

Prof. Dr. Sarah E. O'Connor

The John Innes Centre, Department of Biological Chemistry,
Norwich, UK

will give a presentation entitled

„Alkaloid Biosynthesis in Plants“

Tuesday, January 27, 2015, at 17:00h s.t.
in Blg C4 3, Kleiner Hörsaal der Anorganischen Chemie

Host: Prof. Dr. Rolf Müller

There is opportunity to talk with the speaker before the talk.
There will be a follow-up session (Nachsitzung).

For details and for making appointments please contact:
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Guests are welcome!

Summary

Plants are— arguably— the world's best chemists. All plants synthesise thousands of complicated molecules that they use to protect themselves from predators, attract pollinators and communicate with other plants. Thousands of years ago, humans realised that many of these plant-derived molecules also have a powerful impact on human health and well-being. Advances in genomic and transcriptomic sequencing have rapidly advanced our understanding of the complex metabolic pathways that produce these high-value chemicals. Here we show how transcriptomic and genomic data can be used to understand the secondary metabolism of Madagascar Periwinkle (*Catharanthus roseus*), a medicinal plant that produces Oncovin and Velbe, compounds that are used to treat a variety of cancers. Many enzymatic transformations are utilized in the biosynthesis of the monoterpene indole alkaloids, this group of structurally diverse natural products. The discovery, functional characterization and mechanistic study of several enzymes involved in the biosynthesis of the monoterpene indole alkaloids in *C. roseus* will be discussed. Also discussed are the implications of this work in the metabolic engineering of natural products.

CV

Sarah O'Connor performed her graduate work on protein glycosylation with Professor Barbara Imperiali at both Caltech and the Massachusetts Institute of Technology, and received her PhD from MIT in 2001. She was an Irving Sigal post-doctoral fellow in the laboratory of Professor Chris Walsh at Harvard Medical School from 2001-2003, where she studied the biosynthesis of microbial-derived natural products. After her post-doctoral work, she became assistant and then associate professor of Chemistry at MIT. In 2011 she moved her research group to the John Innes Centre where she is a Project Leader in the Department of Biological Chemistry. She is also an honorary professor in the School of Chemistry at the University of East Anglia.