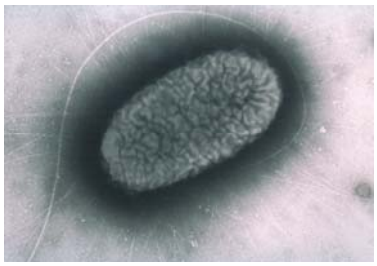

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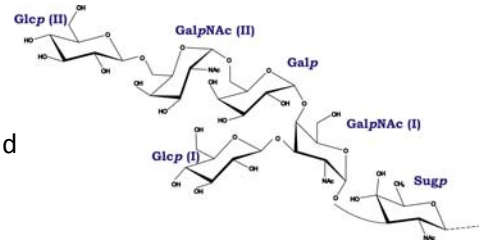

ABSTRACT - POSTER 6

Synthesis and biological activities of (2-ammoniumethyl) β-D-glucopyranoside bromide

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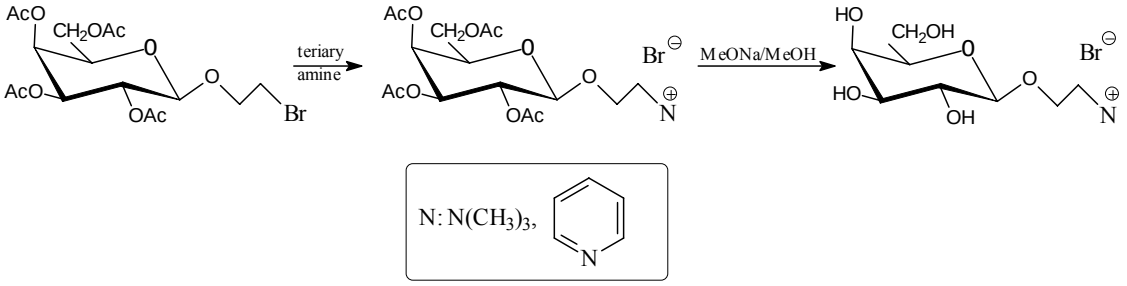
The glycosides play the great role in biological activity. Some of them constitute structural parts of many antibiotics or vitamins. The chemists are currently interested in D-glucopyranosides as potential anti-HIV agents.

Quaternary ammonium salts (QACs) constitute a huge, very interesting and widely used group of organic compounds. Their antibacterial, antiviral and antifungal activities are known well. The activity of many biological agents depends on the quaternary ammonium group presence. Many of them demonstrate antistatic and anticorrosive activity. Numerous QACs exhibit also surface activity, good detergency and low toxicity. [1]

While examining biological activity of *N*-(2,3,4,6-tetra-*O*-acetylo-β-D-glucopyrano-syl)trimethylammonium bromide and *N*-(2,3,4,6-tetra-*O*-acetylo-β-D-glucopyranosyl)-pyridinium bromide, it has been found that both compounds exhibit noncompetitive type of inhibition to the AMP-Deaminase (AMP-DA) isolated from the rat skeletal muscle [2]. Observed activity can lead to a further toxicological consequences due to the significant role of the studied enzyme involved in a number of physiological processes such as metabolism of the purine nucleotide cycle.

A new series of quaternary ammonium bromides have been synthesized in reaction of (2-bromoethyl) 2,3,4,6-tetra-*O*-acetyl-β-D-galactopyranoside with tertiary amines: pyridine and trimethylamine (scheme 1). The structures of isolates were determined by spectral analysis including extensive 2D NMR analyses and X-ray crystallography. QACs were detected of mutagenic activity. *Vibrio harveyi* A16 (a *luxE* mutant) was used for the bioluminescence-based mutagenicity assay. [3]



Scheme 1

References: [1] W. Śliwa, N-Substituted Salts of pyridine and related compounds, WSP, Częstochowa, Poland, ISBN 83-7098-198-4, 1996. [2] A. Składanowski, P. Stepnowski, K. Kleszczyński, B. Dmochowska**,** *Envir. Tox. Pharm.*, 2005, **19(2)**, 291[3] B. Podgorska, G. Węgrzyn, *Lett. Appl. Microbiol. Genet.*, 2007, **48**, 409

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