

**Additional file 7. Experimental conditions used for enzymatic parameter measurement.**

The tables show the initial velocities measured using optimized experimental conditions (enzyme concentrations and time points) for each cellodextrin phosphorylase and substrate.

Enzyme concentration	<b>CdpA 0.1 <math>\mu</math>M</b>						
Substrate	Cellotetraose						
Substrate concentration (mM)	20	10	5	3.33	1	0.4	0.2
Incubation time (minutes)	10						
Cellotriose increase ( $\mu$ M/min)	112.2 $\pm$ 3.3	181.9 $\pm$ 6.2	103.3 $\pm$ 2.2	49.6 $\pm$ 2.6	17.5 $\pm$ 0.2	7.2 $\pm$ 0.4	3.9 $\pm$ 0.1

Enzyme concentration	<b>CdpA 0.1 <math>\mu</math>M</b>						
Substrate	Cellopentaose						
Substrate concentration (mM)	8.48	5	3.33	1	0.4	0.2	
Incubation time (minutes)	5						
Cellotetraose and cellotriose increase ( $\mu$ M/min)	176.2 $\pm$ 18.5	134.1 $\pm$ 11.8	126.2 $\pm$ 4.3	39.9 $\pm$ 1.8	19.5 $\pm$ 0.2	9.9 $\pm$ 0.7	

Enzyme concentration	<b>CdpB 2 <math>\mu</math>M</b>					
Substrate	Cellotetraose					
Substrate concentration (mM)	10	5	3.33	0.2	0.133	
Incubation time (minutes)	10					
Cellotriose increase ( $\mu$ M/min)	100.1 $\pm$ 5.2	73.0 $\pm$ 3.5	57.1 $\pm$ 13.4	4.5 $\pm$ 0.2	3.5 $\pm$ 0.3	

Enzyme concentration	<b>CdpC 0.1 <math>\mu</math>M</b>						
Substrate	Cellotriose						
Substrate concentration (mM)	20	10	5	3.33	1	0.4	0.2
Incubation time (minutes)	5						
Cellobiose increase ( $\mu$ M/min)	780.9 $\pm$ 10.0	536.8 $\pm$ 47.1	389.6 $\pm$ 5.8	293.3 $\pm$ 3.0	114.2 $\pm$ 10.1	50.3 $\pm$ 0.8	27.6 $\pm$ 0.5