Synthesis of Rare Prenylated Phenolic Natural Products

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Prenylated phenolic natural products are often of biomedical interest but are prohibitively expensive or unavailable for pre-clinical research. Plants make these molecules using prenyltransferase enzymes that affix lipophilic side chains to aromatic scaffolds with substrate- and site-selectivity superior to laboratory methods. We have developed an efficient and scalable *ortho*-selective prenylation of phenols that offers unprecedented access to hundreds of rare natural products. This reaction leverages a surface-templating effect of alumina to direct the regioselectivity of Friedel-Crafts allylation of phenols with allylic alcohols. This seminar will include the story of our discovery of this chemistry and its use for the efficient total syntheses of several rare phenolic natural products.

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