

Using alkyl trithiocarbonate approach to synthesis of mesna from 1, 2-dihalogenoethane

Dao Nguyet Suong Huyen, Nguyen Van Hai, Nguyen Van Manh, Nguyen Dinh Luyen
Hanoi University of Pharmacy

Summary: *In this study, a new method for synthesis of mesna from 1,2-dihalogenoethane via a 3-step pathway was reported in the overall yields of 37.8 - 44.4%. Firstly, sodium 2-halogenoethanesulfonate was prepared from 1,2-dihalogenoethane by Strecker reaction. Secondly, sodium 2-halogenoethanesulfonate was reacted with sodium trithiocarbonate to form sodium 2-(dithiocarboxylatothio)-ethanesulfonate, followed by acidification to pH 2 by H₂SO₄ or HCl solution. Finally, mesna was obtained by adjusting pH to 6.6-6.8 with 1.5 M NaOH solution. Structures of the intermediates and mesna were determined by IR, MS and NMR spectral data analysis. The purity of mesna obtained was 97.0% (by iodimetric titration).*