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A simple amino-amide catalyzed enantioselective crossed aldol reaction of ketones with aromatic aldehydes

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A new type of amino amide organocatalysts A were designed and synthesized from commercially available amino acids in easy steps and examined their catalytic activity in enantioselective crossed aldol reaction of various cyclic and acyclic ketones with aromatic aldehydes. The newly designed catalysts displayed excellent catalytic activity to provide the corresponding chiral anti-aldol products with good to excellent chemical yields, diastereoselectivities and enantioselectivities (up to 99 % yield, up to anti: syn = 99: 1, 97 % ee) respectively with low-loading catalyst (5 mol%) without addition of any co-catalysts in ecofriendly aqueous medium, which is still challenging task in asymmetric organic catalysis (Scheme 1). The detail of this work will be reported.

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