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Steric Effects on the Oxidation Potential of 1-aryl Thioglycosides

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Abstract: The electrochemical oxidation of several 1-arylthioglycosides has been studied by cyclic voltammetry in acetonitrile. We found that the oxidation potential of the α anomer always occurs at a less positive oxidation potential than of the β anomer. The difference in the oxidation potential depends on the substituent attached on the C-3 of the sugar moiety and is greatly influenced by the stability of the radical cation obtained after the first electron transfer.

Key Words: Thioglycosides, cyclic voltammetry, oxidation potentials, steric effects.

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