catalysts

Immobilization of Recombinant Endoglucanase (CelA) from *Clostridium thermocellum* on Modified Regenerated Cellulose Membrane

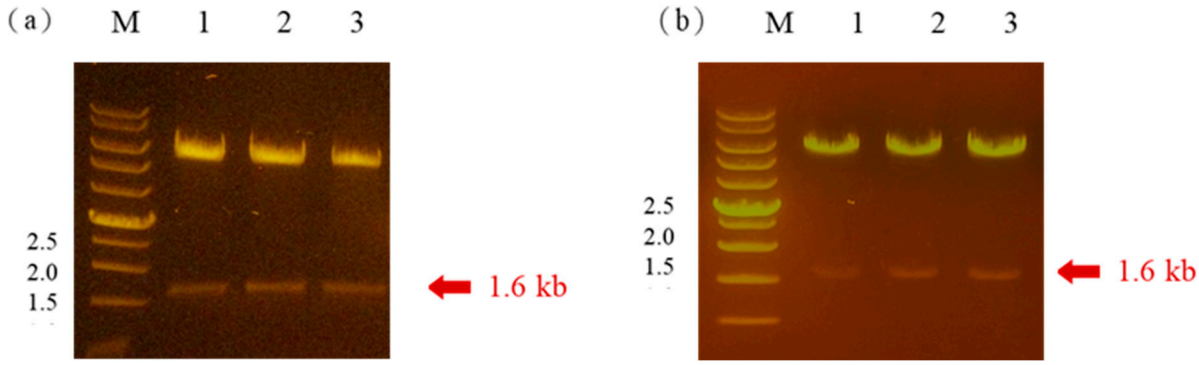

Figure S1. DNA electropherogram of pET21b-CelA-his plasmid in *E. coli* BL21 (a) and *E. coli* ER2566 (b) confirmed by gene cleavage. Lane M: 1 Kb marker; Lane 1-3: CelA digested with Nde I and Xho I

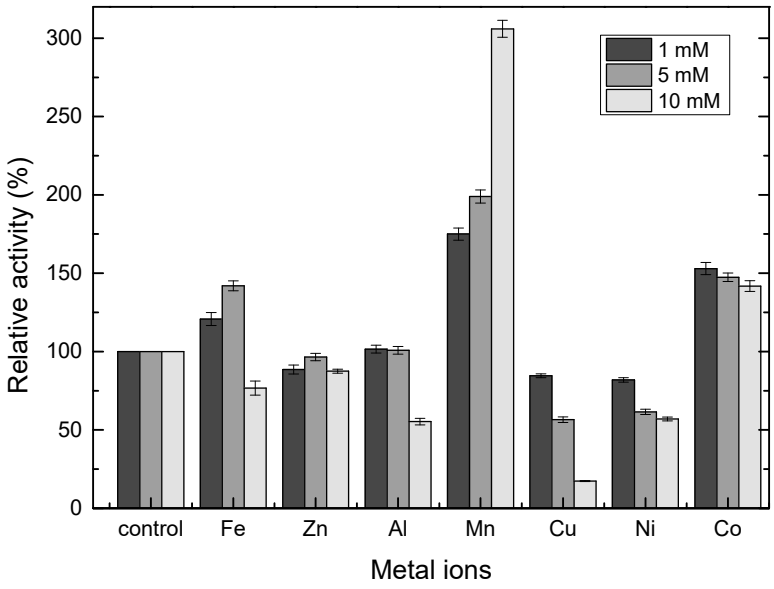

Figure S2. Effects of different metal ions on the activity of CelA endoglucanase enzyme.

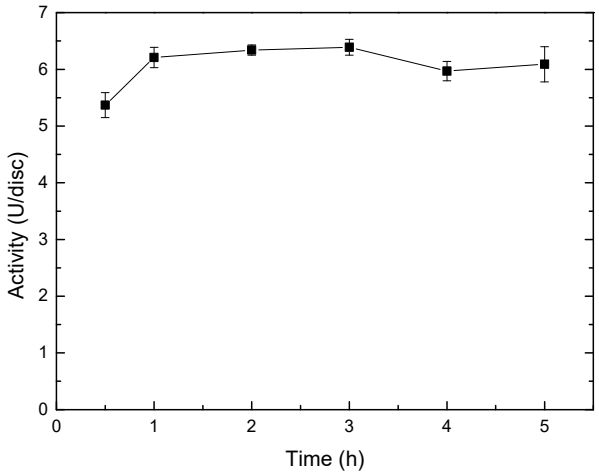

Figure S3. Effect of GA treatment time on CelA endoglucanase activity.

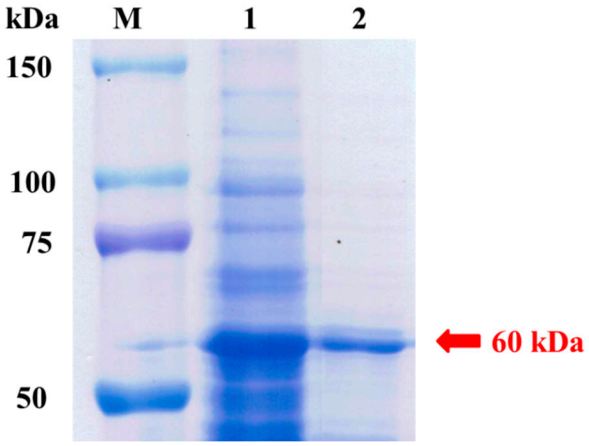

Figure S4. SDS PAGE electrophoresis of the Histag purified CelA. Lane M: marker (kDa); Lane 2: crude CelA; Lane 3: purified CelA.

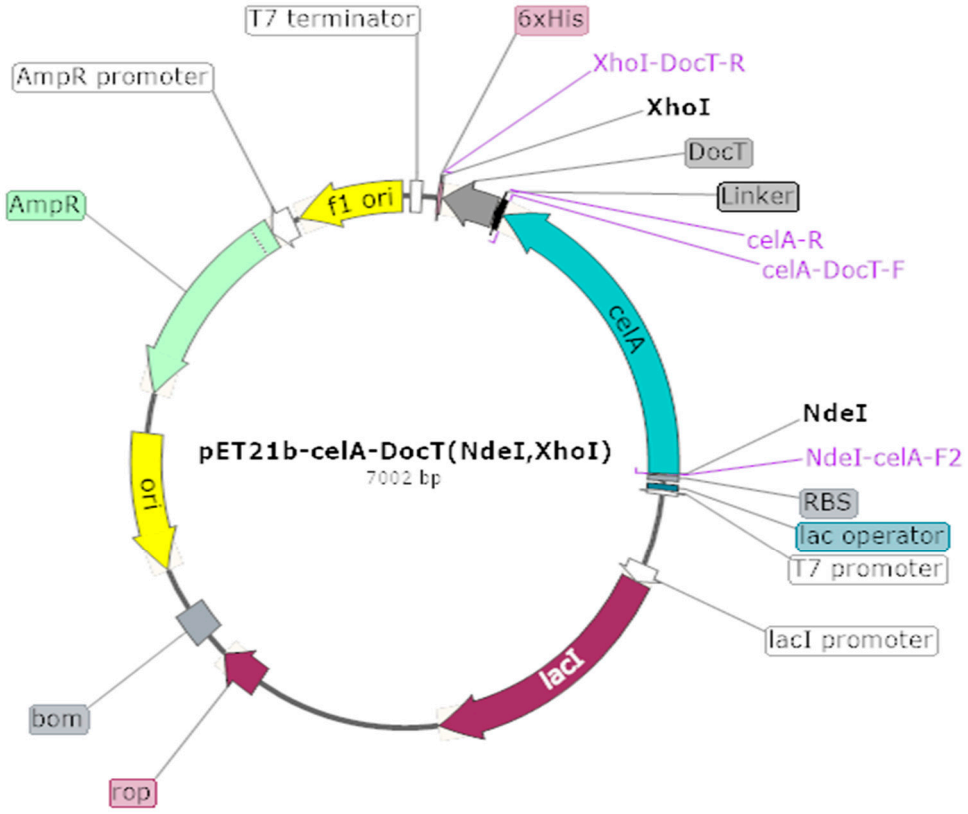

Figure S5. pET21b-CelA-docT gene construction.

(a) **(b)**

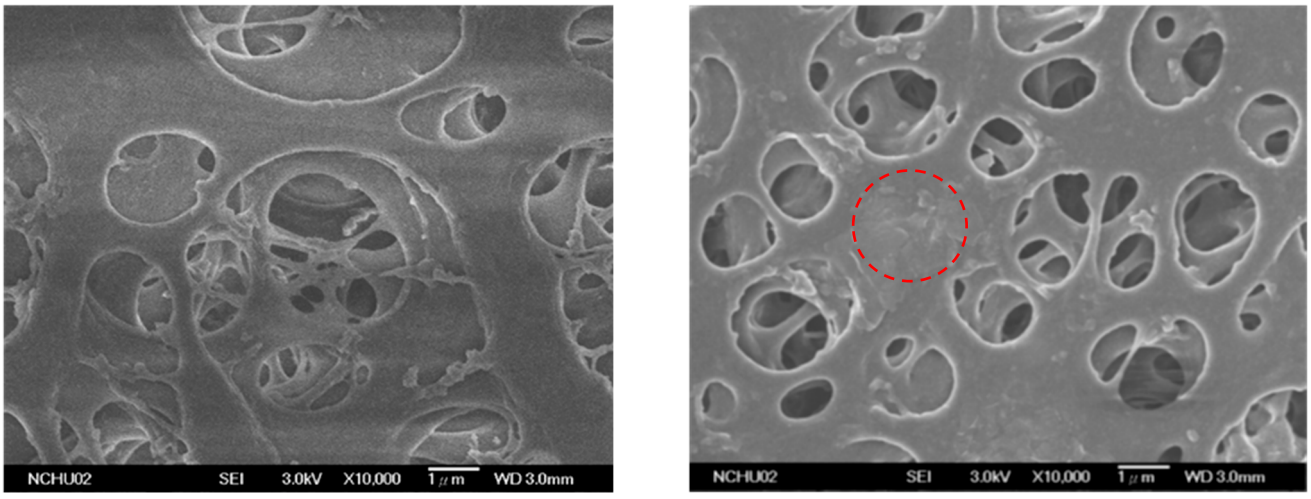

Figure S6. SEM micrographs of IMAM RC membrane (a) before (b) after immobilization

Table S1. *Escherichia coli* strains and plasmids used in the study.

Strain or plasmid	Genotype and Relevant characteristics	Source
DH5α	F– endA1 glnV44 thi-1 recA1 relA1 gyrA96 deoR nupG Φ80dlacZ △ M15 △ (lacZYA-argF)U169, hsdR17(rK– mK+) λ–	Novagen, USA
BL21 (DE3)	F– ompT gal dcm lon hsdSB(rB– mB–) λ–(DE3 [lacI lacUV5-T7 gene 1 ind 1 sam7 nin5])	Novagen, USA
ER 2566	F-λ- fhuA2 [lon] ompT lacZ::T7 gene 1 gal sulA 11 △ (mcrC-mrr)114::IS10R(mcr-73::miniTn10-TetS)2 R(zgb-210::Tn10)(TetS)endA1 [dcm]	New England Biolabs, USA
pET21b	Bacterial vector for inducible expression of N-terminally T7-tagged proteins	Novagen, USA
celA	Hydrolyze internal glycosidic bonds in cellulose, generally have 'cleft'-like active sites, and they are described as hydrolyzing and then dissociating, though some bacterial EGs are known to act 'processively' on crystalline cellulose.	Department of Life Sciences, National Chung Hsing University
dockerin (docT)	The dockerin's binding partner is the cohesin domain, located on the scaffoldin protein. It has two in-tandem repeats of a non-EF hand calcium binding motif. Each motif is characterized by a loop-helix structure.	Biodiversity Research Center, Academia Sinica (BRCAS)