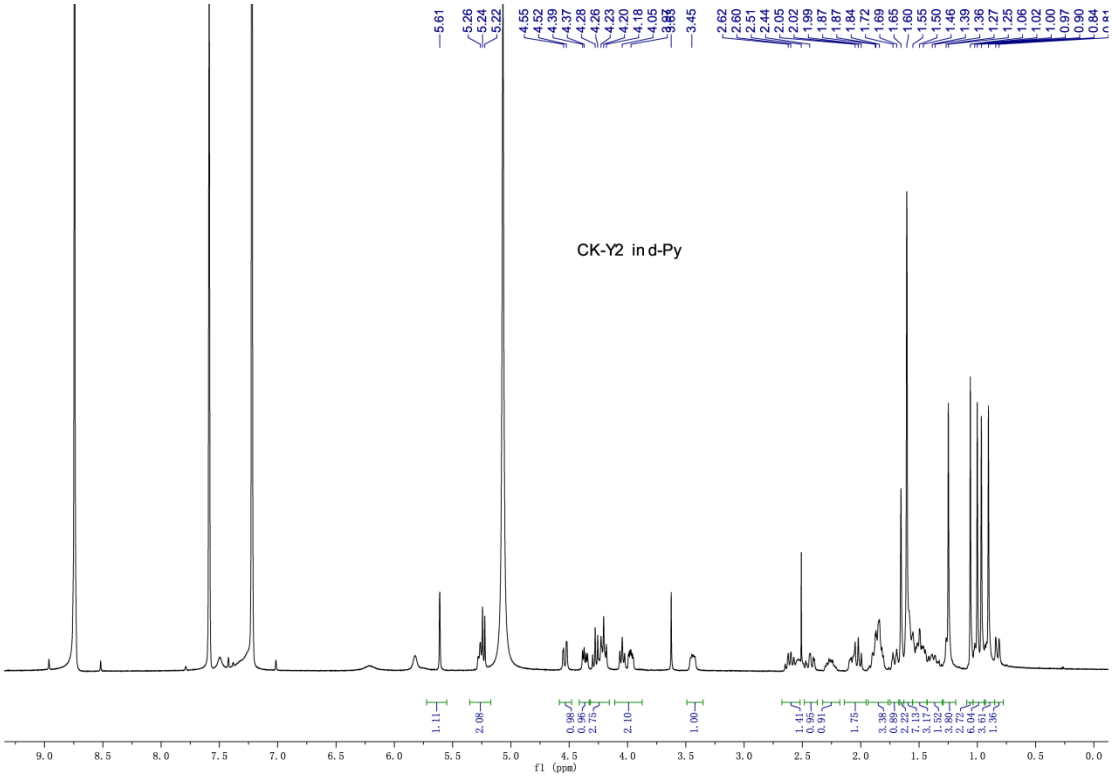
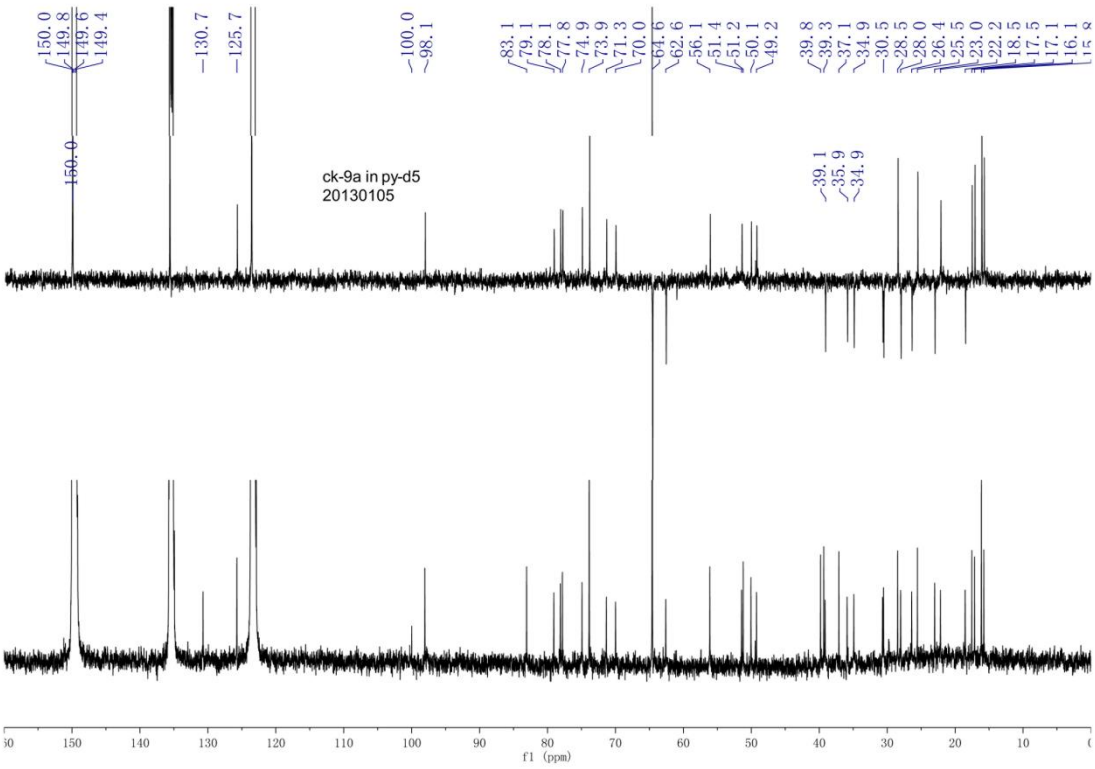
A



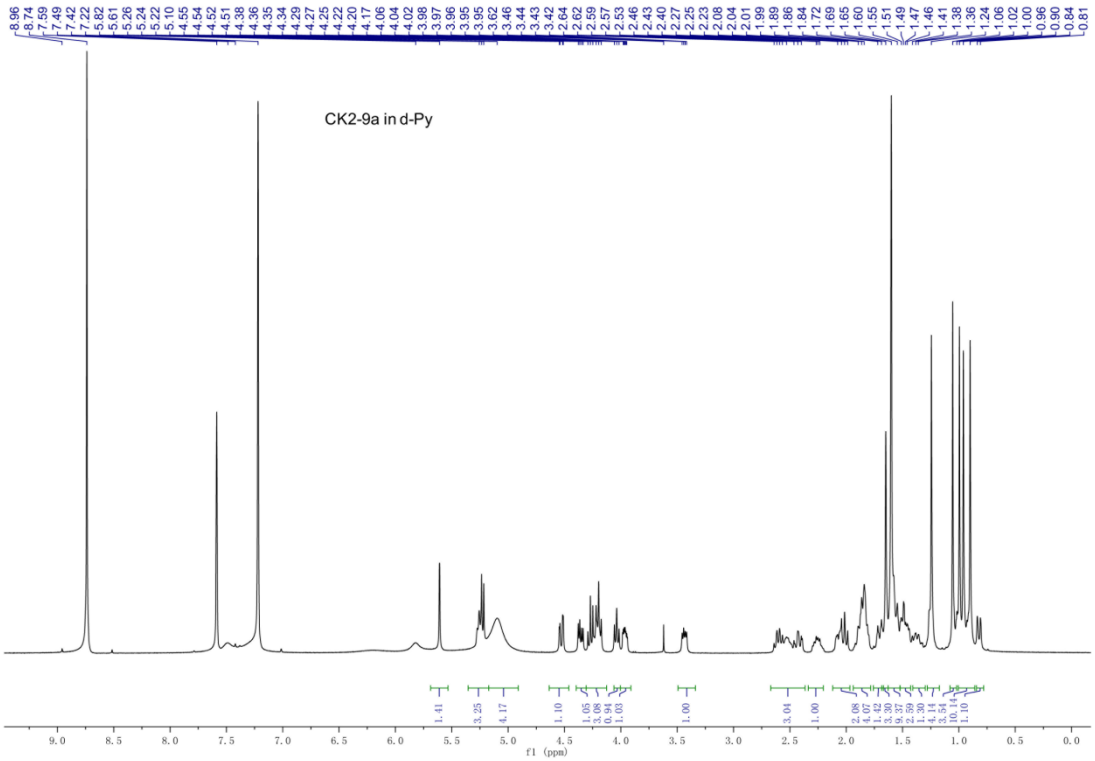
^{1}H-NMR (400MHz, in pyridine-d_5) δ 5.24 (1H, t, J = 8.0Hz, H-24), 5.17 (1H, d, J =7.8Hz, H-1′), 3.96 (1H, ddd-like, H-12), 3.43 (1H, dd, J = 10.5, 5.1,H-3), 1.65 (3H, s, H-21), 1.60 (6H, H-26, 27), 1.24 (3H, s, H-28), 1.06 (3H, s, H-29), 1.00 (3H, s, H-30), 0.96 (3H, s, H-18), 0.90 (3H, s, H-19), 0.82, (1H, d, J = 11.0 Hz, H-5).

B



^{13}C-NMR (125MHz, in pyridine- d_5) δ 130.7, (C-25), 125.7 (C-24), 83.1 (C-20), 77.8 (C-3), 70.0 (C-12), 56.1 (C-5), 51.4 (C-17), 51.2 (C-14), 50.1 (C-9), 49.2 (C-13), 39.8 (C-8), 39.3 (C-4), 39.1 (C-1), 37.1 (C-10), 35.9 (C-22), 34.9 (C-7), 30.7 (C-15), 30.5 (C-11), 28.5 (C-28), 28.0 (C-2), 26.4 (C-16), 25.5 (C-26), 23.0 (C-23), 22.2 (C-21), 18.5 (C-6), 17.5 (C-27), 17.1 (C-30), 16.1 (C-18 and C-29), 15.8 (C-19), 98.1 (C-1′), 74.9 (C-2′), 79.1 (C-3′), 71.4 (C-4′), 78.1 (C-5′), 62.6 (C-6′).

C



^{1}H-NMR (400MHz, in pyridine-d_5) δ 5.24 (1H, t, J = 8.0Hz, H-24), 5.17 (1H, d, J =7.8Hz, H-1′), 3.96 (1H, ddd-like, H-12), 3.43 (1H, dd, J = 10.5, 5.1,H-3), 1.65 (3H, s, H-21), 1.60 (6H, H-26, 27), 1.24 (3H, s, H-28), 1.06 (3H, s, H-29), 1.00 (3H, s, H-30), 0.96 (3H, s, H-18), 0.90 (3H, s, H-19), 0.82, (1H, d, J = 11.0 Hz, H-5).

Supplementary information, Figure S4 NMR spectra of CK produced by the engineered yeast strain AK1and by UGTPg1 *in vitro* reaction.
^{1}H NMR (**A**) and ^{13}C NMR (**B**) of CK produced by the engineered yeast strain AK1.
C, ^{1}H NMR of CK produced by UGTPg1 *in vitro* reaction.