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Supplementary Information

Novel In Vitro Multienzyme Cascade for Efficient Synthesis of D-tagatose from Sucrose

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Table S1. Strains and plasmids used in this study.

Strains and Plasmids	description	
E. coli BL21 (DE3)	host for expression plasmids	lab stock
pET-28a	expression vector, Km^R	lab stock
pET28a-*Ba*SP	pET-28a harboring *Ba*SP gene	this study
pET28a-*Ca*FRK	pET-28a harboring *Ca*FRK gene	this study
pET28a-*Ca*F6PE	pET-28a harboring *Ca*F6PE gene	this study
pET28a-*Mm*T6PP	pET-28a harboring *Mm*T6PP gene	this study
pET28a-*Dr*PPK	pET-28a harboring *Dr*PPK gene	this study

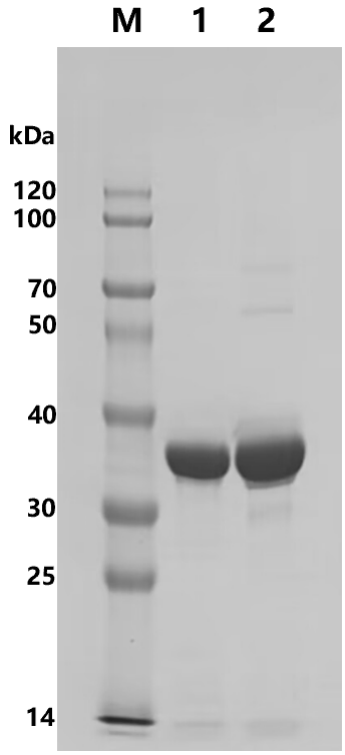

Figure S1. SDS-PAGE analysis of purified enzymes of PPK2. M, protein marker; line 1, *Dr*PPK; line 2, *Da*PPK.

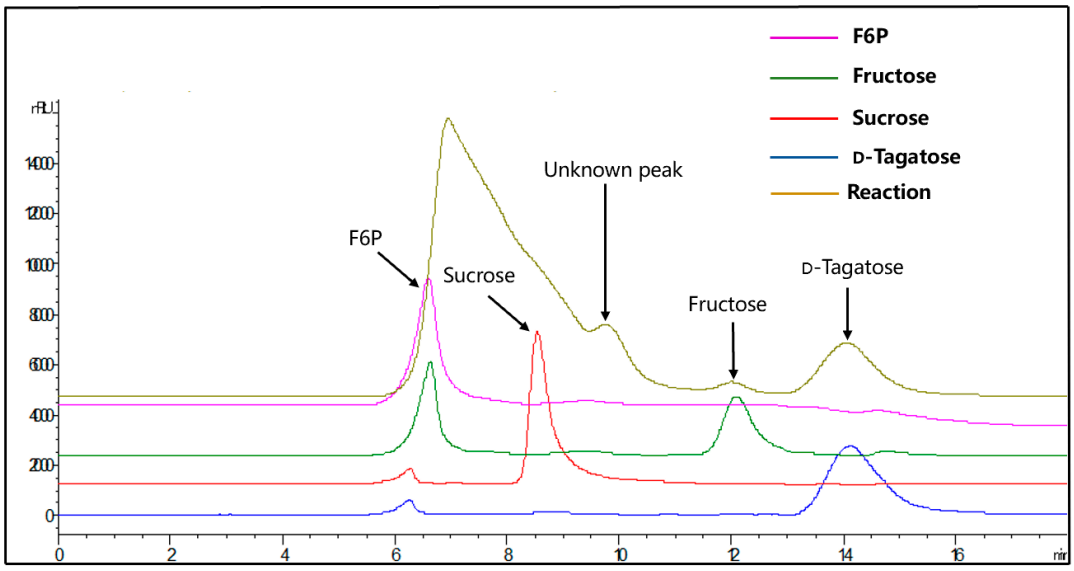

Figure S2. HPLC profiles of MCTS and standard substances and (by)products. **Purple**, F6P standard; **Green**, fructose standard; **Red**, sucrose standard; **Blue**, D-tagatose standard; **Brown**, reaction sample. A 1 mL mixture containing *Ba*SP (0.01 mg·mL^{-1}), *Ca*FRK (0.02 mg·mL^{-1}), *Ca*F6PE (0.05 mg·mL^{-1}), *Mm*T6PP (0.2 mg·mL^{-1}), *Dr*PPK (0.04 mg·mL^{-1}), pH 7.5 buffer (50 mM Tris-HCl + 10 mM PBS), 10 mM sucrose, 4 mM $MnCl_2$, and 1 mM ADP was incubated at 45 °C for 24 h. Unknown peak may include T6P.