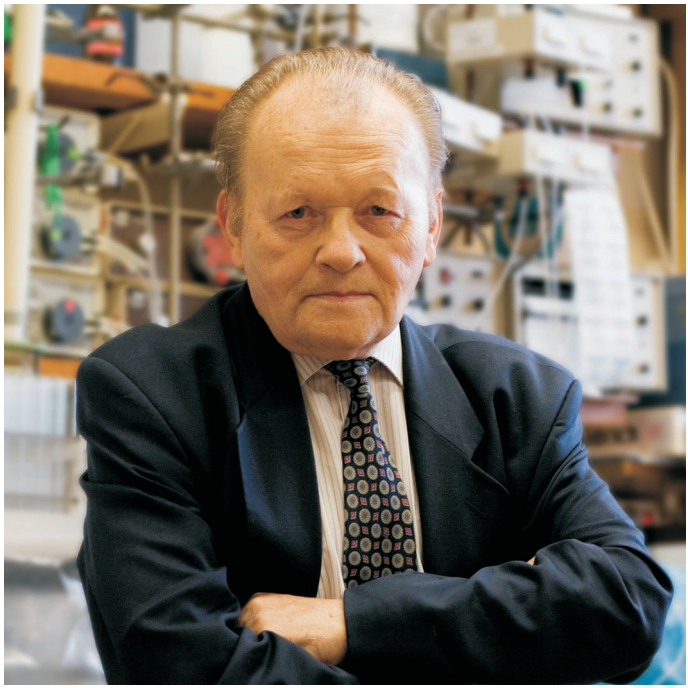
Professor Antonín Holý – 70th birthday



Professor Antonín Holý was born on September 1, 1936 in Prague (Czechoslovakia). He graduated in organic chemistry from the Charles University in Prague in 1959. In 1963 he obtained his Ph.D. degree at the Institute of Organic Chemistry and Biochemistry of the Czechoslovak Academy of Sciences under the supervision of Dr. Zdeněk Arnold for his work in the field of Vilsmeier–Haack–Arnold formylation reactions. Since then he has stayed at the Institute as staff scientist in the group of nucleic acid chemistry. He became Head of the nucleic acid chemistry group in 1983 and Head of the Department of Bioorganic Chemistry in 1987. During the period 1994–2002 he served as Director of the Institute.

During his extraordinarily successful career he has published over 550 scientific papers, out of which 264 were published in the journal Collection of Czechoslovak Chemical Communications, and a number of book chapters. He has always focused on the practical aspects and applications of his research and has filed over 60 patents and patent applications. His work has been honored by a number of prestigious prizes, including the Czechoslovak State Prize in 1986, the Descartes Prize of the EU in 2001, the Czech State

Medal "Pour merit" in 2002, the "De Scientia et Humanitate Optime Meritis" (supreme medal of the Academy of Sciences of the Czech Republic) and the "Prix Bohemia" for scientific achievements in 2004, and several honoris causa doctorates.

For quite a long time at the beginning of his independent career he was forbidden to supervise students due to political reasons and worked alone with the help of just one technician. Only from the 80's he was allowed to slowly build a small group, and from the 90's he has been able to supervise multiple Ph.D. and MS students and build up his group to its current size of ca 6 staff scientists and ca. 12 students. In the 90's he also began to give lecture courses at Czech universities and was promoted to full professor in 2005 at the Palacký University in Olomouc.

At the beginning of his independent career he dealt with the synthesis of di- and triribonucleotides from 2',3'-cyclic phosphates both by chemical and enzymatic methods. Later on, enzymes of nucleic acids metabolism attracted his attention, and he began to design and synthesize specific metabolically stable inhibitors (antimetabolites) by modification of nucleosides both at the heterocyclic base and on the sugar moiety. His pioneering studies on L-nucleosides were underrated in the 70's but, later on, this class of compounds was "rediscovered" as potent inhibitors of hepatitis B virus. During his systematic study of simplified analogues of nucleosides he entered his fruitful collaboration with a virologist, Prof. E. De Clercq, who studied the antiviral activity of his compounds. Together they discovered broad spectrum antiviral activity of 9-(2,3-dihydroxypropyl)adenine (DHPA), which was later found to inhibit SAH hydrolase and was developed and marketed as Duviragel®, a gel against herpes labialis. Several other antiviral acyclic nucleosides have followed but have not found clinical applications. However, by introduction of a non-hydrolysable phosphonomethyl ether moiety to the structure of DHPA, a novel class of antivirals, acyclic nucleoside phosphonates, was discovered at the beginning of the 80's. Systematic studies of modifications of the heterocyclic, hydroxyalkyl, and phosphonate parts were performed, and several drug candidates have been licenced and developed by Gilead Sciences. So far, three drugs, Vistide® (used for treatment of retinitis in AIDS patients but potentially applicable for treatment of smallpox), Viread® (used for treatment of HIV) and Hepsera® (for treatment of hepatitis B), have been approved and are currently in clinical use. Quite recently, another important type of so-called "open-ring analogues of acyclic nucleoside phosphonates" was discovered and is a subject of his current extensive investigation.

Throughout his career, Professor Holý has been a perfect example of true multi- and interdisciplinary research. He profited from his excellent organic synthesis background, but his strong affinity to biochemistry, biology, and medicine has resulted in a number of applications and fruitful collaborations. He has always been very keen on studying the mechanisms of action of his compounds, and such knowledge has helped him in the design and synthesis of further generations of active compounds. He has never trusted computational design or combinatorial approach too much; he relied on his extensive multidisciplinary knowledge and on his "nose for biological activity" that proved to be more successful than any fancy modern approaches. Most of all, however, he relied on very hard work. Even at the beginning of his career without coworkers and despite little (if any) support from the superiors, he was able to produce an enormous amount of excellent work.

He has become a leading figure in medicinal chemistry of nucleic acid components, and his work has significantly influenced the research both in academia and in pharmaceutical industry. He personally has never cared too much about the citation impact of his work (though over 9500 citations of his works since 1980 can be found on Web of Science) or about receiving prizes but he is truly pleased and satisfied by clinical applications of his compounds that help to cure patients suffering life-threatening diseases.

Even at his mature age of 70, Professor Holý is running a big and very active group of young scientists and students producing first-class research, still working himself at the bench, and publishing over 20 papers a year. These special issues of CCCC contain papers from his colleagues and friends who wish him all the best and many more and successful years.

Michal Hocek
Editor-in-Chief