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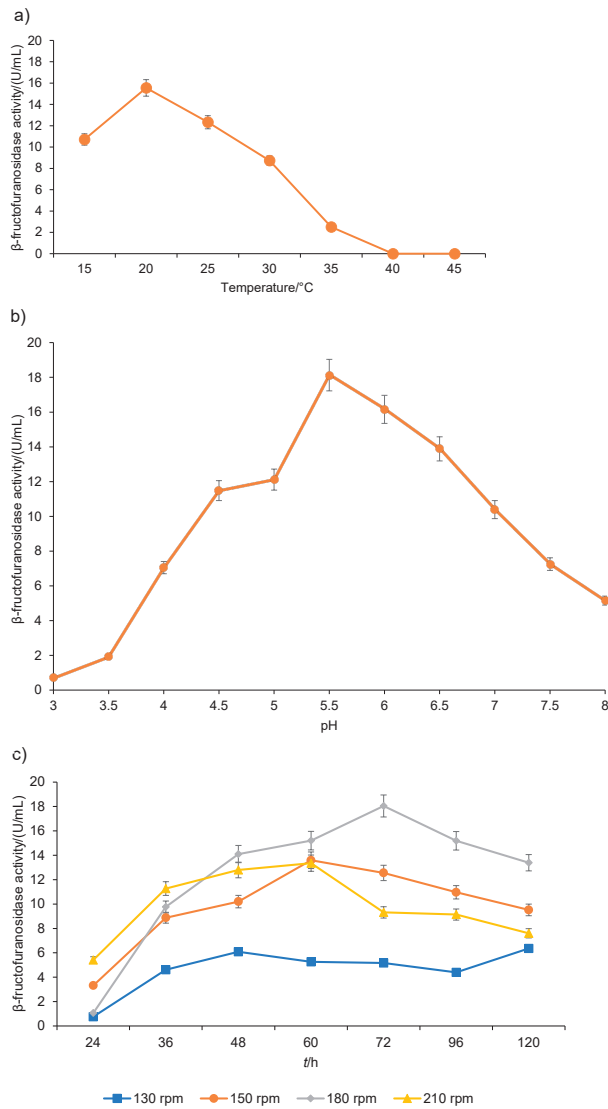


Fig. S1. Effect of: a) temperature, b) pH and c) agitation speed on β -fructofuranosidase production by *Aspergillus carbonarius* PC-4 under submerged conditions. Culture conditions: effect of temperature and pH was measured for 72 h, while agitation speed experiments were carried out under optimized conditions for 120 h of cultivation

Table S1. Fermentation parameters of β -fructofuranosidase production by *Aspergillus carbonarius* PC-4 under different cultivation conditions

Fermentation parameter	Invertase activity		
	$Y_{p/s}$ /(U/g)	r_p /(U/h)	
Temperature/°C			
15	(599.6±3.8) ^c	(2.23±0.01) ^c	
20	(783.2±6.8) ^a	(2.92±0.01) ^a	
25	(690.0±5.3) ^b	(2.57±0.01) ^b	
30	(407.5±1.0) ^d	(1.52±0.00) ^d	
35	(131.1±0.9) ^e	(0.49±0.00) ^e	
40	n.d.	n.d.	
45	n.d.	n.d.	
pH			
3.0	(36.8±1.1) ⁱ	(0.14±0.00) ^h	
3.5	(123.2±4.1) ^h	(0.46±0.00) ^g	
4.0	(434.0±5.0) ^f	(1.62±0.01) ^e	
4.5	(706.9±10.2) ^c	(2.63±0.01) ^c	
5.0	(745.8±8.3) ^c	(2.78±0.01) ^c	
5.5	(1149.9±14.3) ^a	(4.28±0.02) ^a	
6.0	(934.5±3.1) ^b	(3.48±0.01) ^b	
6.5	(906.6±6.1) ^b	(3.37±0.01) ^b	
7.0	(639.6±5.1) ^d	(2.38±0.01) ^c	
7.5	(573.0±5.06) ^e	(2.13±0.01) ^d	
8.0	(307.5±2.04) ^g	(1.14±0.01) ^f	
Agitation speed/rpm	t/h^*		
130	120	320.3±15.0	0.71±0.00
150	60	634.0±24.2	2.83±0.01
180	72	1184.8±19.4	4.41±0.01
210	60	846.9±9.6	3.78±0.02

$Y_{p/s}$ =yield of invertase, r_p =productivity of invertase, n.d.=not detected. *Time of the highest values of each fermentation parameter