Symposium on Chemistry and Biochemistry of Saccharides and Their Derivatives

On April 15—19, 1985 a *Symposium on Chemistry and Biochemistry of Saccharides and Their Derivatives* was organized by the University of Rostock in the Recreation Centre of the University at Heiligendamm, GDR. The symposium was attended by scientists from the Soviet Union, Hungary, Poland, GDR, and Czechoslovakia. After opening address by Professor *H. Kristen* from the University of Rostock, 33 lectures were delivered by representatives of the individual countries.

The results presented by Hungarian scientists revealed great development in synthetic chemistry of saccharides. They were successful in developing new methods for synthesis of biologically active derivatives, several of which have been utilized as medicines. Good results were obtained in synthesis of oligosaccharides, glycoproteins, and antibiotics. Remarkable results were achieved in utilization of cyclodextrins as new preparations in medicine, pharmaceutical industry, and agriculture.

Research in German Democratic Republic has been focused on problems connected with food industry (mainly utilization of pectins) and on use of saccharides as raw material for preparation of new medicines.

Research in Poland proceeded in two directions, namely in chemistry of monosaccharides and glycoconjugates. In the first area mainly the synthesis of monosaccharide derivatives containing sulfur, phosphorus, and selenium was dealt with, while in the field of glycoconjugates the research was concentrated on the chemistry and immunochemistry of polysaccharides of some gram-positive bacteria and glycolipids of membranes of erythrocytes of healthy and ill people.

Research in the Soviet Union directed to synthetic chemistry and structural investigation of polysaccharides and glycoconjugates is very important for development of chemistry and biochemistry of saccharides. Of the most significant results total synthesis of an antigen of one of dysenteric microbes, preparation of synthetic nonproteinous antigens, determination of structures of antigen polysaccharides of some bacteria and of saccharide chains of the influenza virus antigen should be mentioned. These investigations are important not only from the standpoint of basic research and methodic approach but also for practical application of the results in medicine. Elucidation of structures of some algae is of fundamental importance for development of food industry.

In Czechoslovakia interesting results were achieved in the field of practical utilization of plant polysaccharides and their accompanying compounds. Good results were obtained in modification and degradation reactions of cellulose, lignin, and hemicellulose directed towards need of industry, preparation of medicines and new ion-exchangers. Progress was made in the field of immobilization of pectolytic enzymes. The results may contribute to improve pectin production for food industry. Valuable results were achieved in electroreduction of monosaccharides as well as in isolation of specific lectins.

The following lectures were delivered at the symposium:

1. Romanowska, E. (Wrocław, Poland):
   Structure and serology of Citrobacter 00-Antigen.
2. Kościelak, J., Izdebska, E., Chelstowska, A. (Wrocław, Poland):
   Glycoconjugates, composition and structure in erythrosides of patients with congenital dyserythropoetic anemia, evidence for probable arrest of erythroside maturation.
3. Kocourek, J., Krajhandl, A. (Prague, Czechoslovakia):
   Application of immobilized lectins and division of glycoproteins (Saccharidic specificity of lectins from Oocytes from fishes).
4. Rexová, Ľ. (Bratislava, Czechoslovakia):
   Degradation of pectins by mobile and immobilized endopolygalacturonases.
5. Anger, H., Berth, G. (Potsdam-Rehbrücke, GDR):
   Estimation of the Mark—Houwink relationship of pectins by GPC-experiments.
6. Westphal, G. (Berlin, GDR):
   New knowledge on the mechanism of the Mailard reaction.
7. Szejtli, J. (Budapest, Hungary):
   Cyclodextrins: A new group of industrial basic materials.
8. Kandra, L. (Debrecen, Hungary):
   Synthesis of crown ether-type compounds from cyclodextrins.
9. Jodál, I. (Debrecen, Hungary):
   Investigation of the biological effects of pharmacones in the presence of cyclodextrins.
10. Szenti, L. (Budapest, Hungary):
    Methylated cyclodextrin derivatives.
11. Stadler, A. (Budapest, Hungary):
    Cyclodextrins in the pharmaceutical industry.
12. Danilov, L. L. (Moscow, USSR):
    Synthesis of polyprenyl derivatives of sugar phosphates.
13. Michalska, M. (Lodz, Poland):
    New modifications of monosaccharides by use of thio- and selenophosphoro-organic reagents.
14. Kovacs, J., Pintér, L., Messmer, A., Almássy, A. (Budapest, Hungary):
    Synthetic and stereochemical problems with free sugar phosphinimines.
15. Harangi, J. (Debrecen, Hungary):
    NMR Spectroscopic investigation of dioxolane-type carbohydrate derivatives.
16. Rosík, J. (Bratislava, Czechoslovakia):
    Perspectives of the research in the field of saccharides and their derivatives at the Institute of Chemistry of the Slovak Academy of Sciences.
17. Fedoroňko, M. (Bratislava, Czechoslovakia):
    Electroreduction of basic saccharides and their derivatives.
18. Peseke, K. (Rostock, GDR):
    Thioglycosides of substituted nicotinonitriles.
19. Kardošová, A. (Bratislava, Czechoslovakia):
    Glucans isolated from the leaves and roots of Marsh Mallow.
20. Sokolowski, J. (Gdansk, Poland):
    Reaction of dehydration of alditols.

21. Jarý, I., Čapek, K. (Prague, Czechoslovakia):
Synthesis of diamino derivatives of saccharides.
22. Bovin, N. V. (Moscow, USSR):
Artificial carbohydrate antigens, synthesis and use to produce nonspecific antibodies.
23. Chernyak, A. Yo. (Moscow, USSR):
Synthetic antigens related to *Streptococcus pneumoniae* type III capsular polysaccharide.
24. Banaszek, A., Grzeszczyk, B., Zamojski, A. (Warsaw, Poland):
Synthesis of 4-*O*-phosphoryl-β-D-glucopyranosyl-(1→4)-D-ribitol; repeating unit of capsular polysaccharide of *Haemophilus influenzae* type a.
25. Szeja, W. (Gliwice, Poland):
Catalytic hydrogenolysis of acetals and *O*-benzylic ethers.
26. Cech, D. (Berlin, GDR):
Synthesis and biochemistry of some sugar- and base-modified oligonucleotides.
27. Herczegh, P., Bognár, R., Zsély, M. (Debrecen, Hungary):
Hetero-Diels—Alder cycloadditions of sugar derivatives.
28. Kristen, H. (Rostock, GDR):
Derivatives of 6-mercapto-glucose.
29. Márton-Merész, M., Kuszmann, J. (Budapest, Hungary):
Synthesis of pyrimido-pyrimidine nucleosides.
30. Szabó, F. I., Farkas, I., Bognár, R., Sohár, P., Horváth, G., Batta, Gy. (Debrecen, Hungary):
Synthesis of the *C*-glycosides of condensed heterocycles with nitrogen bridge-head atom from 5-glycosyltetrazoles. In commemoration of *F. Ilona Szabó*, delivered by *R. Bognár*.
31. Szabó, L. (Debrecen, Hungary):
Synthesis of several diastereoisomeric rhamnose-containing disaccharides.
32. Somogyi, L. (Debrecen, Hungary):
Acetylation reactions of chelated hydrazone derivatives.
33. Somogyi, L. (Debrecen, Hungary):
Contribution to the chemistry of pyrazole-type dianhydrophenylosazones.

In the conclusion remarks Academician *N. K. Kochetkov* pointed to the up-to-dateness of the topic dealt with. He stated that the research in the field of chemistry and biochemistry of saccharides in socialist countries is on high theoretical and methodic level and comparable to that in the world scientific centres.

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