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Application of silyl sulfinates to the analysis of natural products with gas chromatography

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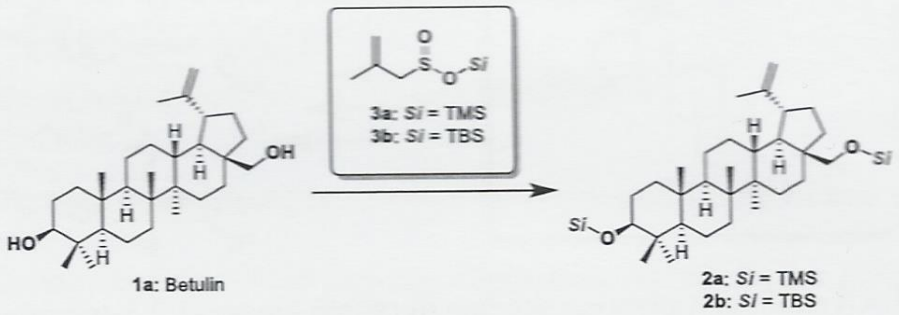
Betulin (**1**) is a naturally occurring pentacyclic triterpene that can be isolated up to 28% from the dry mass of birch bark. The extraction process provides technical product which besides betulin (~70% assay) contains also betulinic acid, lupeol, etc.[1] This project is devoted for research of superior analytical procedures for derivatization purposes of such natural compounds for gas chromatography using Vogel's silyl sulfinates **3a** and **3b**.[2] The latter were compared to other commercially available reagents used for silylation.[3]



Scheme 1. Derivatization of betulin.

We found, that both silyl sulfinates showed higher reactivity than commercially available reagents. Excellent reactivity was obtained by using BSA or BSTFA in the presence of 5% of silyl sulfinate **3b**. Developed method was further successfully used in derivatization of betulinic acid and set of monosaccharides for quantitative and qualitative identification of compounds in various mixtures.

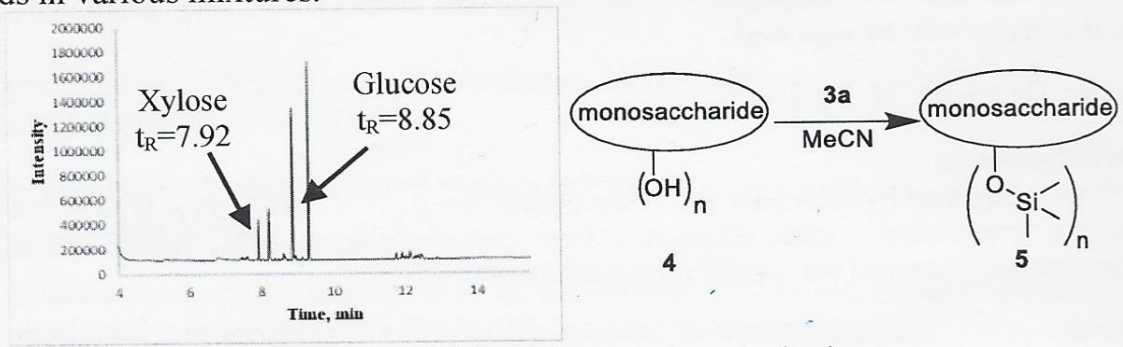


Figure 1. Analysis of mixture of carbohydrates.

Supervisor: Dr. chem. M. Turks

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