

RESEARCH NOTES

表面活性剂包衣Candida rugosa脂肪酶在无溶剂下油水两相体系中催化橄榄油水解

宋宝东^a, 丁辉^a, 吴金川^a, Hayashi Y.^b, Talukder MMR^b, 王世昌^a

^a Chemical Engineering Research Center, School of Chemical Engineering and Technology, Tianjin University, Tianjin, 300072, China

^b Department of Chemistry & Chemical Engineering, Faculty of Engineering, Kanazawa University, 2-40-20 Kodatsuno, Kanazawa, 920-8667, Japan

收稿日期 修回日期 网络版发布日期 接受日期

摘要 The surfactant-coated Candida rugosa lipase was used as catalyst for hydrolysis of olive oil in two-phase system consisting of olive oil and phosphate buffer without organic solvent. For both the coated and native lipases, the optimal buffer/oil volume ratio of 1.0, aqueous pH 6.8 and reaction temperature 30°C were determined. The maximum activity of the

coated lipase was ca 1.3 times than that of the native lipase. The half-life of the coated lipase in olive oil and the native lipase in phosphate buffer was ca 9 h and 12 h, and the final residual activity was 27% and 20% of their initial values, respectively. The final substrate conversion by the coated lipase was ca 20% higher than that of the native lipase.

关键词 [Candida rugosa](#) [hydrolysis](#) [lipase](#) [olive oil](#) [solvent-free system](#) [surfactant](#)

分类号

DOI:

Surfactant-coated Candida rugosa Lipase as Catalyst for Hydrolysis of Olive Oil in Solvent-Free Two-Phase System

SONG Baodong^a, DING Hui^a, WU Jinchuan^a, Hayashi Y.^b, Talukder MMR^b, WANG Shichang^a

^a Chemical Engineering Research Center, School of Chemical Engineering and Technology, Tianjin University, Tianjin, 300072, China

^b Department of Chemistry & Chemical Engineering, Faculty of Engineering, Kanazawa University, 2-40-20 Kodatsuno, Kanazawa, 920-8667, Japan

Received Revised Online Accepted

Abstract The surfactant-coated Candida rugosa lipase was used as catalyst for hydrolysis of olive oil in two-phase system consisting of olive oil and phosphate buffer without organic solvent. For both the coated and native lipases, the optimal buffer/oil volume ratio of 1.0, aqueous pH 6.8 and reaction temperature 30°C were determined. The maximum activity of the coated lipase was ca 1.3 times than that of the native lipase. The half-life of the coated lipase in olive oil and the native lipase in phosphate buffer was ca 9 h and 12 h, and the final residual activity was 27% and 20% of their initial values, respectively. The final substrate conversion by the coated lipase was ca 20% higher than that of the native lipase.

Key words [Candida rugosa](#); [hydrolysis](#); [lipase](#); [olive oil](#); [solvent-free system](#); [surfactant](#)

通讯作者:

宋宝东 bdsong@tju.edu.cn

作者个人主页: 宋宝东^a; 丁辉^a; 吴金川^a; Hayashi Y.^b; Talukder MMR^b; 王世昌^a

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF](#) (901KB)

▶ [\[HTML全文\]](#) (0KB)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“Candida rugosa”的 相关文章](#)

▶ 本文作者相关文章

· [宋宝东a](#)

· [丁辉a](#)

· [吴金川a](#)

· [Haashi Yb](#)

· [Talukder MMRb](#)

· [王世昌a](#)