Electronic Supplementary Information (ESI) for:

Candida rugosa lipase immobilization on magnetic silica aerogel nanodispersion

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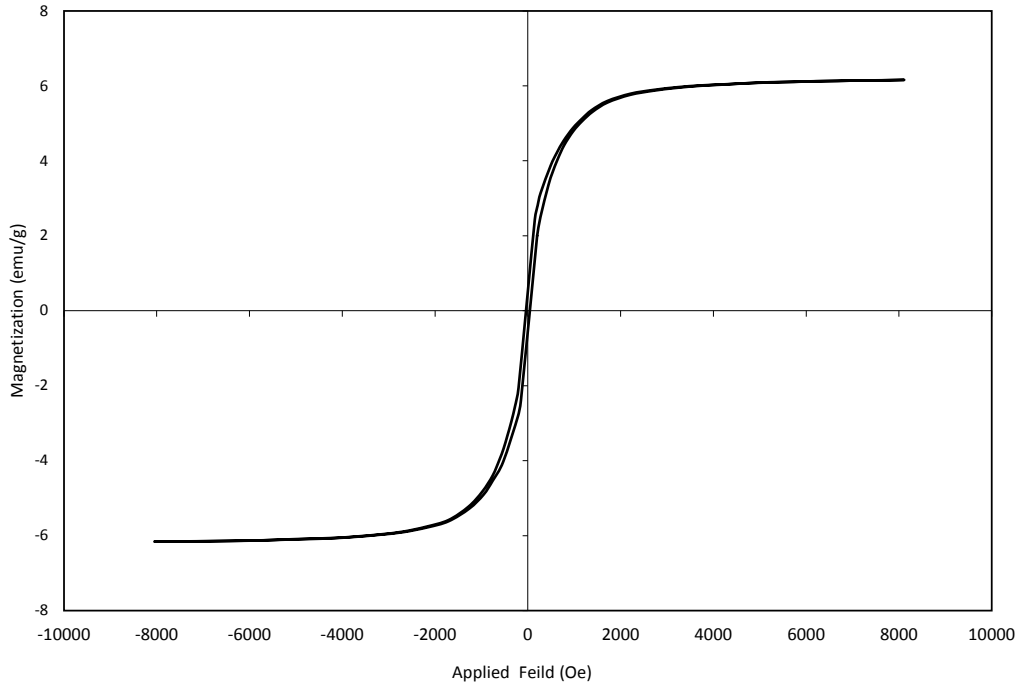

Fig. S1. Room temperature (298K) magnetization curve for silica aerogel-iron oxide nanocomposite

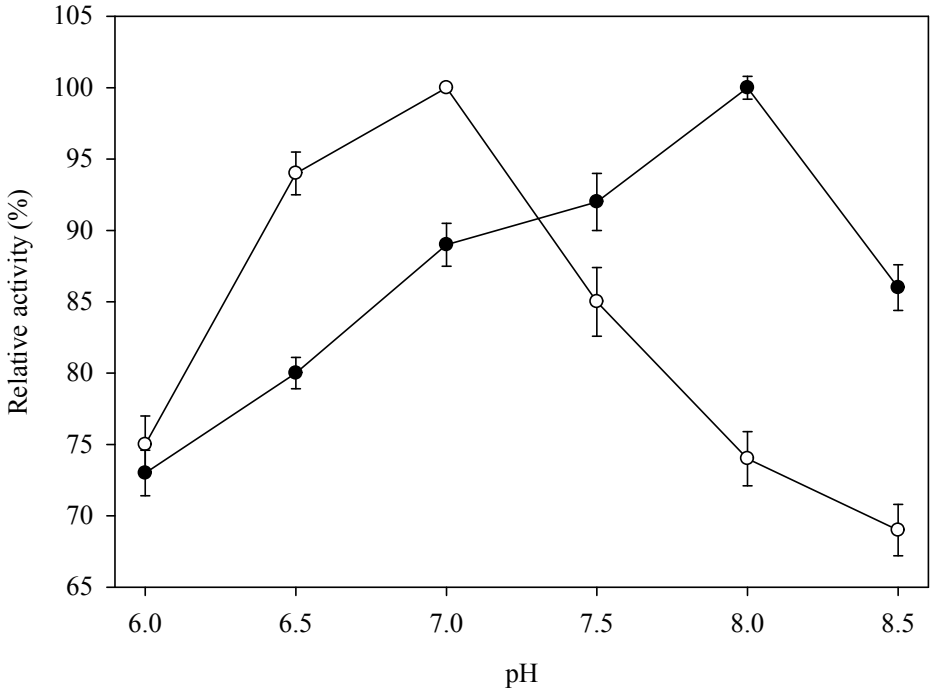

Fig. S2. Effect of pH on hydrolytic activities of the free and immobilized lipases

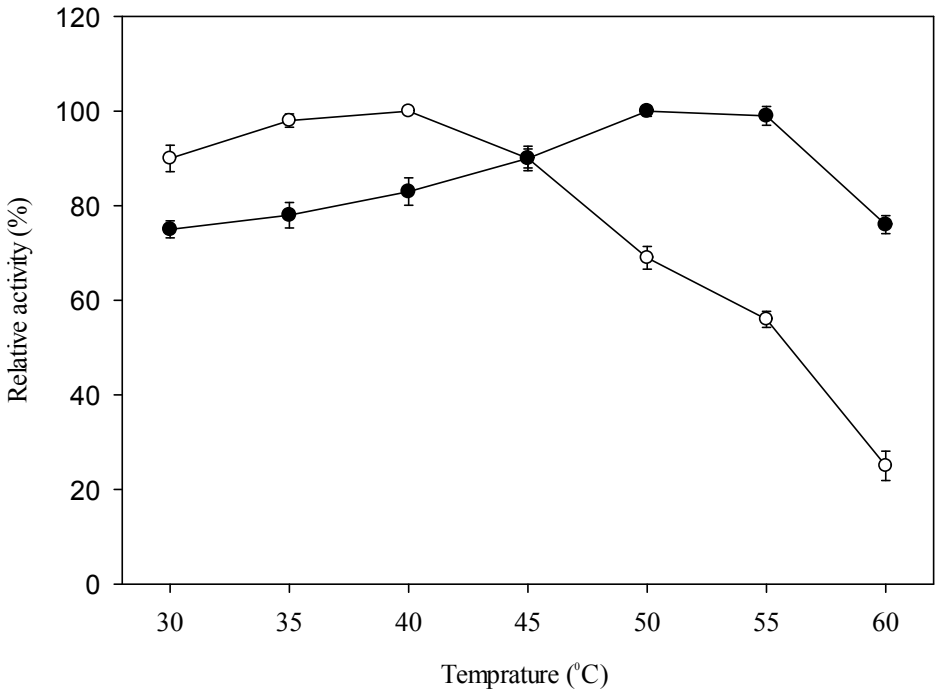

Fig. S3. Effect of temperature on hydrolytic activities of the free and immobilized lipases

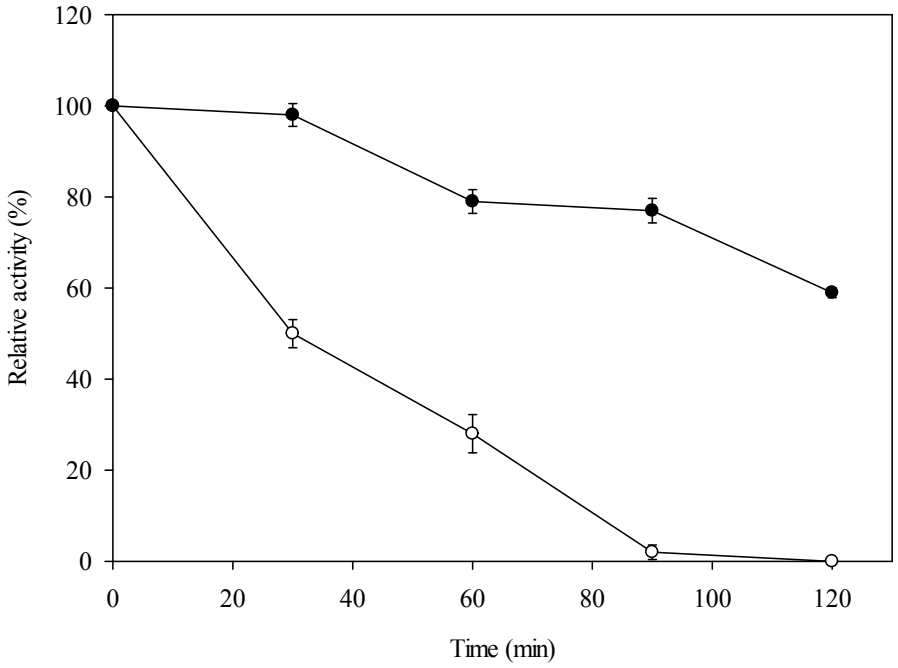

Fig. S4. Thermal stability of free and immobilized lipase at 60˚C. Free lipase ○, lipase adsorbed on dispersed magnetic silica aerogel●.

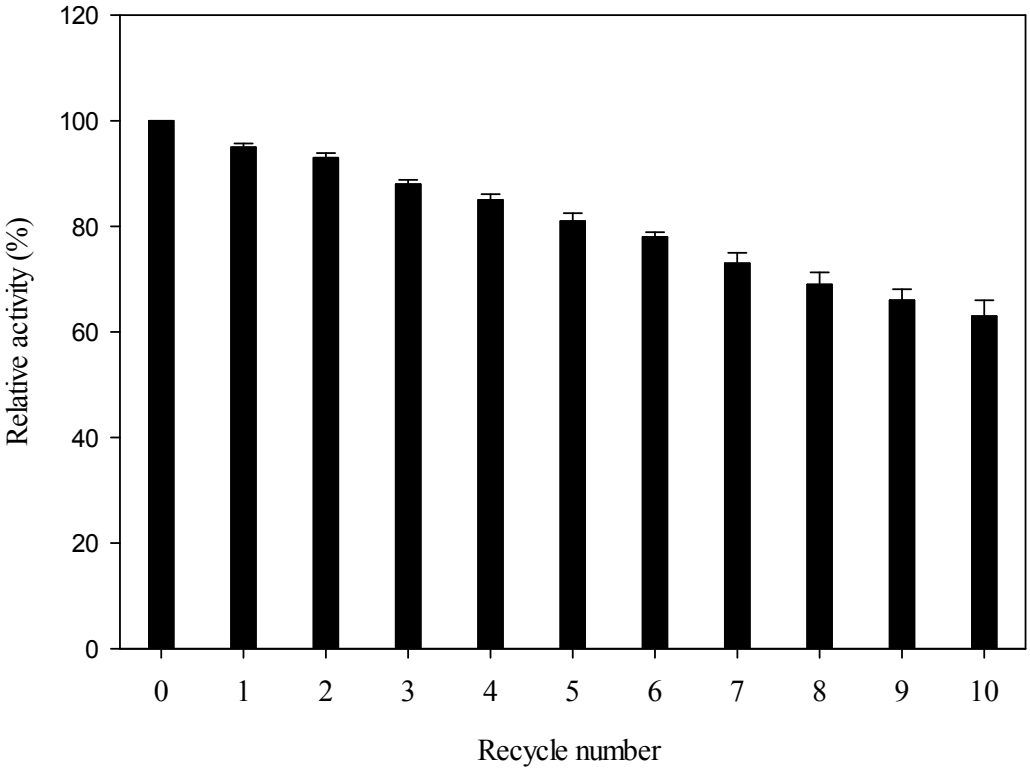

Fig. S5. Reusability of immobilized *Candida rugosa* lipase on dispersed magnetic silica aerogel

Table S1. The main independent variables and their levels used in central composite design

Factor	Variables	Unit	Levels				
			High axial (+α)	High factorial (+1)	Center (0)	Low factorial (-1)	Low axial (-α)
x_1	Amplitude	%	49	45	35	25	21
x_2	Time	min	10.2	9	6	3	1.8

Table S2. Experimental and predicted values obtained using optimum conditions of dispersion parameters

Response variables	Optimum conditions	
	Predicted	Experimental
Specific activity (U/mg-protein)	17.6	17.3±0.33
Immobilization yield (%)	79.1	80±2