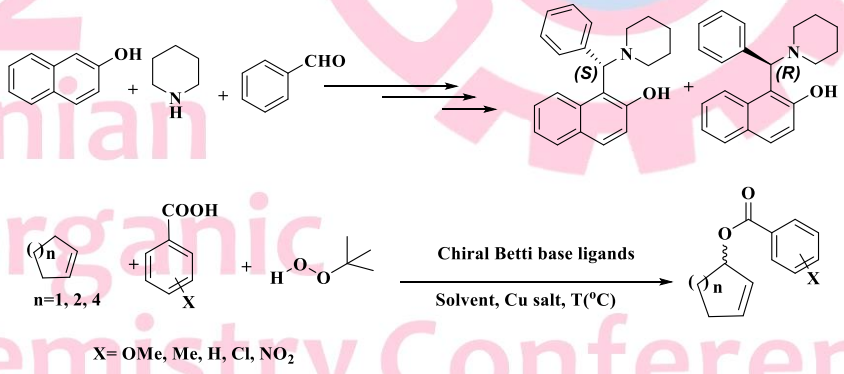
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Synthesis of chiral (*R*)- and (*S*)-Betti bases and investigation the copper complexes of them in asymmetric allylic oxidation of olefins

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Betti bases are pharmaceutically and synthetically important scaffolds that are readily synthesized through a Mannich-type three-component condensation, known as the Betti reaction, from β-naphthol, aldehyde, and 1° or 2° amine [1]. The most important application of chiral betti bases is their application in asymmetric synthesis, either as chiral ligands or chiral auxiliaries [2]. The Kharasch-Sosnovsky reaction, which involves the copper-catalyzed allylic oxidation of olefins with peresters, is a highly effective method for performing direct C-H bond functionalization at the allylic position of olefins. The asymmetric Kharasch–Sosnovsky reaction of cyclic olefins has been developed with high enantioselectivities [1, 3]. Racemic aminonaphthol 1-(α-N-piperidylbenzyl)-2-naphthol is obtained from simple condensation of benzaldehyde, 2-naphthol and piperidine in ethanol under refluxing conditions. The racemic aminonaphthol has been resolved by diastereomeric recrystallization method using *R*-(+)-1,1′-bi-2-naphthol and boric acid. Subsequently, the copper complexes of these chiral ligands were investigated for asymmetric allylic C-H bond oxidation of olefins, resulting in high yields of chiral allylic esters with moderate enantioselectivity (Scheme 1).



Scheme 1: Asymmetric allylic oxidation of olefins in the presence of chiral betti base ligands

Keyword: Chiral Betti base, *R*-(+)-1,1′-bi-2-naphthol, Diastereomeric recrystallization, Chiral allylic ester

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