

Chiral Alcohols : From Lab Scale to Kilogram Scale

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Using the enantioselective reduction of acetophenone to (S)-phenylethanol catalysed by an alcohol dehydrogenase from *Thermoanaerobacter* sp. (ADH T) as an example (Fig. 1) the successful transfer of the production of chiral alcohols from lab scale to kilogram scale will be demonstrated.

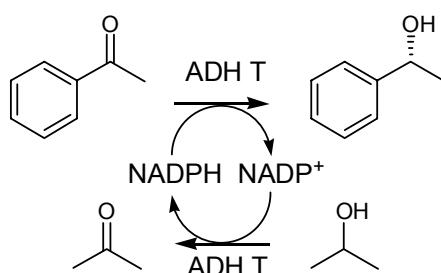


Figure 1. Substrate coupled reduction of acetophenone to (S)-phenylethanol

In this process cofactor regeneration is carried out using isopropanole, which is oxidised to acetone by the same enzyme. Kinetic investigations were carried out, as well as production reactions in batch-, repetitive-batch and continuous mode (enzyme membrane reactor). The reaction is now performed commercially on a kilogram scale.

Reference

Z. Findrik, Đ. Vasić-Rački, S. Lütz, T. Dausman, C. Wandrey, *Biotechnology Letters*, 2005, accepted