

Institute of Chemical Engineering

Adres artykułu: <https://iich.gliwice.pl/en/article/lipase-immobilized-on-mcfs-as-biocatalysts-for-kinetic-and-dynamic-kinetic-resolution-of-sec-alcohols-1>

Lipase immobilized on MCFs as biocatalysts for kinetic and dynamic kinetic resolution of sec-alcohols

Publication date:	20.04.2021
Publication title:	Lipase immobilized on MCFs as biocatalysts for kinetic and dynamic kinetic resolution of sec-alcohols
Authors:	Katarzyna Maresz, Andrzej B. Jarzębski
Journal information:	Catalysts

Dynamic kinetic resolution (DKR) is one of the most attractive methods for enantioselective synthesis. In the reported studies, lipase B from *Candida antarctica* (CALB) immobilized on siliceous mesoporous cellular foams (MCF) functionalized with different hydrophobic groups, and two ruthenium complexes with substituted cyclopentadienyl ligands were investigated as catalysts for the chemoenzymatic DKR of (rac)-1-phenylethanol, using Novozym 435 as a benchmark biocatalyst. Studies on the (rac)-1-phenylethanol transesterification reaction showed that CALB supported on MCFs grafted with methyl groups is a promising biocatalyst and isopropenyl acetate is a preferable acylation agent. Both Ru-complexes activated by K₃PO₄ or t-BuOK, proved to be effective catalysts of the racemization reaction. The final DKR experiments using all catalysts combinations singled out, gave 96% conversion, and (R)-1-phenylethyl acetate enantiomeric excess of 98% in 8 h using K₃PO₄ activator.

Metryczka

Published by:	Marek Tańczyk
Published at:	08.05.2026 15:06
Number of views:	14