HETEROCYCLES, Vol. 103, No. 1, 2021, pp. 6 - 10. © 2021 The Japan Institute of Heterocyclic Chemistry
DOI: 10.3987/COM-20-S(K)Foreword_2

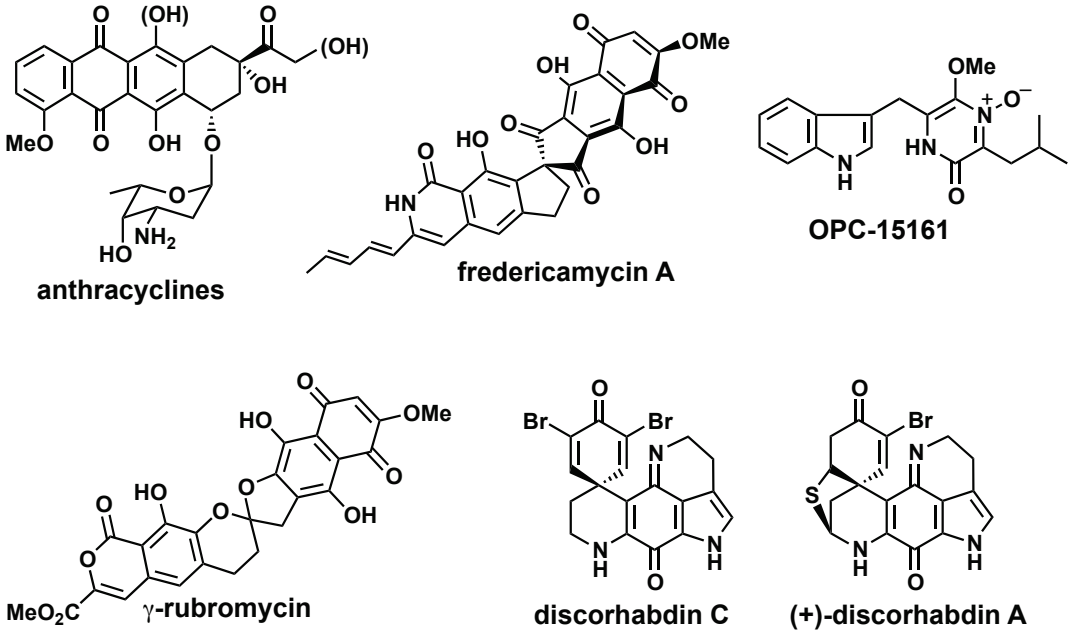
PREFACE TO HETEROCYCLES ISSUE HONORING THE 77TH BIRTHDAY OF PROFESSOR DR. YASUYUKI KITA

It is my greatest pleasure and honor to introduce this special issue of HETEROCYCLES in celebration of the 77th Birth Anniversary of Professor Yasuyuki Kita, Emeritus Professor of Osaka University.

Professor Kita was born in March 1945, Osaka, Japan. In 1972, he received his Ph.D. from Osaka University under the direct supervision of Professor Yasuyuki Tamura. Thereafter, he became Assistant Professor at the Faculty of Pharmaceutical Sciences of Osaka University. From 1975 – 1977, he studied as a postdoctoral fellow with Professor George Büchi at MIT; in 1983, he was promoted to Associate Professor and then to Full Professor at Osaka University in 1992. In 2008, he retired and was awarded Emeritus Professor from Osaka University. In the same year, he became the first Dean of the newly established Faculty of Pharmaceutical Sciences at Ritsumeikan University. From 2015 – 2018, he held Vice-President of the Research Organization of Science and Technology; in 2018, he became an Invited Research Professor and Director of Research Center for Drug Discovery and Pharmaceutical Development Science of Ritsumeikan University and has since occupied this position. He has been serving as a member of Science Council Japan since 2006 and an Honorary Advisor to the Editorial Board of HETEROCYCLES since 1999 including Editorial Boards of several other scientific journals.

Professor Kita has a wide range of research interests in synthetic organic chemistry and medicinal chemistry; his contributions to the chemistry of ketene acetals and hypervalent iodine reagents are ever emphasized. He is also a pioneer in the field of metal-free aryl coupling reactions. Notably, he had made great advances in the total synthesis of some biologically active natural products, characterized by the first total synthesis of anthracyclines, fredericamycin A, γ-rubromycin, and discorhabdins C and A, and their derivatives which are expected to serve as candidates of new types of antitumor drugs. Professor Kita has published more than 500 original papers and 70 review articles.

With these brilliant research achievements, he has received many awards from a variety of scientific societies; the Pharmaceutical Society of Japan (PSJ) Award for Young Scientists (1986), the PSJ Award for Divisional Scientific Contribution (1997), the PSJ Award (2002), the Society of Iodine Science Award (2007), and the E. C. Taylor Senior Award from International Society of Heterocyclic Chemistry (2017).



My encounter with Professor Kita dates back to April 1981, at which time I had just joined Professor Yasumitsu Tamura's Lab for my graduate research. When I met Professor Kita, he was Assistant Professor of the group. He had a tamed gray hair; smoked tobacco in a pipe; and he always looked regal in bearing, therefore, he barely seemed to be in his mid-thirties. I shared intimate moments with Professor Kita in the laboratory each day for 25 years before I left for the University of Shizuoka. During that time, we achieved total synthesis of a range of biologically active compounds, such as 11-deoxydaunomycin, fredericamycin A, γ-rubromycin, and OPC-15161, most of which were their first total syntheses. Among them, the total synthesis of fredericamycin A took more than 10 years. However, the problems we encountered in these projects led to developing our original reactions and reagents, including ethoxyvinyl esters, lipase-catalyzed asymmetric synthesis, benzyne reactions, etc. Some of my current researches have their roots from those days with Professor Kita.

Writing this preface reminds me of my younger days as a student of Professor Kita. Each day, he would come to my bench two or three times to ask, "how is that reaction going on, Akai-kun?" Verily, he has been very passionate and aggressive on his students' researches and also very particular about his own ideas; for example, he insisted on applying *O*-acyl ketene acetals to the Pummerer reactions until we finally discovered unique reactions that had never been carried out by traditional acylating reagents. This led us to develop a new research area called the aromatic Pummerer-type reactions. Looking back, I learned the philosophy and ways of research from Professor Kita during his golden age, when he pursued the possibilities of the reactions and reagents he had invented and applied them to the total synthesis of natural products with complex skeletons.

In spite of his unbending demand for professional and academic growth, Professor Kita's attributes were a charm that allured students to him; I am no exception. Every year, many students entered the Kita Group and proceeded to the doctoral course, and his laboratory was always lively and bustling. Professor Kita's attitude of thinking from a broad perspective, having a unique and solid vision for the future, and implementing them with conviction must have been admired by the students; hence, it is evident that many of his students got positions in academia – 35 are active in academia, of which 18 are full Professors. Recently, whenever I meet Professor Kita, he talks about the progresses and performances of his students with great joy. This shows that he has made a great success not only as a researcher but also as a mentor.

I admired his dandy-like manner of dressing, even more, his uniquely designed splendid office full of pictures of him with famous professors; it was always saturated with classical music playing in the background and properly organized bookshelves with books and files smartly arranged. He has occasionally made booklets of his achievements and event photos, which he distributed to his friends, colleagues, and students including me — I often admire his good sense of art. With such diverse talents, Professor Kita is both dynamic, sensitive, and heartfelt not only as a researcher but also as a human being. His insights and presence are overwhelmingly captivating and enriching.

One of my very recent memories with Professor Kita is the 27th International Society of Heterocyclic Chemistry Congress that he and I co-organized in September 2019, Kyoto, Japan. It took us three years to prepare for this six-day international congress with more than 800 participants from Japan and abroad. I once again spent many days working very closely with Professor Kita for the preparation and management, such as procuring funds and selecting invited speakers. Fortunately, we had the strong cooperation of neighboring Professors, and the congress finally ended with a great success (see the photo below).

At the banquet of the 27th International Society of Heterocyclic Chemistry Congress—
Successive congress organizers and presidents gather on the stage
[At far left]: Professor Yasuyuki Kita, Shuji Akai (me)

It is indubitably a crown of pleasure that Professor Kita is going to celebrate his 76th birthday (he becomes 77 years old according to the Japanese traditional way of counting ages, in which a baby is considered one-year old when just born) because he is still very energetic and younger in looks.

As he ages on to more years, his presence reminds us all of the greater weight and value of being selfless and supportive, and more so, adaptive to rational changes that stimulate growth and betterment of our scientific community and co-existence.
Therefore, on behalf of Professor Kita's former and current colleagues and students, I would like to express my sincere wishes for his healthy, prosperous and fruitful life with his beautiful wife, Keiko-san.

Shuji Akai
Professor
Graduate School of Pharmaceutical Sciences, Osaka University
Osaka, Japan

Shuji Akai obtained Ph.D. degree (1987) from Osaka University. After two years of postdoctoral work as a JSPS Research Fellow at Osaka University, he was appointed Assistant Professor and then Associate Professor at Osaka University. For one year (1997–1998), he was a Visiting Research Fellow with Professor Stephen L. Buchwald at MIT. He was promoted to a Full Professor at University of Shizuoka in 2005 and came back to Osaka University as a Full Professor in 2013. He received the Inoue Research Award for Young Scientists (1987), the Pharmaceutical Society of Japan Award for Divisional Scientific Promotions (2003), and the Japanese Society for Process Chemistry Awards for Excellence (2005 and 2011). His current research interests are in the area of synthetic organic chemistry, including chemoenzymatic synthesis, synthesis of bioactive naturally

occurring and artificial molecules, benzyne chemistry, fluorine chemistry, and medicinal chemistry.