About our guest
Sarah Barry, PhD
Reader in Chemical Biology
King's College London

It's all in your approach—biosynthesis of natural products

Season 2, Episode 10

Episode notes

We're joined in this episode by Dr. Sarah Barry, Reader in Chemical Biology at King's College London. Sarah started with an interest in biochemistry, went into organic chemistry because it was more concrete, and now applies her chemist's approach to understanding and manipulating biosynthesis of natural products for important areas of research, including antibiotics.

This insightful conversation gives a peek into the mind of a chemical biologist's way of thinking about and approaching challenges that span biology and chemistry. We learn about the historical challenges of discovering and synthesizing natural products, but we then hear about how innovations in molecular biology are allowing researchers to revisit this field with a new approach. Sarah and her team identify and manipulate genes, express and purify proteins in the lab, and then characterize those enzymes for their abilities to drive biocatalytic transformations that are beyond challenging using traditional organic or inorganic chemistry approaches. Our conversation spans from the details of the molecular biology methods used, to the high-level applications being explored in this research, all with an ease that only someone this interdisciplinary could do.

Sarah's recent publications

1. Ding, Y. Perez-Ortiz, G. Peate J., Barry S. M. Redesigning Enzymes for Biocatalysis: Exploiting Structural Understanding for Improved Selectivity Front. Mol. Biosci. 2022, 9, 90825.
2. Perez-Ortiz, G. Sidda J., DeLosSantos, E., Hubert, C. B., Barry S. M. *In vitro* Elucidation of the Crucial but Complex Oxidative Tailoring Steps in Rufomycin Biosynthesis Enable One Pot Conversion of Rufomycin B to Rufomycin. C Chem Commun., 2021, 57, 11795 – 11798.

> "...Molecular biology is so important for investigating natural products, biosynthesis, and also enzymology. And the change, I would say, in the last 20 years has been phenomenal. It's completely transformed the fields."

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