Droxidopa
Item No. 23779

CAS Registry No.: 23651-95-8
Formal Name: (βR),3-dihydroxy-L-tyrosine
Synonyms: L-threo-3,4-Dihydroxyphenylserine, L-Dihydroxyphenylserine, L-DOPS, SM 5688
MF: C_{9}H_{11}NO_{5}
FW: 213.2
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years

Laboratory Procedures

Droxidopa (L-DOPS) is supplied as a solid. A stock solution may be made by dissolving the L-DOPS in water. L-DOPS is slightly soluble in water. We do not recommend storing the aqueous solution for more than one day.

Description

L-DOPS is a synthetic precursor and prodrug of the neurotransmitter norepinephrine.\(^{1}\) It is transformed into norepinephrine through the action of DOPA decarboxylase. L-DOPS increases norepinephrine levels in the rat heart following intraperitoneal administration and in the brain following intracerebroventricular administration at doses of 125 and 100 µg/animal, respectively. It increases arterial pressure and mesenteric arterial resistance in rats with ligated portal vein or biliary ducts when used at doses of 25-50 mg/kg.\(^{2}\) L-DOPS crosses the blood brain barrier, however, its effects can be blocked by the peripherally-restricted DOPA decarboxylase inhibitor carbidopa (Item No. 23783), indicating that the mechanism is peripheral.\(^{2,3}\) Formulations containing droxidopa are used in the treatment of neurogenic orthostatic hypotension.

References