Lactones 44. Microbial lactonization of γ-ketoacids.

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Streszczenie

Enantiomerically pure γ-lactones ((+)-**4a**, (−)-**5a**, (+)-**4b**) have been obtained from the corresponding γ-ketoacids (**3a** and **3b**) by their biotransformations with the three fungal strains: *Rhodotorula glutinis* AM242, *Saccharomyces cerevisiae* AM464 and *Chaetomium* sp. KCh6670. Microbial lactonization of 3,7-dimethyl-4-oxooctanoic acid (**3a**) with *R. glutinis* AM242 afforded the (+)-(4*S*,5*R*)-*trans*-γ-lactone (**4a**) with 99% ee, while *Chaetomium* sp. KCh6670 proved to be the best biocatalyst for the bioreduction and following lactonization of γ-ketoacid (**3a**), which afforded (−)-*cis*-γ-lactone (**5a**) with 99% ee. Biotransformation of 3,7,7-trimethyl-4-oxooctanoid acid (**3b**) in the culture of *S. cerevisiae* AM464 gave the corresponding (+)-*trans*-γ-lactone (**4b**) with 99% ee. The odours of the racemic γ-lactones ((±)-**4a**, (±)-**5a**, (±)-**4b** and (±)-**5b**) and optically pure isomers ((+)-**4a**, (−)-**5a**, (+)-**4b**) were evaluated.

Słowa kluczowe

Biotransformation, microbial lactonization, γ-Ketoacids, γ-Lactones

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