

### PC 8 - Synthesis of Thio-Oligosaccharides and Glycosides

D. Peikow<sup>(1)</sup>, C.-M. Matern<sup>(1)</sup>, K.-D. Spindler<sup>(2)</sup>, U. Schilde<sup>(1)</sup>, **M.G. Peter**<sup>(1)</sup>

<sup>(1)</sup>Department of Chemistry, University of Potsdam, P. O. Box 60 15 53, D-14415 Potsdam, Germany -

<sup>(2)</sup>Department of General Zoology and Endocrinology, University of Ulm, D-89069 Ulm, Germany

Thio-oligosaccharides and related thio-glycosides are rarely described in the literature. Thio-analogues of oligosaccharides derived from N-acetylglucosamine are of interest as potential enzyme inhibitors. Here, we report the synthesis of thio-glycoside analogues of N-acetyl-chitooligosaccharides. The protected 4-O-Tf-galactopyranosyl thioglycosides **1** were prepared by a new method from the corresponding p-methoxyphenyl glycosides of N-acetylglucosamine. Coupling of **1** with 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\beta$ -D-glucopyranose **2** in the presence of sodium hydride and 15-crown-5 in THF, followed by deprotection, afforded the pseudo-trisaccharides **3**. A complex of 15-crown-5 with sodium triflate was isolated from the reaction mixture as a by-product, and its crystal structure was determined by X-ray diffraction analysis.

The determination of the inhibitory activity (IC<sub>50</sub>) of these pseudo-oligosaccharides **3** towards different chitinases (A and B from *Serratia marcescens*, *Chironomus tentans* and Hevamin) and N-acetyl-glucosaminidase (*Chironomus tentans*) gave results in  $\mu$ M range.