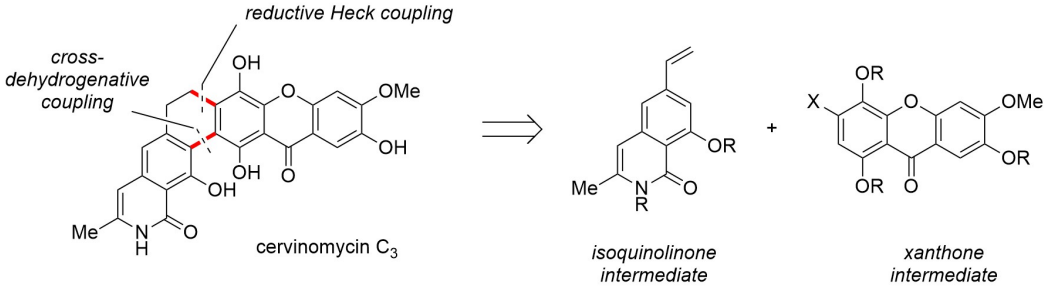
Studies Towards the Total Synthesis of Cervinomycin Natural Products

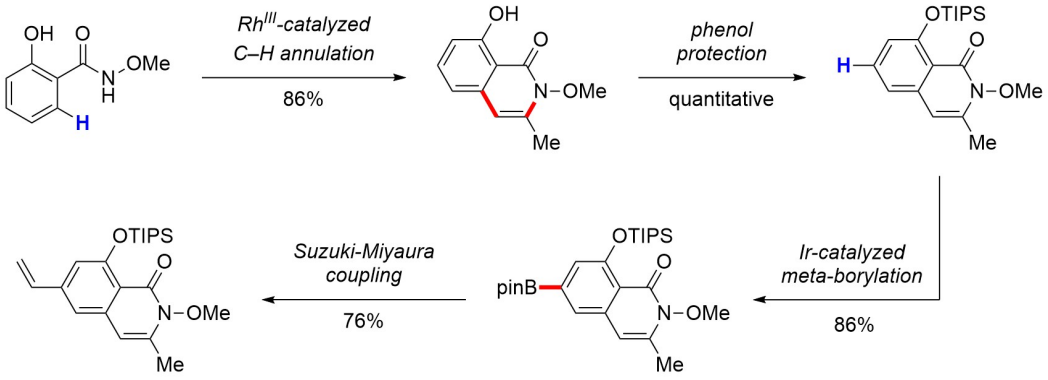
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Cervinomycins are aromatic polyketides which exhibit antibiotic activity against gram-positive bacteria and high cytotoxicity. [1] Herein we report our studies towards the total synthesis of these natural products, in which multiple C–H functionalization steps allow for a convergent route. Retrosynthetically, we aim to construct cervinomycins from functionalized xanthone and isoquinolinone fragments, which will be joined through a reductive Heck coupling and a cross-dehydrogenative coupling. [2]



The isoquinolinone fragment was accessed in 5 steps from salicylic acid, using two strategic C–H activation reactions. A rhodium-catalyzed C–H annulation of 2-hydroxy-*N*-methoxybenzamide with chloroacetone gave the corresponding isoquinolinone product. [3] After protection of the phenol, an iridium-catalyzed C–H borylation furnished the meta-borylated isoquinolinone as a single isomer. [4] Suzuki-Miyaura coupling with vinyl tosylate gave the corresponding 6-vinylisoquinolinone intermediate. Currently, we are examining different C–H activation-based routes towards the xanthone fragment.



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