

Professor Karsten Krohn

A Tribute



This special issue of Arkivoc is to celebrate the 60th birthday of Karsten Krohn (20. April 1944)

Karsten Krohn was born in Hademarschen, situated in the northern province of Schleswig-Holstein, Germany, where he also received his basic education. He signed up as a student at the University of Kiel in 1963 and graduated from that university in 1968. Here, he also obtained his PhD in 1971 under the supervision of Prof. A. Mondon with a thesis on the isolation and synthesis of alkaloids (Narciclasin **1**) from daffodils.¹ In the following three years he spent his postdoctoral time first with Prof. Mondon and then with Prof. Winterfeldt at the University of Hannover on a Deutsche Forschungsgemeinschaft (DFG) stipend where he worked on the synthesis of Camptothecin **2**.² He then moved to the University of Hamburg where his independent scientific work started. He began his work on quinone antibiotics (in particular the anthracyclines) and achieved his habilitation in 1979. Subsequently, in 1981 he was nominated associate professor at the Technical University of Braunschweig. In 1991 he was offered the chair in organic chemistry as successor to Wolfgang Sucrow at the University of Paderborn. After appointment as a full professor, he moved there and has since guided a very large and lively group. In addition, in 1984 he was the Margaret L. and Harlan L. Goering Visiting Professor in Organic Chemistry at the University of Wisconsin, Madison, USA; in 1996 he was a visiting professor in Nancy, France and in 2001, he was a visiting professor at the University of Santo Tomas, Manila, Philippines. He received numerous awards, most notably the Karl-Winnacker prize in 1982. He was named a honorary member of the Hungarian Humboldt Society and in 2004 a fellow of the "Japan Society for the Promotion of Science". He serves on the

editorial boards of scientific journals as well as the faculty boards of the University of Paderborn, where he was Dean of the faculty from 1994- 97. He was chairman of the “International Symposium on the Chemical Synthesis of Antibiotics and related Microbial Products” in 1992. He has authored more than 230 original publications as well as reviews, books and patents. Some of his time is also occupied by refereeing work for numerous chemical journals and he is concerned with progress of the Houben-Weyl (Science of Synthesis) volume on anthraquinones. In conclusion, his authorship of the well known reference manager Biblio should also be mentioned.

Research interests

Karsten Krohn’s main scientific concern is with biological activity and in this respect his interests range over mechanistic and synthetic organic chemistry.

In particular he is interested in the following topics:

1. Synthesis of natural products, quinone-antibiotics (anthracyclines **3**, angucyclines **4**, anthrapyranones **5**, structure-activity relationships, biotransformations of precursors **6**, biomimetic synthesis) and of other pharmacologically interesting compounds (NAD analogues).³⁻⁶
2. Chemistry of sugars (*C*-Glycosides, *O*-Glycosides); use of carbohydrates in natural product chemistry (**7**)⁷, conversion of sugars to carbocycles (**8**, **9**)⁸ and other starting materials for the synthesis of macrolides and other biologically important molecules (renewable raw materials).
3. New methodology: transition-metal catalyzed oxidations and reductions (new ways for Meerwein-Ponndorf-Verley reactions); application to alcohols and phenols, oxidative dearomatization of phenolic systems to α -ketols and application of these methods in natural product synthesis.
4. Isolation of natural products: biologically active metabolites from phytopathogenic and endophytic fungi of terrestrial and marine origin (**10**, **11**).^{9,10} In cooperation the chemical constituents of medicinal plant extracts from Africa and Asia are also investigated.

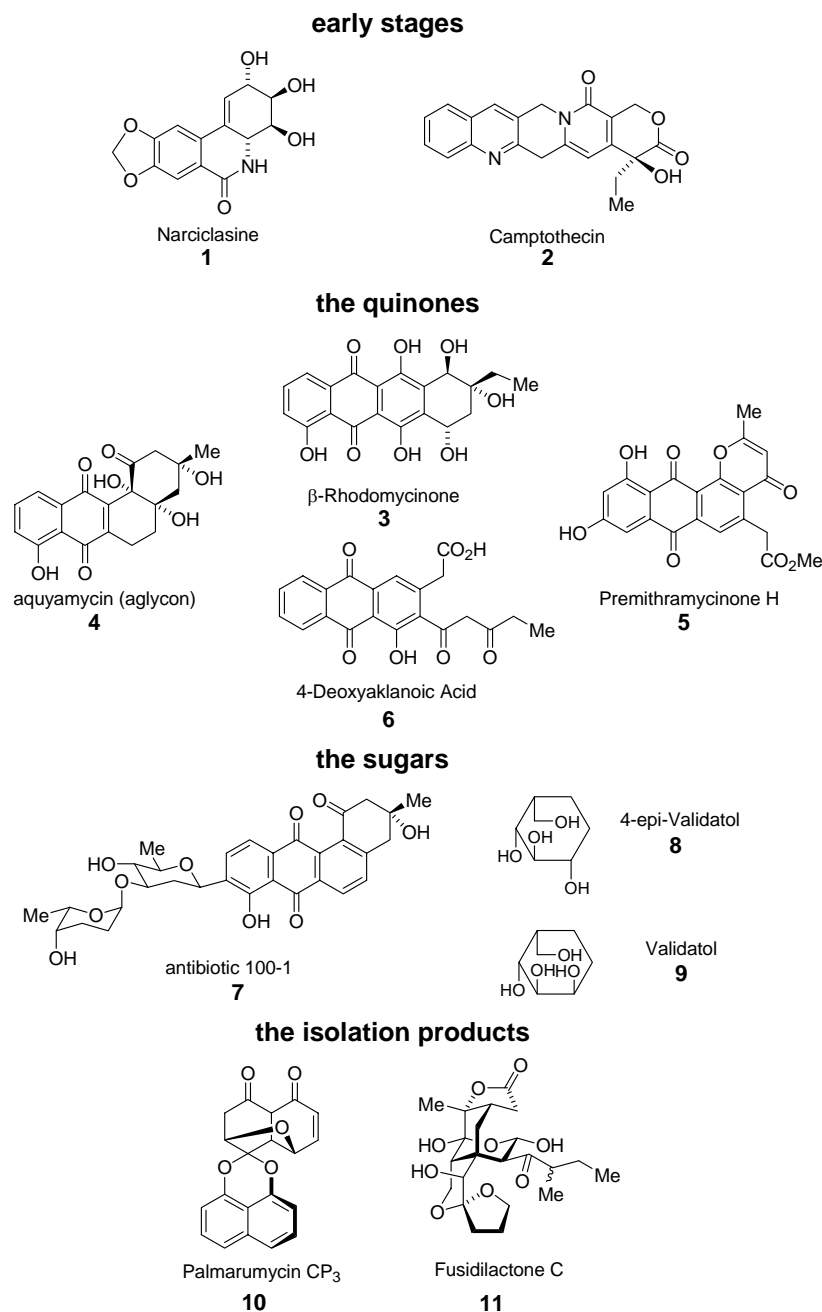


Figure 1. Collection of some of the natural products synthesized and isolated in the Krohn lab.

Selected publications

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4. Krohn, K.; Frese, P.; Flörke, U. Biomimetic Synthesis of the Racemic Angucyclinones of the Aquayamycin and WP 3688-2 Types. *Chem. Eur. J.* **2000**, *6*, 3887.
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