

(-)-Sparteine

Chemical Properties

CAS No.:	24915-04-6
Formula:	C ₁₅ H ₂₆ N ₂
Molecular Weight:	234.38
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Sparteine is a class 1a antiarrhythmic agent, a sodium channel blocker. The deficient debrisoquine hydroxylation of Sparteine is due to the absence of P-450IID1 protein in the livers of poor metabolizers.
Targets(IC ₅₀)	CYP17: None
In vitro	<p>METHODS AND RESULTS:We report the enantioselective, lateral deprotonation of ortho-protected or functionalized tertiary N,N-dialkyl aryl O-carbamates 5-7 (Scheme 2) and meta-protected carbamates 14, 15, and 20 (Schemes 5 and 7) by s-BuLi/(-)-Sparteine and subsequent quench with a variety of electrophiles to give products 11-13 and 16, 17, and 21 in yields up to 96% and enantiomeric ratios up to 99:1. The influence of organolithium reagents, ratio of organolithium/(-)-Sparteine pair versus N,N-dialkyl aryl O-carbamate starting materials, temperature, solvents, electrophiles, substituents located ortho or meta to the O-carbamate moiety, and O-carbamate N-substituents was investigated. The identical absolute configuration of the stereogenic center of the major enantiomers of the products, as established by single-crystal X-ray analysis for substrates (S)-11c, (S)-19, and (S)-21a, provides evidence for a consistent stereochemical course in the enantioselective deprotonation. Mechanistic investigations, including an estimate of the configurational stability of the benzyllithium species 9 (starting from 12e; Scheme 8) and 23 (starting from 17e; Scheme 9), both derived by tin-lithium exchange, and 24 (starting from 20; Scheme 9) are reported.</p> <p>CONCLUSIONS: The experimental results, together with semiempirical molecular orbital calculations (PM3/SMD), are consistent with a process in which enantioinduction occurs in the deprotonation step (Scheme 11).</p>

Solubility Information

Solubility	< 1 mg/ml refers to the product slightly soluble or insoluble
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.267 mL	21.333 mL	42.666 mL
5 mM	0.853 mL	4.267 mL	8.533 mL
10 mM	0.427 mL	2.133 mL	4.267 mL
50 mM	0.085 mL	0.427 mL	0.853 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Highly enantioselective (-)-sparteine-mediated lateral metalation-functionalization of remote silyl protected ortho-ethyl N,N-dialkyl aryl O-carbamates. J Org Chem. 2015 Apr 3;80(7):3368-86.

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Tel:781-999-4286

E-mail:info@targetmol.com

Address:36 Washington Street,Wellesley Hills,MA 02481