

## Supporting Information

# Biosynthesis of 2-furylhydroxymethylketone, an intermediate of cefuroxime, from furfural and formaldehyde using a ThDP-dependent enzyme

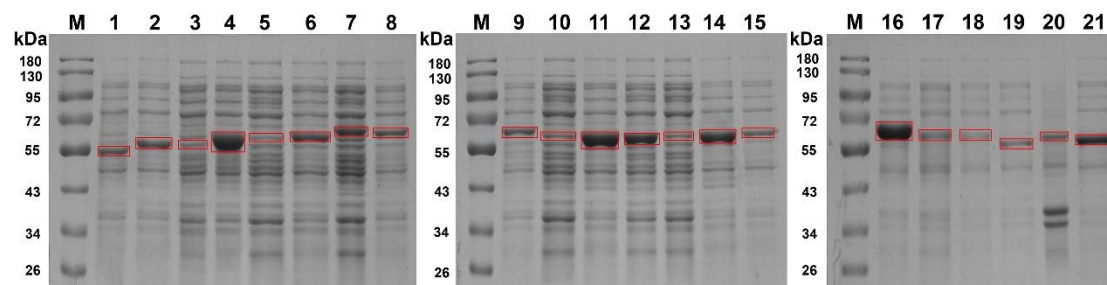
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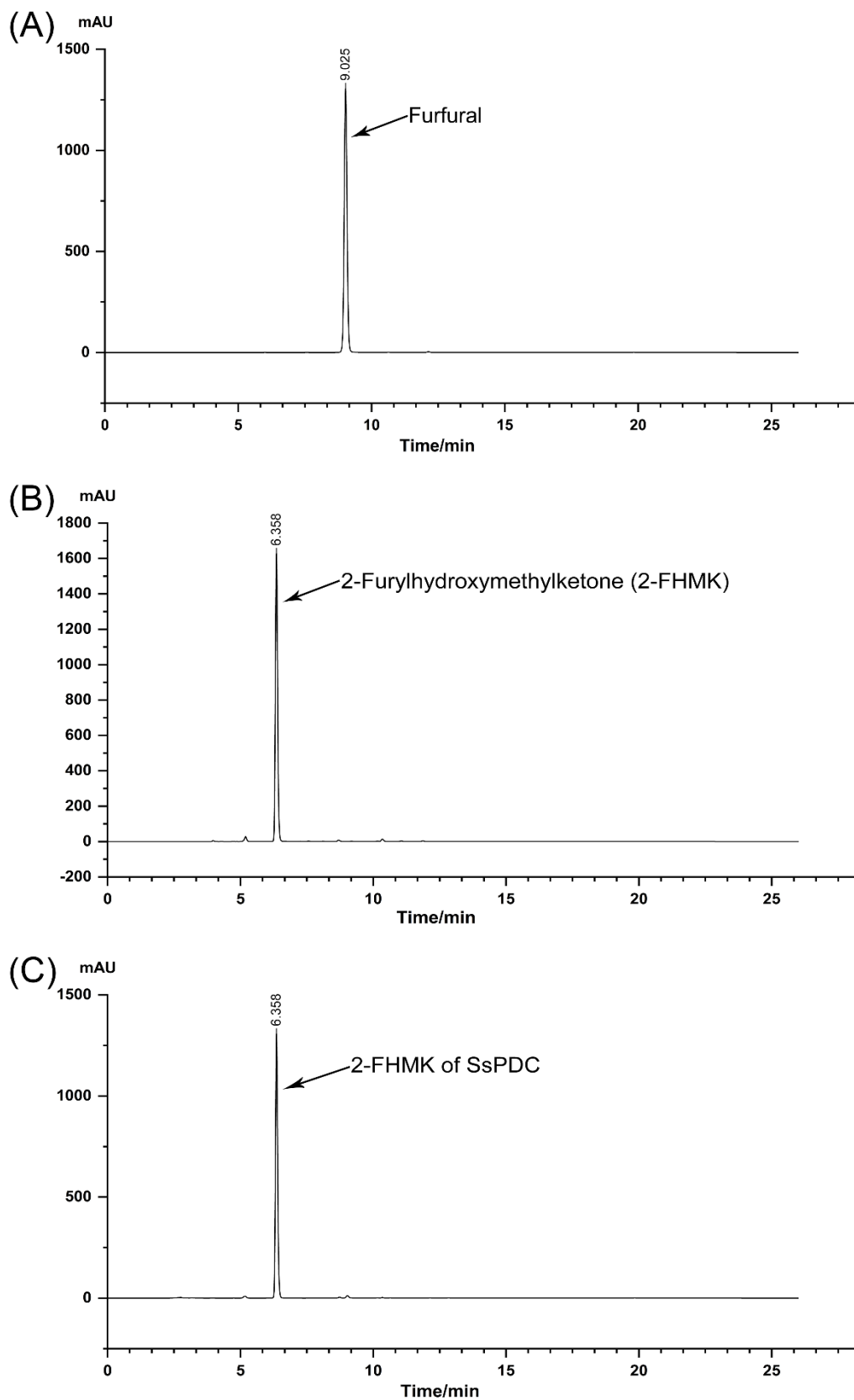
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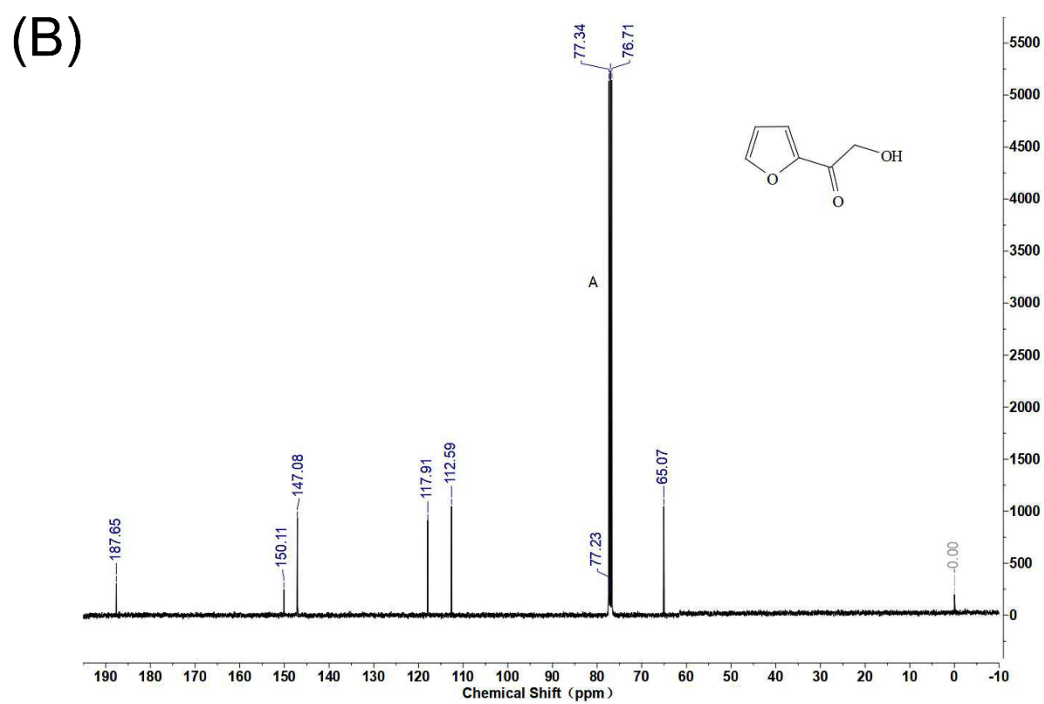
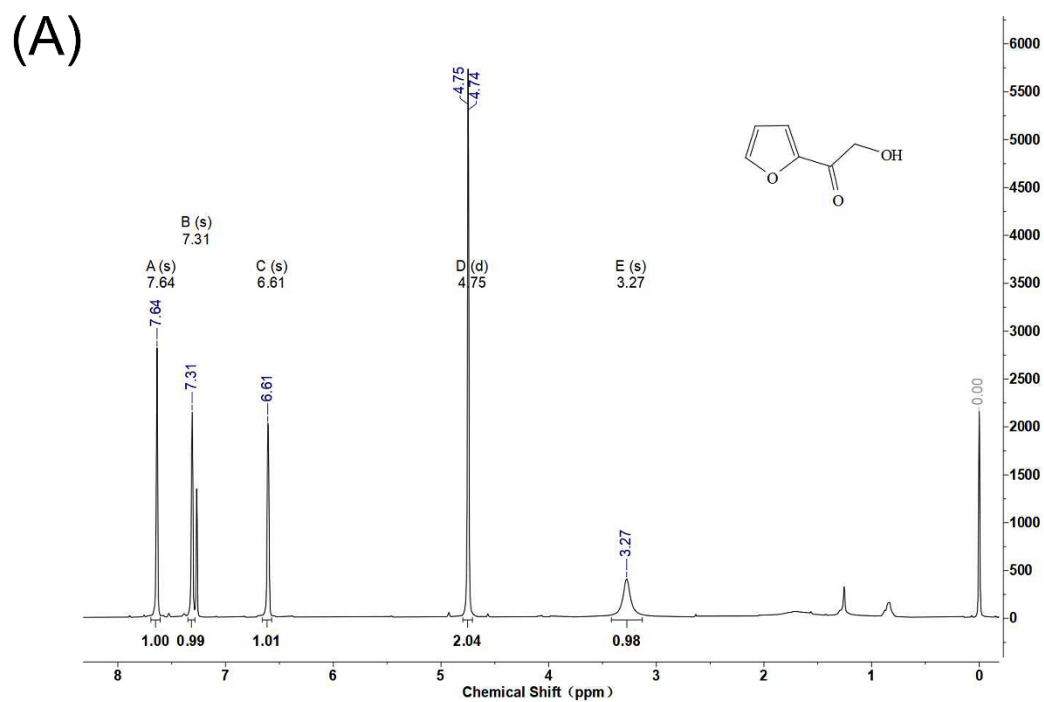
## Supporting Figures



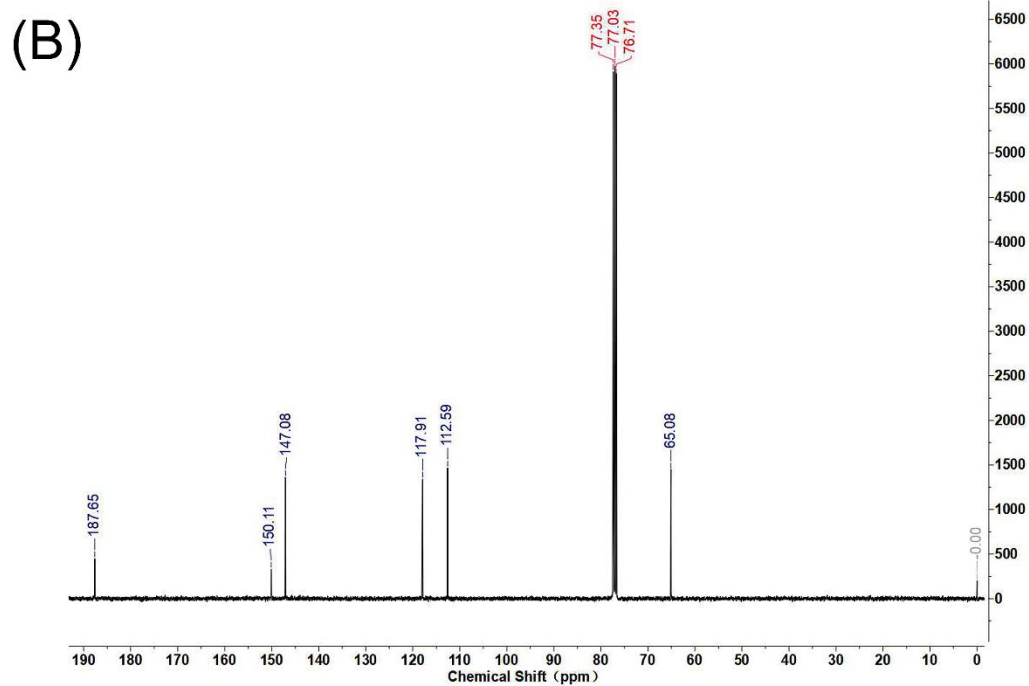
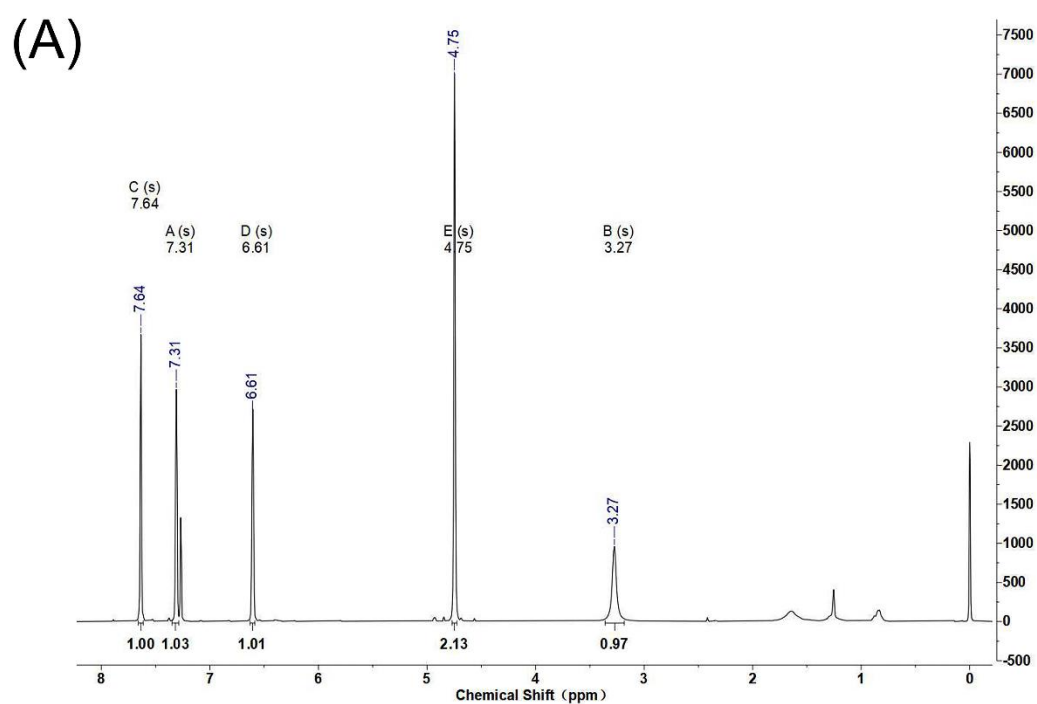
**Figure S1** SDS-PAGE analysis of ThDP-dependent enzymes' supernatants. Lane M: protein marker; Lane 1-21 are corresponding to ThDP-1 to ThDP-21.



**Figure S2** HPLC chromatogram of furfural and 2-FHMK. (A) HPLC chromatogram of furfural standard. (B) HPLC chromatogram of 2-FHMK standard. (C) HPLC chromatogram of sample from biotransformation of furfural to 2-FHMK with SsPDC.



**Figure S3** NMR spectra of 2-FHMK standard. (A)  $^1\text{H}$ -NMR spectra of 2-FHMK standard. (B)  $^{13}\text{C}$ -NMR spectra of 2-FHMK standard.



**Figure S4** NMR spectra of product 2-FHMK catalyzed by SsPDC. (A)<sup>1</sup>H-NMR spectra of product 2-FHMK catalyzed by cell-free extracts of SsPDC. (B)<sup>13</sup>C-NMR spectra of product 2-FHMK catalyzed by cell-free extracts of SsPDC.