

Supplementary Information

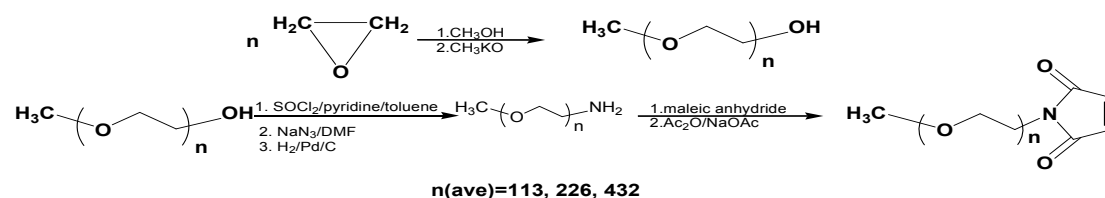
Design of a Thermoregulated Phase-Separable System for Homogeneous Enzymolysis of Cellulose

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Preparation of modifier



Scheme S1 Preparation of monomethoxyl-polyethylene glycol maleimide (molecular weight 5000, 10000, 20000; marked: mPEG-Mal 5k, mPEG-Mal 10k, mPEG-Mal 20k, respectively)

The physical parameters of natural celluloses

Table. S1 The physical parameters of these natural celluloses

Natural Cellulose	Compose/%			
	Cellulose	Hemicellulose	Lignin	Ash content
Straw	43.0	28.9	20.6	7.5
willow	63.4	32.4	-	4.2
pledget	73.5	23.4	-	3.1

Degree of modification(DM) of modified cellulase

Degree of modification(DM) of thiol groups in a cellulase molecule was determined using the standard Ellman method was adapted.¹ 1.0 mL cellulase solution(10mg/mL) was put into 5mL DTNB solution, after 10 minutes at 25°C, then the solution was assayed at 412 nm, absorbance value was A₀. At the same time, 1.0 mL modified cellulase solution(10mg/mL) was put into 5mL DTNB solution, after 10 minutes at 25°C, then the solution was assayed at 412 nm, absorbance value was A.

$$DM = \left(1 - \frac{A}{A_0}\right) \times 100\%$$

The DM was defined as follows:

1 P. W. Riddles, R. L. Blakely and B. Zemer, Anal. Biochem. 1979, 94, 75.

The ¹H-NMR of Cell-Mal

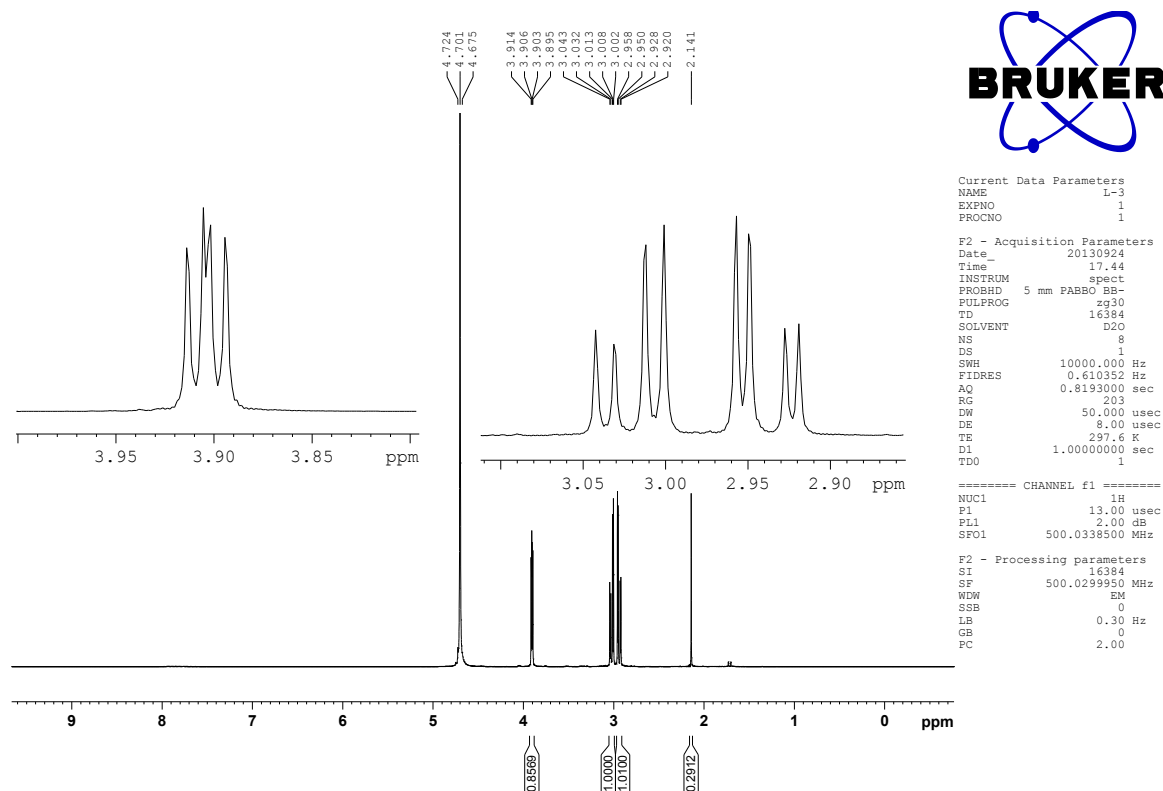


Figure S1 ¹H-NMR of Cell-Mal