

# Thioanalogs of Sparteine Lactams [6].

## Part II. (+)-2-Thionosparteinium Perchlorate

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Sparteine Thiolactams, (+)-2-Thionosparteinium Cation, X-Ray Data, IR Data, NMR Data

(+)-2-Thionosparteinium perchlorate has been obtained and characterized by IR and NMR spectroscopy. On the basis of the coupling constant  $J_7-J_{17\beta}$  and chemical shifts for C(12) and C(14) a boat conformation of ring C is proposed. The infrared spectrum in the solid state indicates an intermolecular hydrogen bond  $N^+-H\cdots S$ . This has been ascertained by X-ray crystal structure determination:  $H\cdots S - 2.44(8)\text{\AA}$ ,  $N^+\cdots S - 3.279(6)\text{\AA}$ ,  $N^+-H\cdots S - 160(6)^\circ$ . The solution NMR spectra clearly show that the solid state structure is retained in solution.