

Appendix

1. Hydrolytic activity of lipase (Lee and Rhee , 1993)

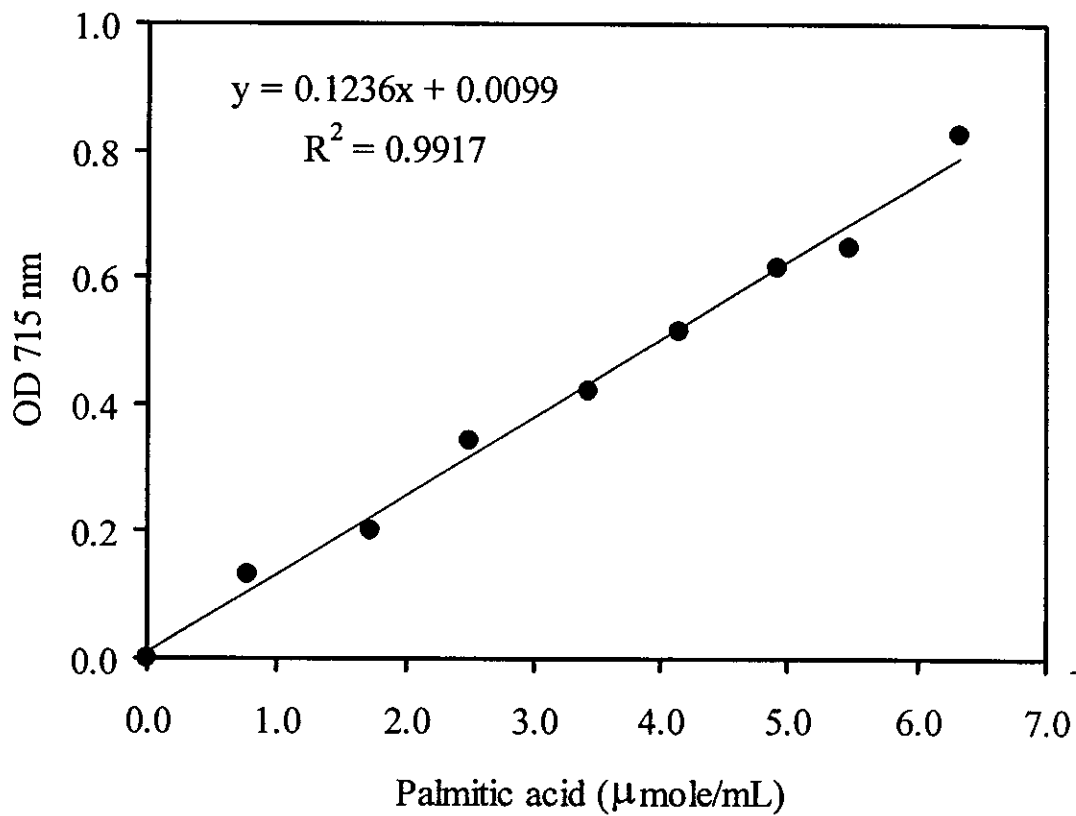
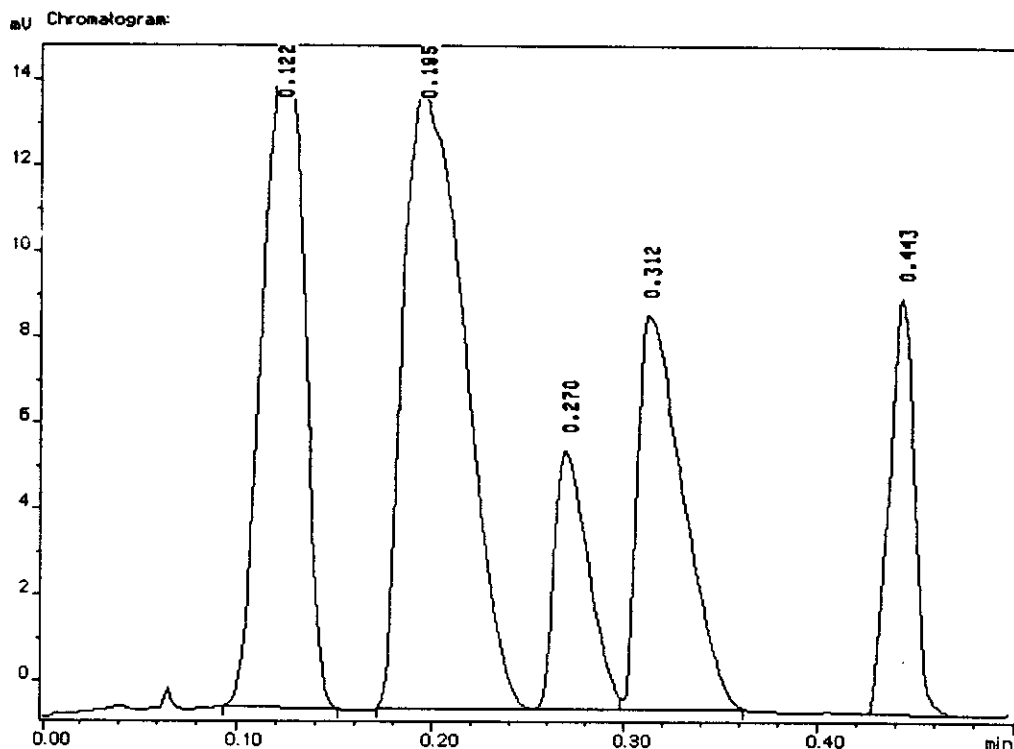


Figure 11 Standard curve of palmitic acid.

2. Determination of oil composition by TLC/FID analyzer



Peak No	Name	Ret. Time (min)	Pk. Start (min)	Pk. End (min)	Area	Height (mV)	Area %
1	Triolein	0.123	0.093	0.152	12059	15.26	26.731
2	Oleic acid	0.195	0.172	0.248	16658	14.41	36.923
3	1,3-Diolein	0.270	0.248	0.298	3913	5.99	8.674
4	1,2-Dioleoyl-rac-glycerol	0.313	0.298	0.362	7831	9.07	17.358
5	Monopalmitin	0.443	0.427	0.472	4654	9.67	10.315
					45115	54.39	100.000

Condition:

Stationary phase : CHROMAROD-SIII
 Mobile phase : benzene : chloroform : acetic acid (50:20:0.7)
 Gas flow : H₂ 160 mL/min, Air 2.0 L/min
 Scanning speed : 30 s/scan

Figure 12 TLC/FID chromatogram of standard oil compositions.

Vitae

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Education Attainment

Degree	Name of Institution	Year of Graduation
Ph.D	Biotechnology Engineering Osaka University	2003
Master	Biotechnology Engineering Osaka University	1999
Bachelor	Chemical Engineering Tohoku University	1997

Publications

- Shibasaki-Kitakawa, N., **Cheirsilp, B.**, Iwamura, K., Kushibiki, M., Kitakawa, A. and Yonemoto, T. (1998) Kinetic Model for Oligosaccharide Hydrolysis Using Suspended and Immobilized Enzymes. *Biochem. Eng. J.* 1(3): 201-209
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- Cheirsilp, B., Shimizu, H. and Shioya, S. (2001 September)** Kefiran fermentation by mixed culture of *Lactobacillus kefiranofaciens* and *Saccharomyces cerevisiae*. Annual Meeting 2001, The Society for Biotechnology, Yamanashi, Japan. (Included in docter thesis)
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- Cheirsilp, B., Shimizu, H. and Shioya, S. (2003 July)** Enhanced Kefiran Production by mixed culture of *Lactobacillus kefiranofaciens* and *Saccharomyces cerevisiae*. BioThailand Meeting 2003, Thailand. (Included in docter thesis)
- Cheirsilp, B., Hirofumi, S., Shimizu, H. and Shioya, S. (2004 July)** Model and simulation of exopolysaccharides production by bacteria in batch and fed-batch culture. The 8th Annual National Symposium on Computational Science and Engineering 2004, Thailand.
- Cheirsilp, B., Aran, H. and Shioya, S. (2004 December)** Study on enzymatic hydrolysis of sago starch. JSPS-NRCT, DOST, LIPI, VCC Joint Seminar 2004, Indonesia.
- Cheirsilp, B. (2005 March)** Study on interaction of two microorganisms in mixed culture for kefiran fermentation by model analysis. The 1st International Conference on Fermentation Technology for Value Added Agricultural Products 2005, Thailand.

Cha-roenwong, C., Kittiprechakul, A., Yeesang, C., Junthachum, S. and **Cheirsilp, B.**
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