Bioinspired acid-catalyzed C2 prenylation of indole derivatives

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Biomimetic catalysis is an emerging concept that emulates key features of enzymatic process. Prenylation is a ubiquitous process found in almost all living organisms. Inspired by the enzymatic mechanism, researchers developed a selective C2 prenylation of indoles via chemical catalysis, which can be applied to late-stage diversification of tryptophan-based peptides and concise synthesis of tryprostatin B. Prof. CHEN stated: "Our work represents an old reaction for new use. For anyone engaged in chemistry, it is difficult to imagine that tryptophol and tryptophan-based peptides can undergo Friedel-Crafts reaction with high selectivity, because of the presence of diverse free NH and OH. More importantly, this strategy can greatly shorten the synthesis of indole alkaloid tryprostatin B."


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