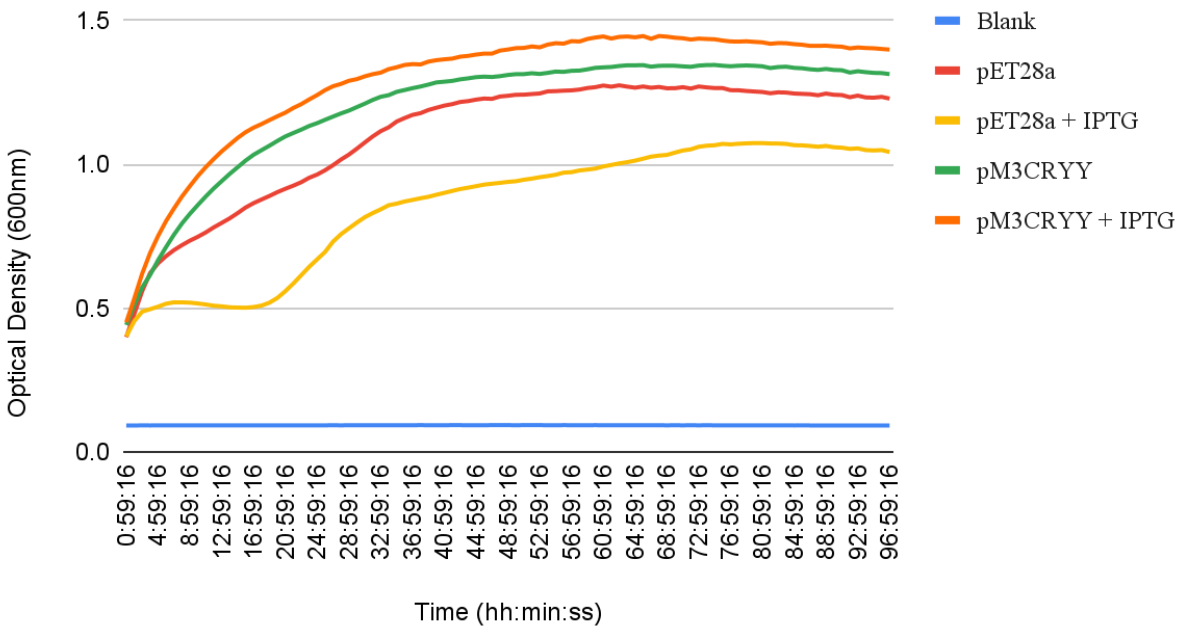

FIG. S1 Growth curve of transformed *E. coli* BL21 + pM3CRYY with uninduced and empty vector negative controls. Cell cultures of *E. coli* BL21 + pM3CRYY and *E. coli* BL21 + pET28a(+) were inoculated and subcultured in low salt LB media + kanamycin until OD_{600} was 0.6-0.8 and either plated or induced with 0.1 mM IPTG and then plated. 200 µL of cell culture was plated per well of a 96 well plate reader for a total of 6 wells per sample. Samples were incubated at 25°C in Epoch 2 Microplate reader (BioTek) for 96 hours with an OD_{600} reading recorded each hour. Average OD_{600} readings of the samples were used to create the growth curve.

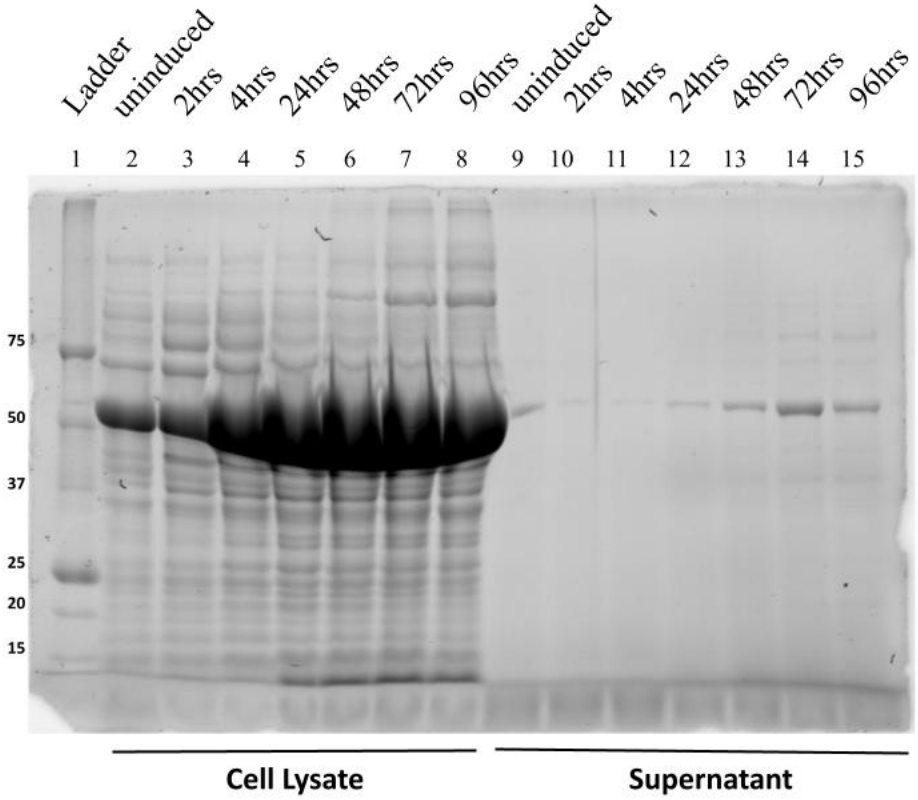

FIG. S2 10% SDS-PAGE confirms higher amounts of ChiC in the cell compared to the supernatant. 1 mL of uninduced *E. coli* BL21 + pM3CRYY sample was collected after subculture and prior to induction as a negative control. 1 mL *E. coli* BL21 + pM3CRYY induced samples were collected at respective hours post-induction and centrifuged for 5 minutes at 5000rpm to separate the cell pellet and supernatant. Cell pellets were lysed with 50µL of lysis buffer to produce the cell lysate. Loading samples were composed of a 2:1 ratio of reducing dye with β-mercaptoethanol : prepared sample (uninduced, induced cell lysate, or induced supernatant) for a total of 20µL per loading sample. Potential ChiC presence is corresponded by a band at approximately 55 kDa; this band was found in lanes 2-9, 12-15. Precision Plus Protein™ Unstained Protein Standards were used to provide references for protein sizes

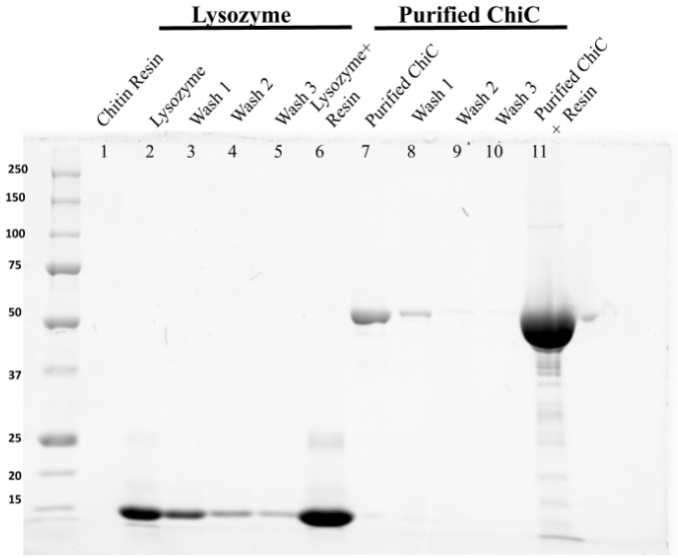

FIG. S3 10% SDS-PAGE results of purified ChiC and lysozyme after chitin resin affinity purification. Lane 1: chitin bead slurry prior to purification. Lane 2: 1.623mg/mL lysozyme. Lane 3-5: consecutive phosphate buffered saline (PBS) column washes after incubation of chitin resin with lysozyme. Lane 6: the chitin resin+lysozyme remainder after PBS washes. Lane 7: 1.623mg/mL ChiC purified from immobilized metal affinity chromatography Lanes 8-10: consecutive phosphate buffered saline (PBS) column washes after incubation of chitin resin with purified ChiC. Lane 11: the chitin resin+purified ChiC remainder after PBS washes. Gel loading samples were each prepared by combining 5µL protein samples, 5µL distilled water, and 10µL 2x Laemmli loading dye + β-ME. Precision Plus Protein™ Unstained Protein Standards were used to provide references for protein sizes

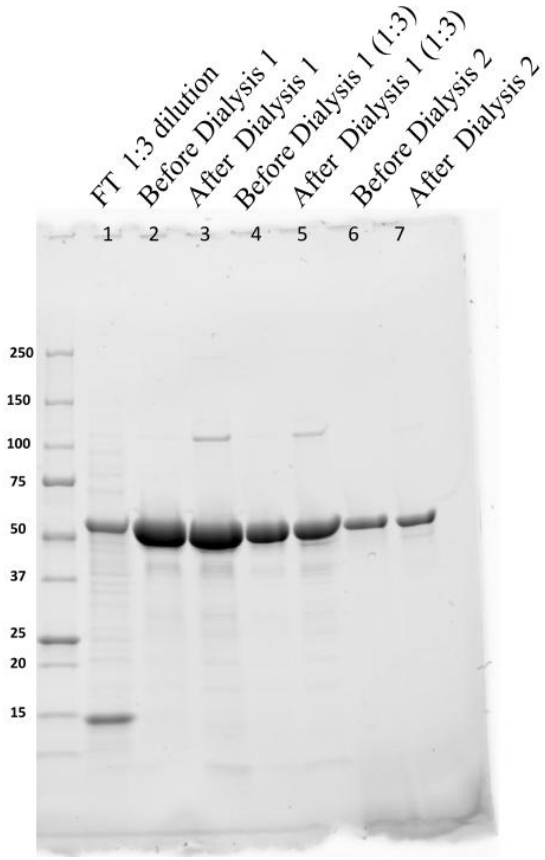

FIG. S4 10% SDS-PAGE comparison of purified ChiC before and after Dialysis. Lane 1: Flowthrough from IMAC purification using Ni resin. Lane 2: most concentrated purified ChiC sample 1 before dialysis(1:1 dilution with the 2x reduced Laemmli dye+ β-ME) Lane 3: 1.62mg/mL ChiC sample 1 after dialysis(1:1). Lane4-5: 1:3 dilution of lane 1 and 2. Lane 6: less concentrated purified ChiC sample 2 before dialysis(1:1) Lanes 7: 0.22mg/mL purified ChiC sample 2 after dialysis(1:1). 1:3 gel loading samples were each prepared by combining 5μL protein samples, 5μL distilled water, and 10μL 2x Laemmli loading dye + β-ME; 1:1 samples were prepared by 10μL protein samples and 10μL 2x Laemmli loading dye + β-ME; 10μL of each samples were loaded. Precision Plus Protein™ Unstained Protein Standards were used to provide references for protein sizes.