Catalysts

Highly efficient biosynthesis of nicotinic acid by immobilized whole cells of *E. coli* expressing nitrilase in semi-continuous packed-bed bioreactor

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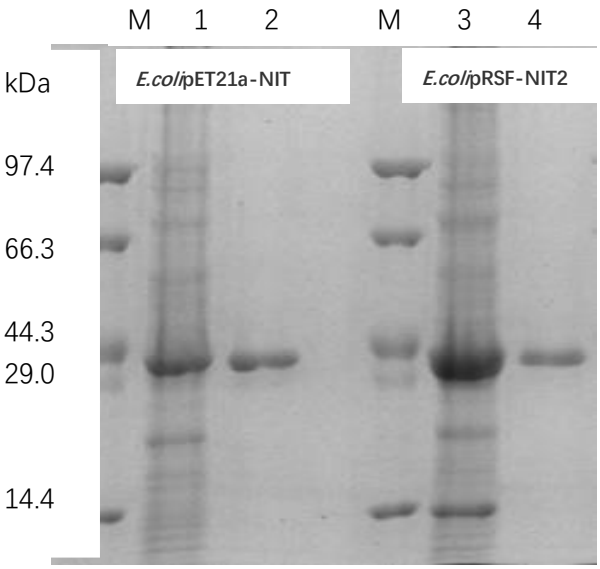
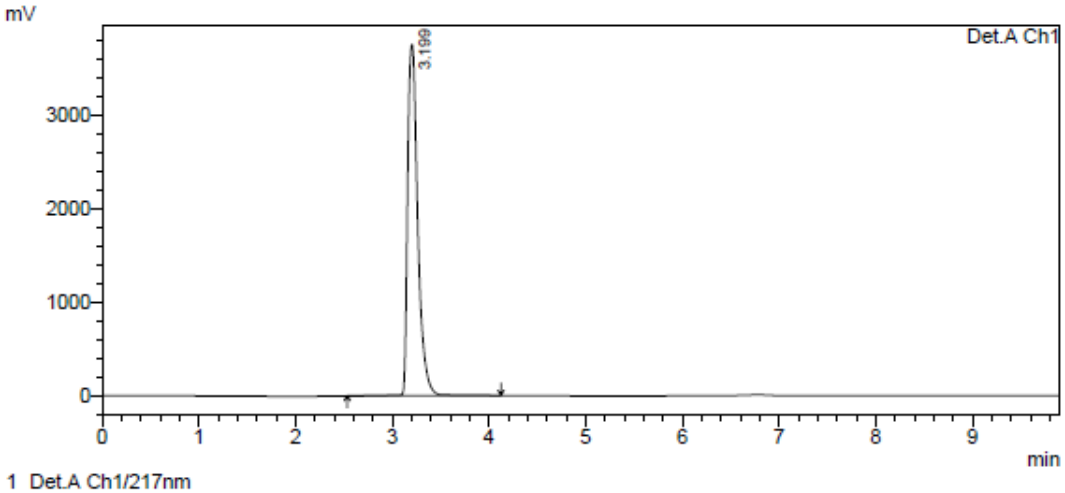


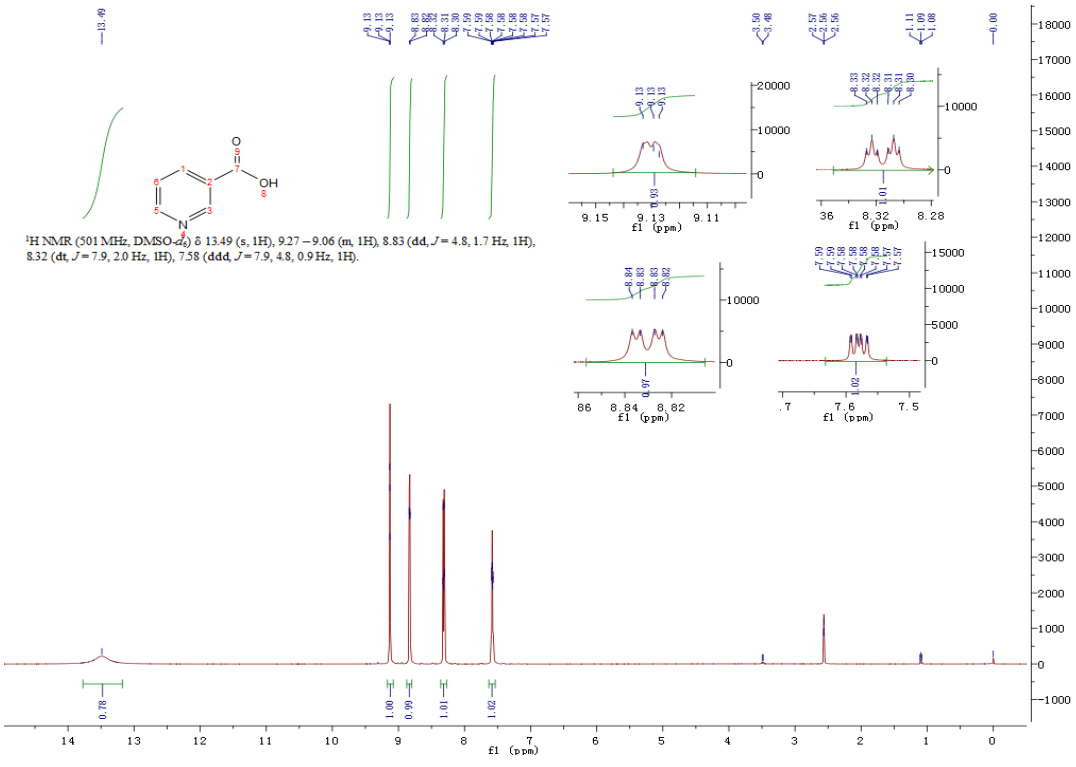
Figure S1. SDS-PAGE of recombinant NIT from *E. coli* pET21a-AfNit and *E. coli* pRSF-AfNit2**.** M: protein marker; 1: supernatant of *E. coli* pET21a-AfNit cell free extract; 2: purified NIT from *E. coli* pET21a-AfNit; 3: supernatant of *E. coli* pRSF-AfNit2 cell free extract; 4: purified NIT from *E. coli* pRSF-AfNit2.

a

b


mV
Det.A Ch1
3.199
3000
2000
1000
0
0 1 2 3 4 5 6 7 8 9
min

c


1 Det.A Ch1/217nm
¹H NMR (501 MHz, DMSO-d6) δ 13.49 (s, 1H), 9.27 – 9.06 (m, 1H), 8.83 (dd, J = 4.8, 1.7 Hz, 1H), 8.32 (dt, J = 7.9, 2.0 Hz, 1H), 7.58 (ddd, J = 7.9, 4.8, 0.9 Hz, 1H).
f1 (ppm)

d

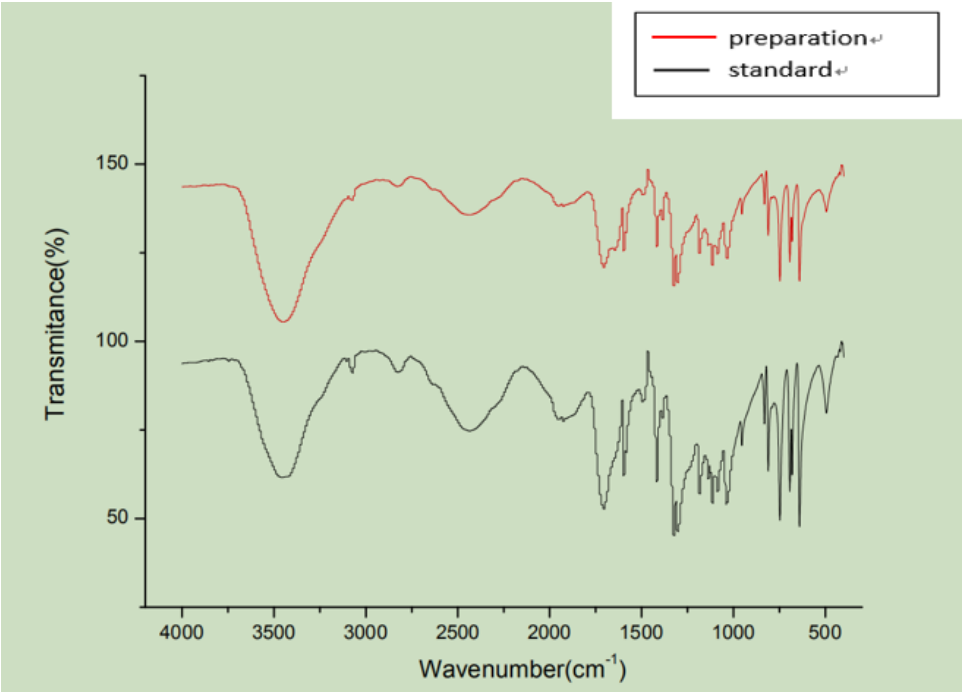


Figure S2. Characterization spectrum and picture of prepared nicotinic acid. (**a**) The morphology of crystallized NA; (**b**) HPLC spectrum; (**c**) ^{1}H NMR spectrum ; (**d**) Fourier transform infrared spectroscopy.