

Monday 29 March 2010

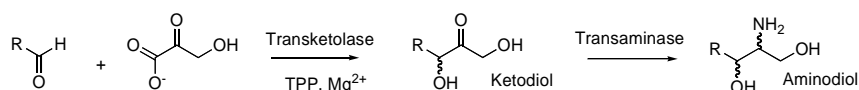
11.00 am - Room 531

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Biocatalytic Synthesis of Ketodiols and Aminodiols

α,α -Dihydroxyketones are an important motif that can be aminated to the aminodiol functionality (Figure 1), present in many natural and synthetic biologically active molecules including antibiotics, alkaloids and amino sugars. Though methodology exists for the asymmetric synthesis of aminodiols, the methods are generally step intensive, have poor regio- or stereoselectivities, and/or consume expensive catalysts or chiral auxiliaries. We have been working towards the engineering and directed evolution of novel transketolase (TK) (E.C. 2.2.1.1) mutants capable of converting a multitude of aliphatic aldehyde substrates into chiral α,α -dihydroxyketones and their subsequent transformation into aminodiols using transaminases (TAm) (Scheme 1). The use of tools to identify active TK mutants and establish ees will be described together with use of an ω -transaminase to convert the α,α -dihydroxyketones to the corresponding amines. Substrate preferences and enantioselectivities achieved will be presented. This work is part of BiCE which in parallel is establishing tools for the rapid characterisation and scale-up of these bioconversions.



Scheme 1. Biocatalytic Synthesis of Aminodiols

ALL WELCOME

Contact Details

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