Supporting Information

One-Pot Enzymatic Conversion of Sucrose to Synthetic Amylose by using Enzyme Cascades

Running title: Synthetic Amylose Made from Sucrose

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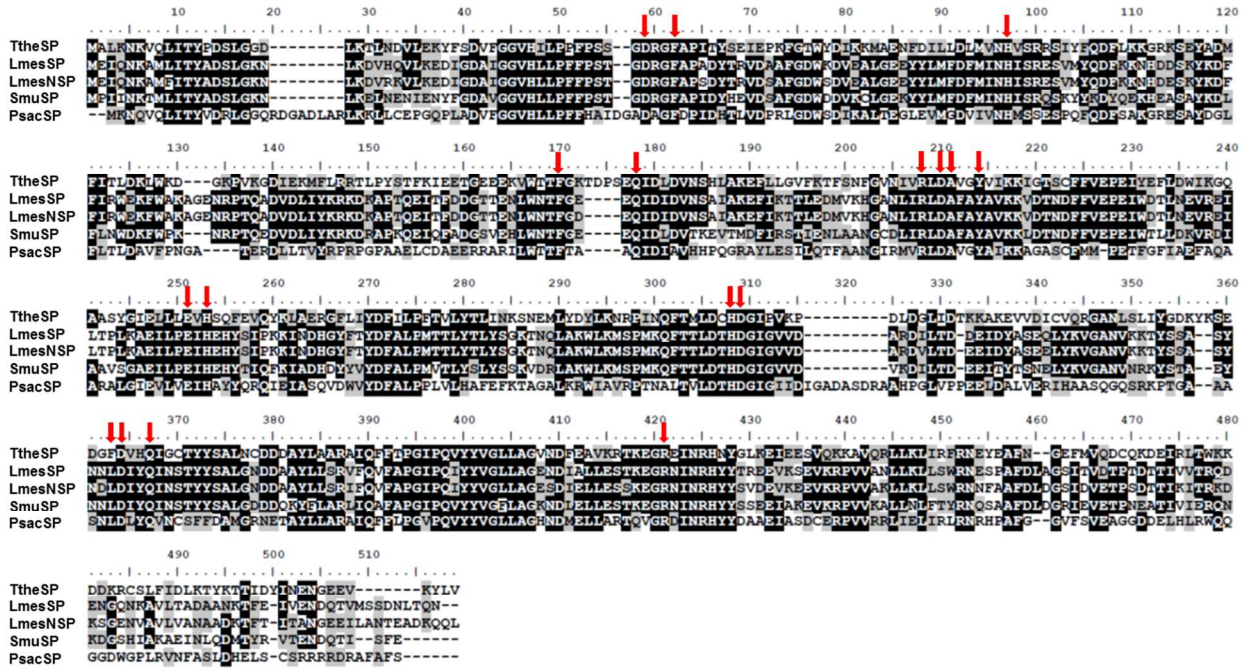

Fig S1. Sequence alignment of sucrose phosphorylase from *T. thermosaccharolyticum* JW/SL-YS485 (TtheSP), *L. mesenteroides* No. 165 (LmesSP), *L.*NRRL B-742 (LmesNSP), *S. mutans* UA159 (SmuSP), and *P. saccharophila* (PsacSP). Red arrows indicate the conserved active sites of sucrose phosphorylase.

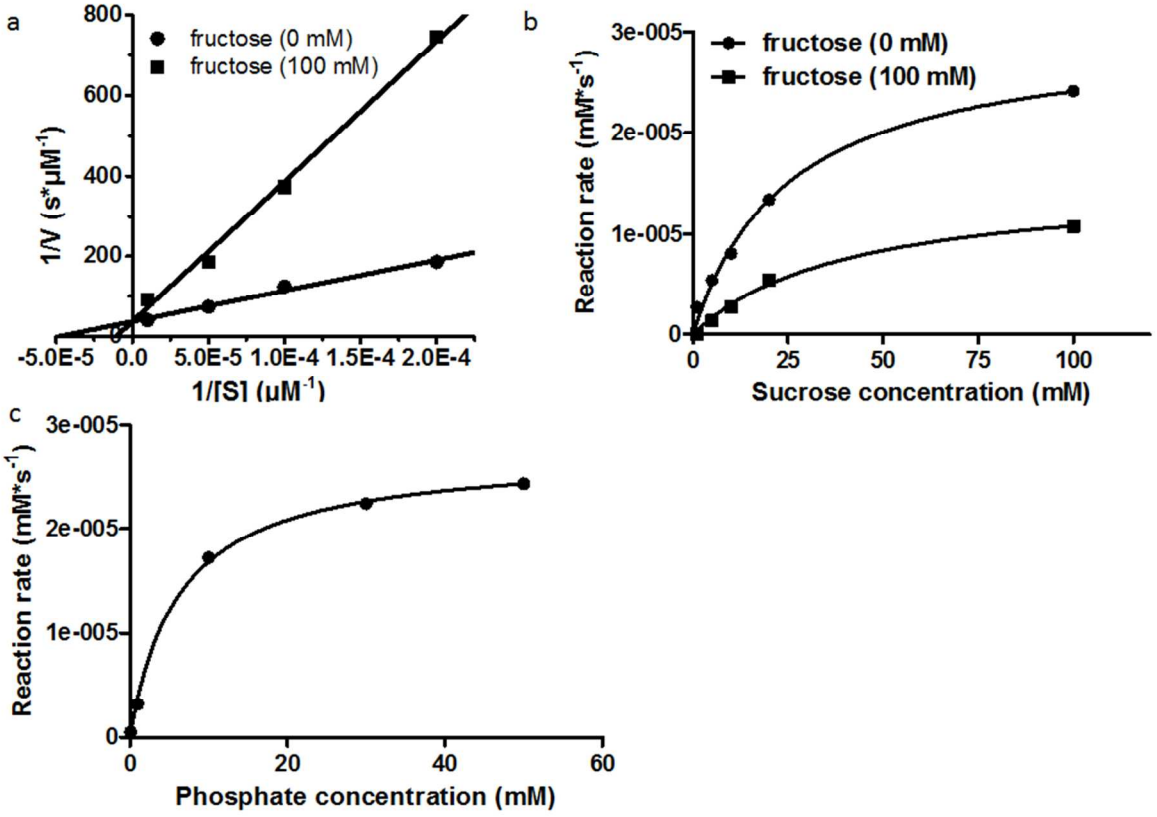

Fig S2. Double reciprocal plot (a) and nonlinear curves (b) of initial velocity against sucrose concentration in the absence and presence of 100 mM fructose. (c) Nonlinear curve of initial velocity against phosphate concentration at fixed sucrose concentration (100 mM).

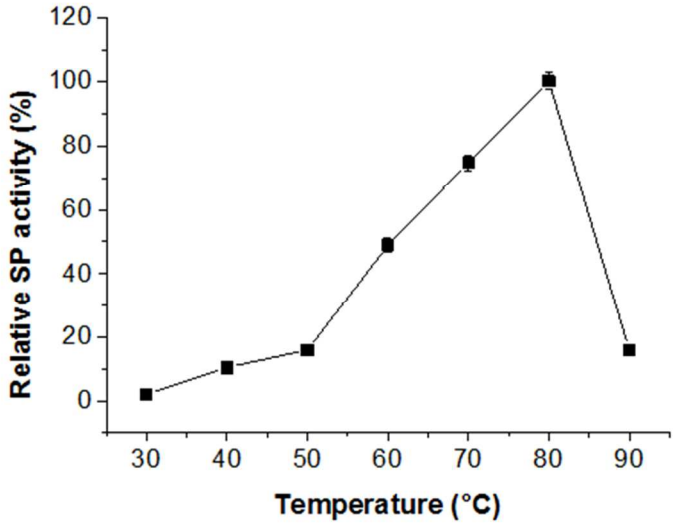

Fig S3. The relative SP activity at various temperature. The activity assay was performed in 100 μL of the mixture containing reagent, 50 mM phosphate, 100 mM sucrose, 10 U of PGM, and 0.1 U of SP. The mixture was incubated at various temperature for 5 min, the 10 μL of the mixture was mixed 400 μL liquid glucose (hexokinase) and incubated at room temperature for 1 min. The formation of NADH with time was monitored spectrophotometrically at 340 nm immediately.

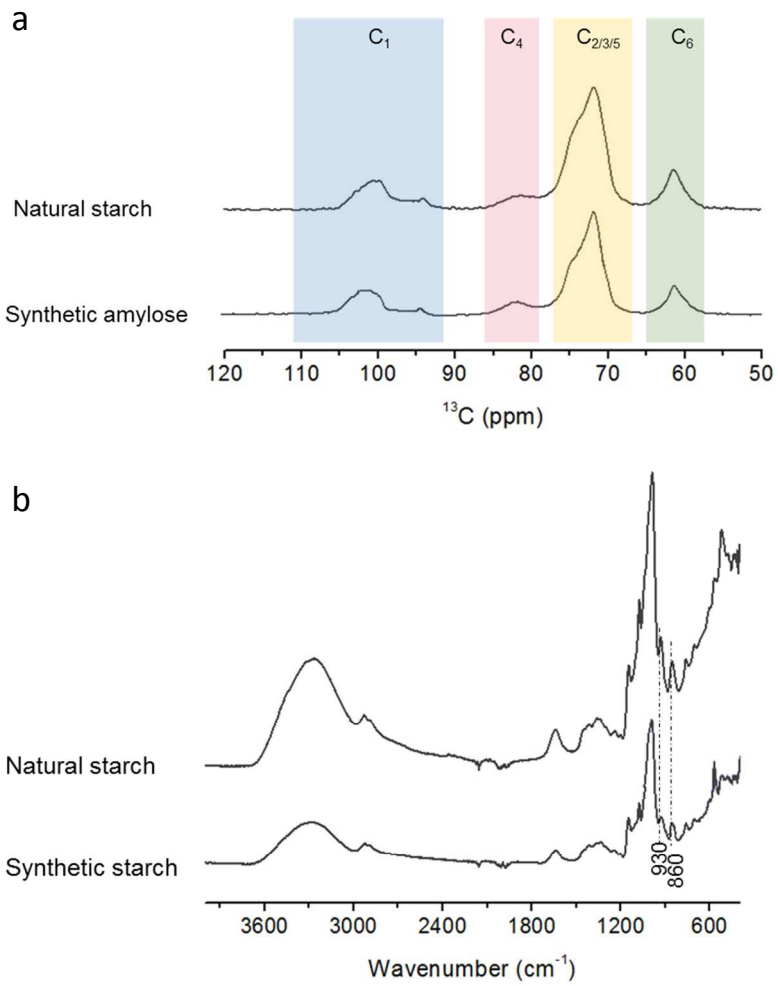

Fig S4. Characterization of synthetic starch by ^{13}C-NMR (a) and FITR (b).