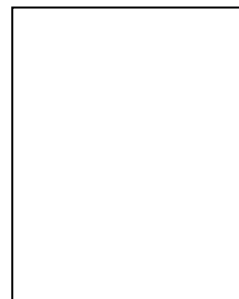


Process development of enantioselective 3-oxo ester reduction by baker's yeast

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Description

Important requirements for an efficient, and economically and technically feasible industrial baker's yeast reduction can be summarized to be:

- high enantiomeric excess of the product,
- high conversion yield,
- high product concentration,
- high volumetric productivity,
- easy product recovery,
- good reproducibility,
- high stability and re-cycling possibilities of the biocatalyst,
- low concentration of side products,
- low requirements of electron donor, oxygen and other compounds,
- low costs for the additional compounds,
- low investments and maintenance costs.



To develop a reduction process meeting the aforementioned requirements, the baker's yeast reduction of a 3-oxo ester to its corresponding 3-hydroxy ester, namely the reduction of ethyl 3-oxobutanoate to ethyl (*S*)-3-hydroxybutanoate, was studied as the model reaction

Dissertation

I. Chin-Joe, Process development of enantioselective 3-oxo ester reduction by baker's yeast. PhD thesis, Delft University of Technology, 2001. <http://resolver.tudelft.nl/uuid:048eca11-176c-48ec-9f82-09936aaae19c>

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2. I. Chin-Joe, A.J.J. Straathof, J.T. Pronk, J.A. Jongejan and J.J. Heijnen, Influence of ethanol and glucose supply rate on the rate and enantioselectivity of 3-oxo ester reduction by baker's yeast, *Biotechnol. Bioeng.* **75** (2001) 29-38.

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