2° (10 mg/ml, methanol, 25 °C)
pK_a: 3.0, 5.4 [1]
Synonyms: (S)-1-[N-[1-(ethoxycarbonyl)-3-phenylpropyl]-L-alanyl]-L-proline maleate; 1-[N-[(S)-1-carboxy-3-phenylpropyl]-L-alanyl]-L-proline 1'-ethyl ester maleate

Enalapril is an angiotensin-converting enzyme (ACE) inhibitor that exerts its activity *in vivo* after it is converted to its diacid metabolite enlaprilat.[1,2] It is used in cardiovascular research and in studies on hypertension.[1-4] A review of the effects of enalapril on smooth muscle contractile proteins, and arterial wall structure in the context of hypertension has been published.[5]

Enalapril and other ACE inhibitors have been used at 1-60 μM in cultured bovine aortic endothelial cells to probe their effects on endothelial nitric oxide production and action, and on endothelial oxidative stress.[6] The effect of enalapril on the expression of tissue factor and TNF-α, IL-6 and IL-10 in co-cultured U-937 cells and human coronary artery endothelial cells has been studied.[7] A study in rats of TGF-β and fibronectin levels with and without enaliapril treatment has been described.[8]

A multiwell plate method for the analysis of enalapril and enalaprilat that incorporates solid phase extraction and LC/tandem MS has been published.[9]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in methanol (50 mg/ml), with heat as needed, yielding a clear, colorless to yellow solution. It has also been reported to be soluble in water (25 mg/ml) and in ethanol (8 mg/ml).[1] This product is also soluble in dimethylformamide.[10]

References

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4. Benedict, C. R., Centrally acting antihypertensive drugs: re-emergence of sympathetic inhibition in the treatment of hypertension. Curr. Hypertens. Rep., **1(4)**, 305-312 (1999).
5. Packer, C. S., Changes in arterial smooth muscle contractility, contractile proteins, and arterial wall structure in spontaneous hypertension. Proc. Soc. Exp. Biol. Med., **207(2)**, 148-174 (1994).
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8. Volpini, R. A., et al., Effect of enalapril and losartan on the events that precede diabetic nephropathy in rats. Diabetes Metab. Res. Rev., **19(1)**, 43-51 (2003).

9. Lee, J., et al., Simultaneous quantitation of enalapril and enalaprilat in human plasma by 96-well solid-phase extraction and liquid chromatography/tandem mass spectrometry. Rapid Commun. Mass Spectrom., **17(11)**, 1157-1162 (2003).

10. Ip, D.P. & Brenner, G.S., Anal. Profiles of Drug Substances, **16**, 207-243 (1987).

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