Supplementary Materials: New Tailor-Made Alkyl-Aldehyde Bifunctional Supports for Lipase Immobilization

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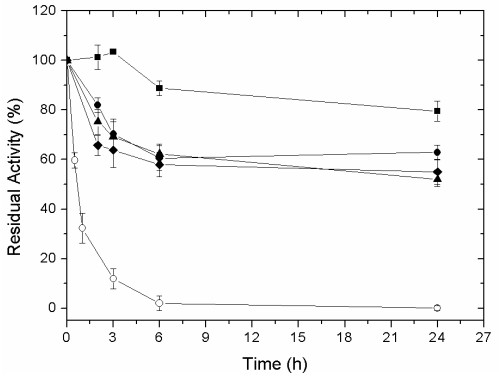
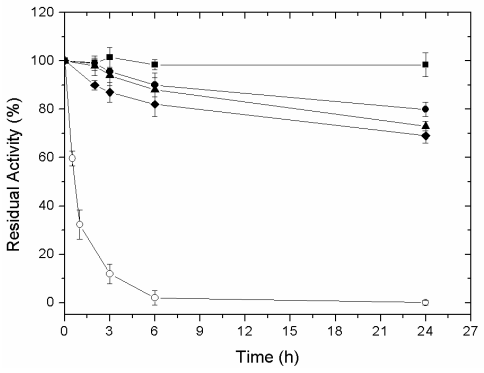
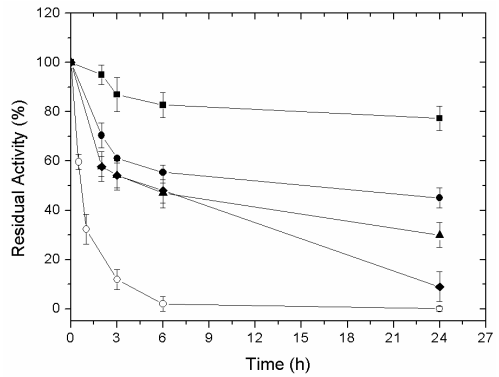


(**A**)



(**B**)



(**C**)

Figure S1. Thermal stability of different preparations of LipC12. Inactivation was performed at pH 7.0, 55 °C after incubation at different pHs for 1 h. (▪) pH 10; (●) pH 8.5; (▲) pH 7.0; (♦) pH 7.0 without aldehyde groups and (○) Soluble enzyme. (**A**) C8-aldehyde/LipC12; (**B**) C12-aldehyde/LipC12; (**C**) C18-aldehyde/LipC12. Results are expressed as the average of triplicate assays ± the standard error of the mean.

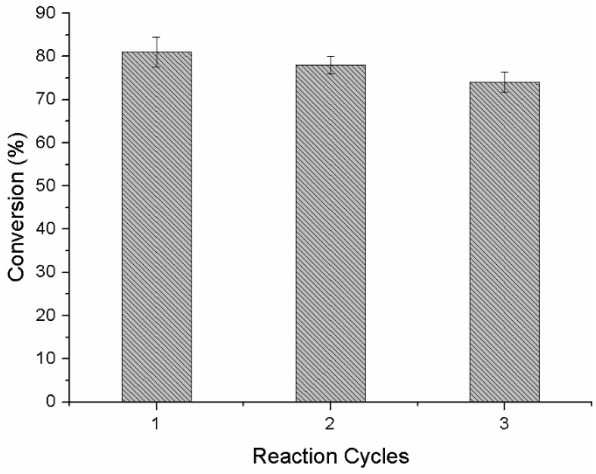


Figure S2. Hydrolysis of 3,4,6-tri-*O*-acetyl-D-glucal during successive reaction cycles. C12-aldehyde/LipC12-PEG preparation was repeatedly used to catalyze the hydrolysis of 3,4,6-tri-*O*-acetyl-D-glucal at pH 5.0, 25 and 4 °C. Results are expressed as the average of duplicate assays ± the standard error of the mean.

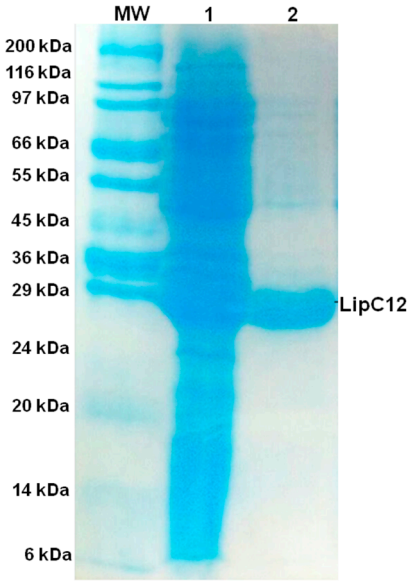


Figure S3. SDS-PAGE analysis of the lipase LipC12 purification. The lanes were loaded as follows: lane MW, protein molecular weight standards; lane 1, supernatant of the bacterial cell lysate; lane 2, eluted fractions of LipC12. Proteins were stained with Coomassie Brilliant Blue R-250.

Table S1. Summary of the purification of LipC12.

Step	Volume (mL)	Total Protein [a] (mg)	Total Activity [b] (U)	Specific Activity (U·mg^{-1})	Purification Factor	Activity Yield (%)
Crude extract	4	12.8	52	4.1	1	100
Purified extract	8	4.9	30	6.2	1.5	58

[a] Protein was determined by the Bradford method [33]; [b] One unit of activity (U) was defined as the production of 1 µmol of *p*-nitrophenol per minute, under the conditions of the assay.