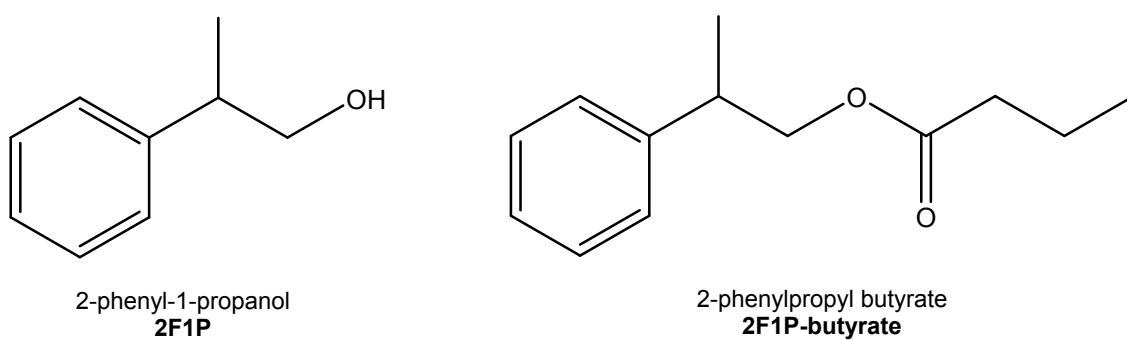
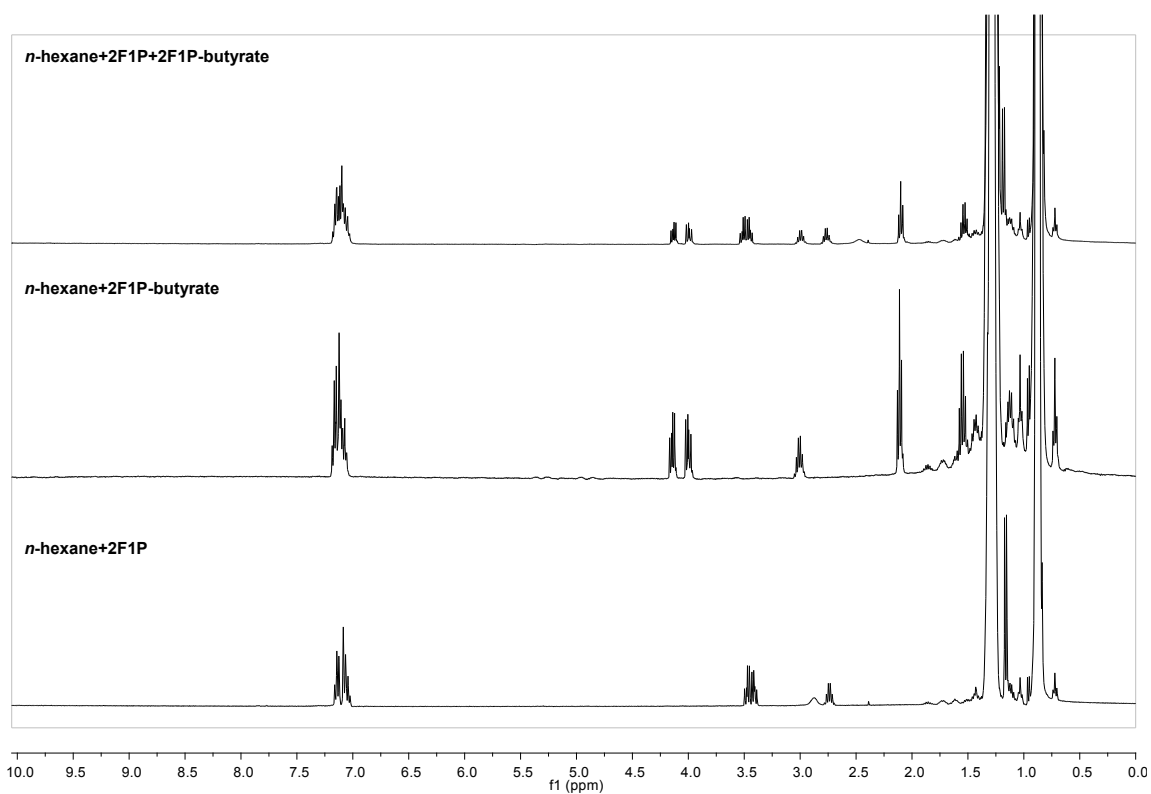


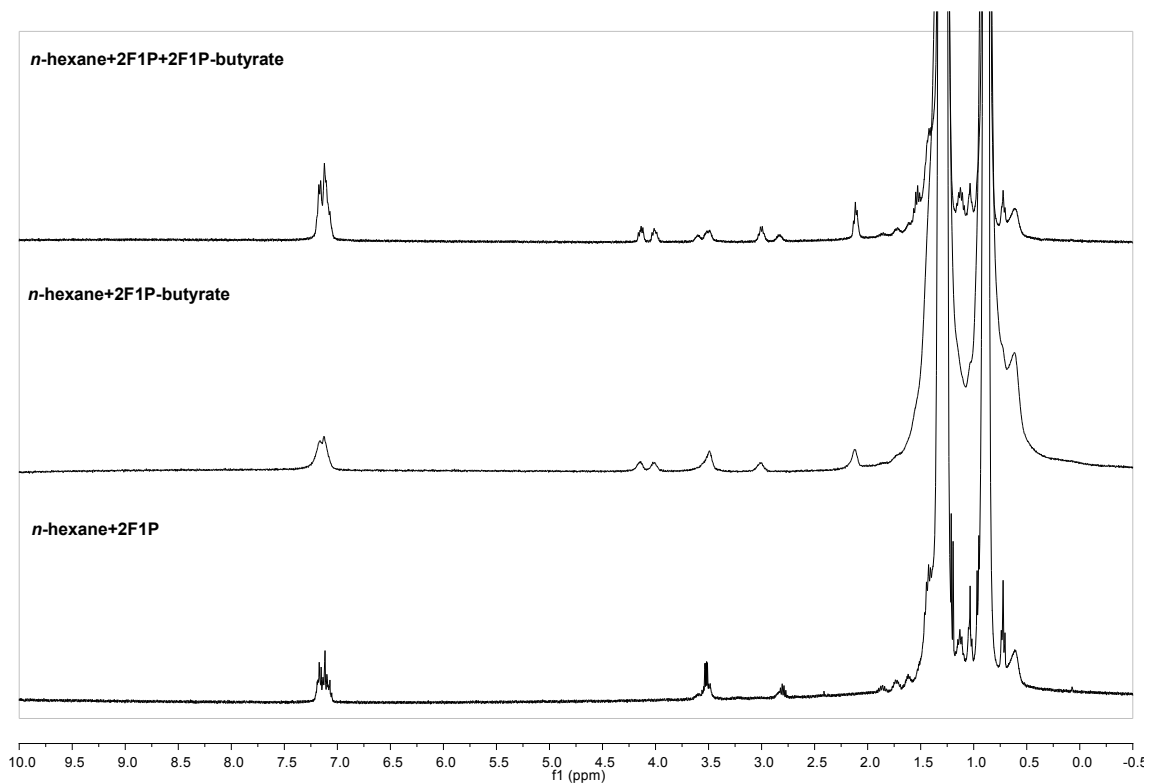
## Electronic Supplementary Information



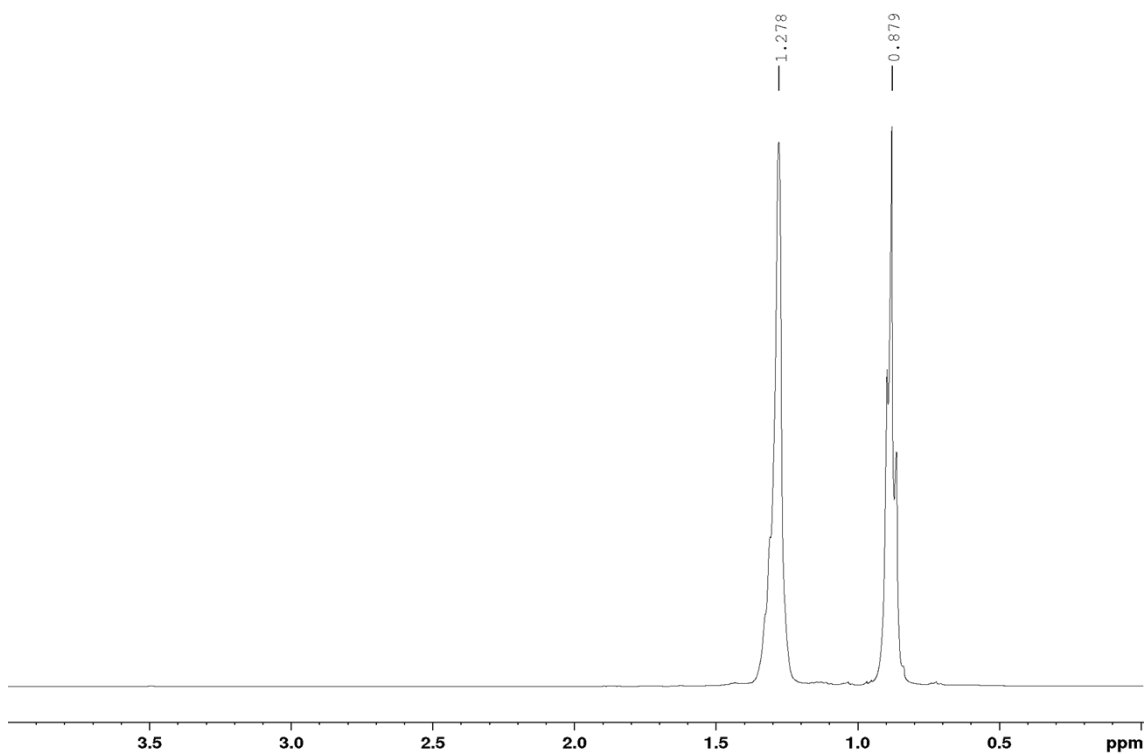
**Figure S 1.** Chemical structures of the reactions species.



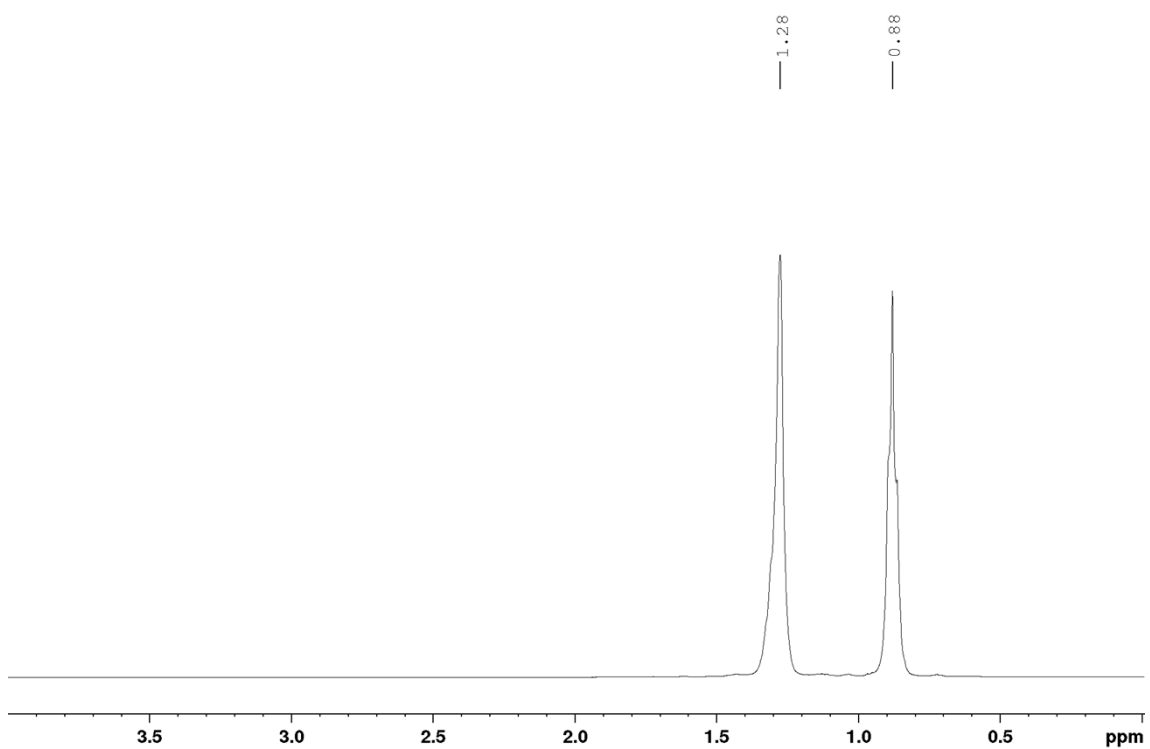
**Figure S 2.** <sup>1</sup>H NMR spectra of *n*-hexane solutions of 2F1P, 2F1P-butyrates, and mixture.



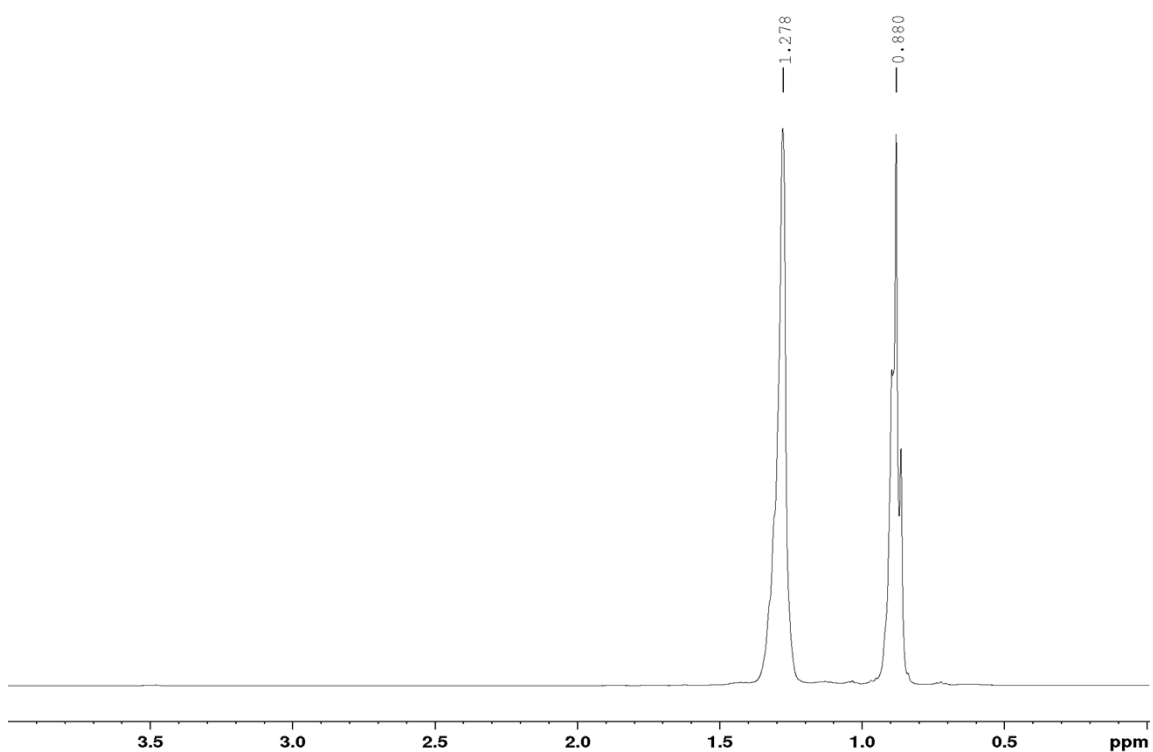
**Figure S 3.** <sup>1</sup>H NMR spectra of *n*-hexane solutions of 2F1P, 2F1P-butyrate, and mixture, in the presence of TMOS/BTMS matrix.



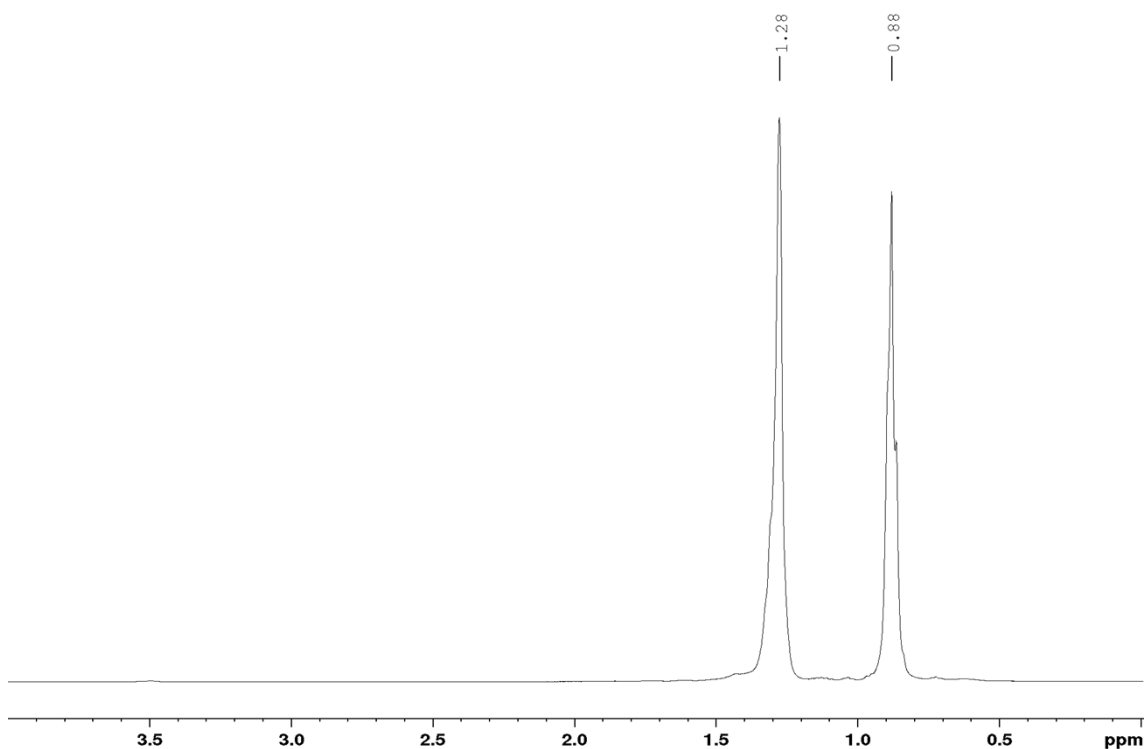
**Figure S 4.** <sup>1</sup>H NMR spectrum of *n*-hexane in the presence of TMOS/BTMS matrix.



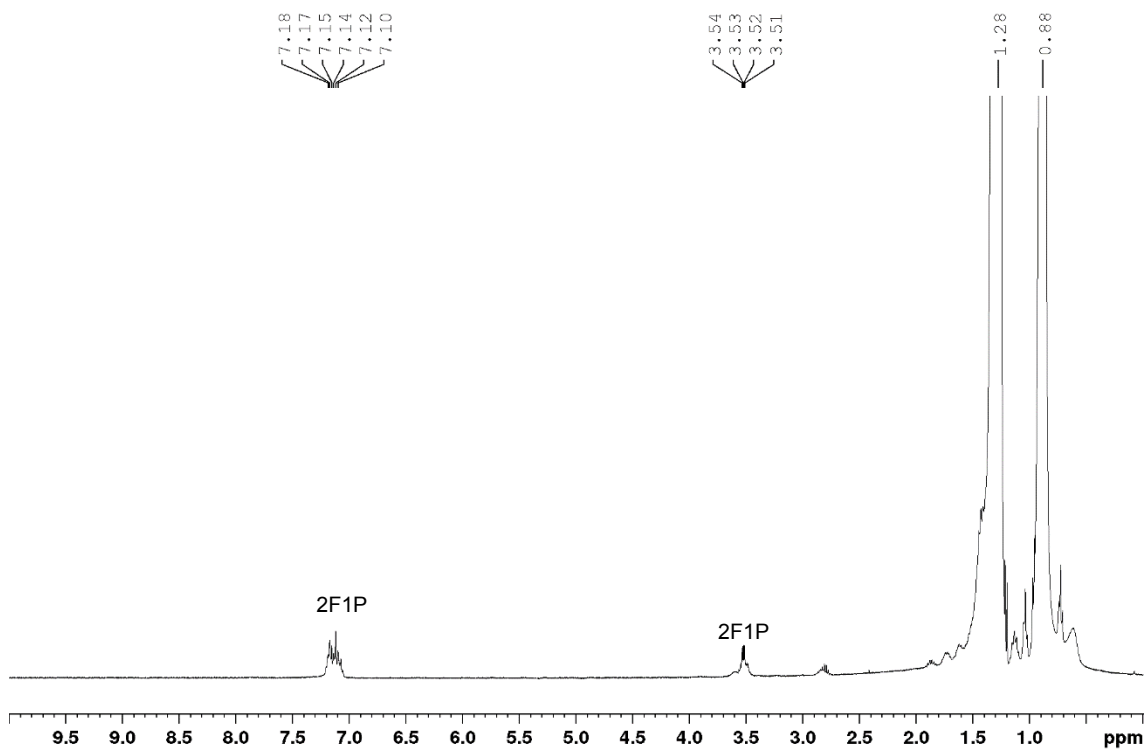
**Figure S 5.** <sup>1</sup>H NMR spectrum of *n*-hexane in the presence of TMOS/BTMS matrix with 0.5% of cutinase.



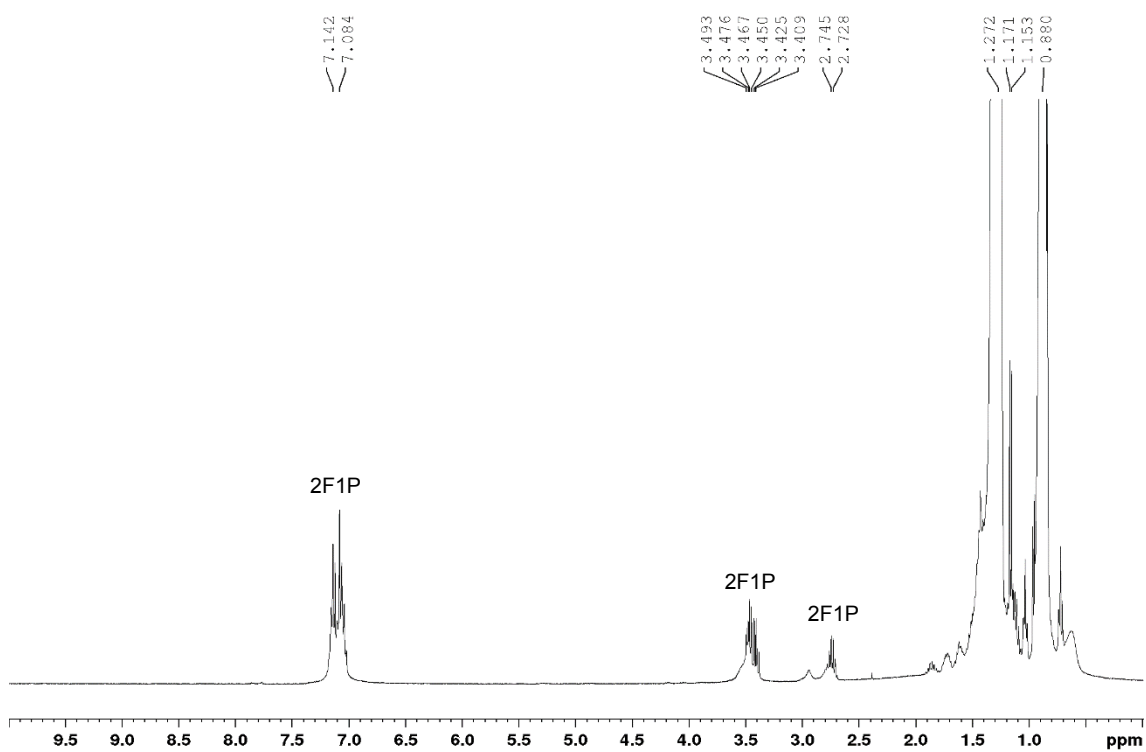
**Figure S 6.** <sup>1</sup>H NMR spectrum of *n*-hexane in the presence of TMOS/BTMS matrix with 1.0% of cutinase.



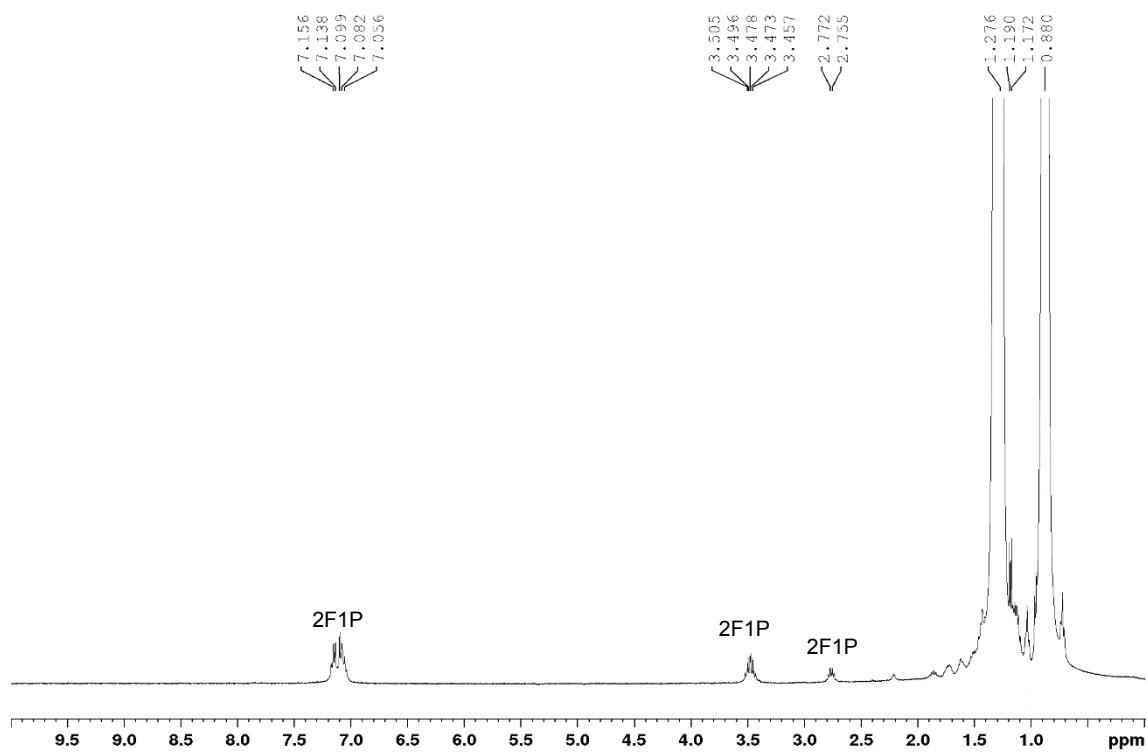
**Figure S 7.**  $^1\text{H}$  NMR spectrum of *n*-hexane in the presence of TMOS/BTMS matrix with 2.5% of cutinase.



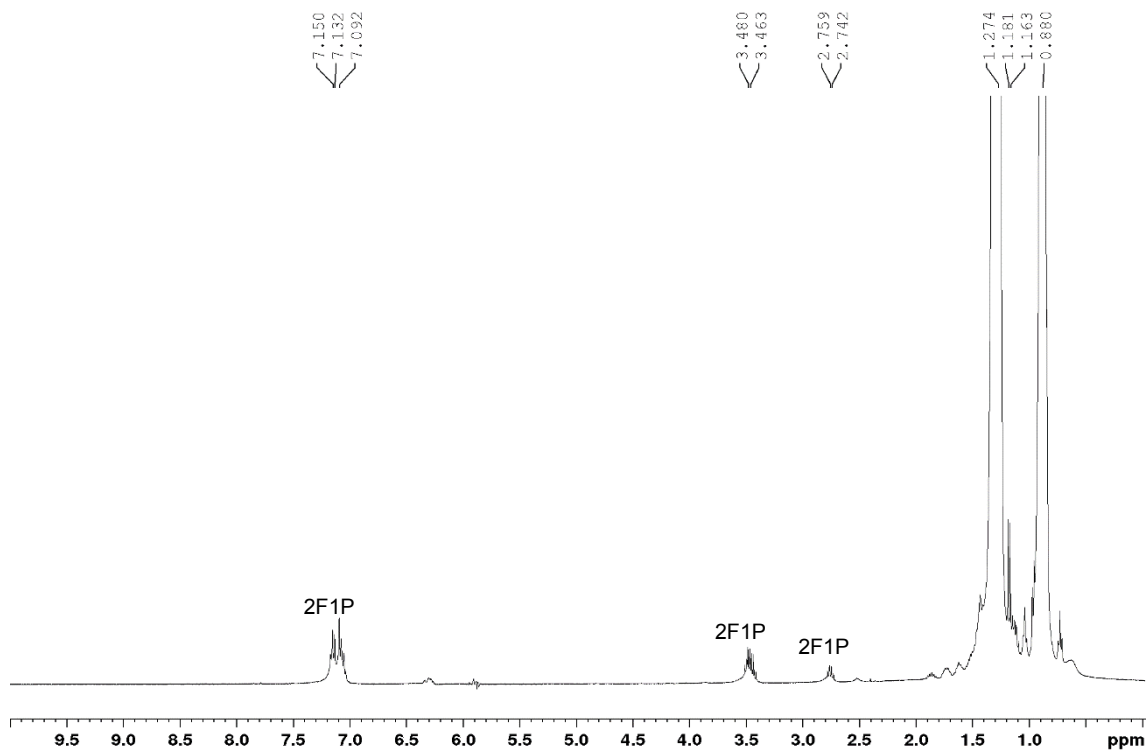
**Figure S 8.**  $^1\text{H}$  NMR spectrum of *n*-hexane+2F1P in the presence of TMOS/BTMS matrix.



**Figure S 9.**  $^1\text{H}$  NMR spectrum of *n*-hexane+2F1P in the presence of TMOS/BTMS matrix with 0.5% of cutinase.



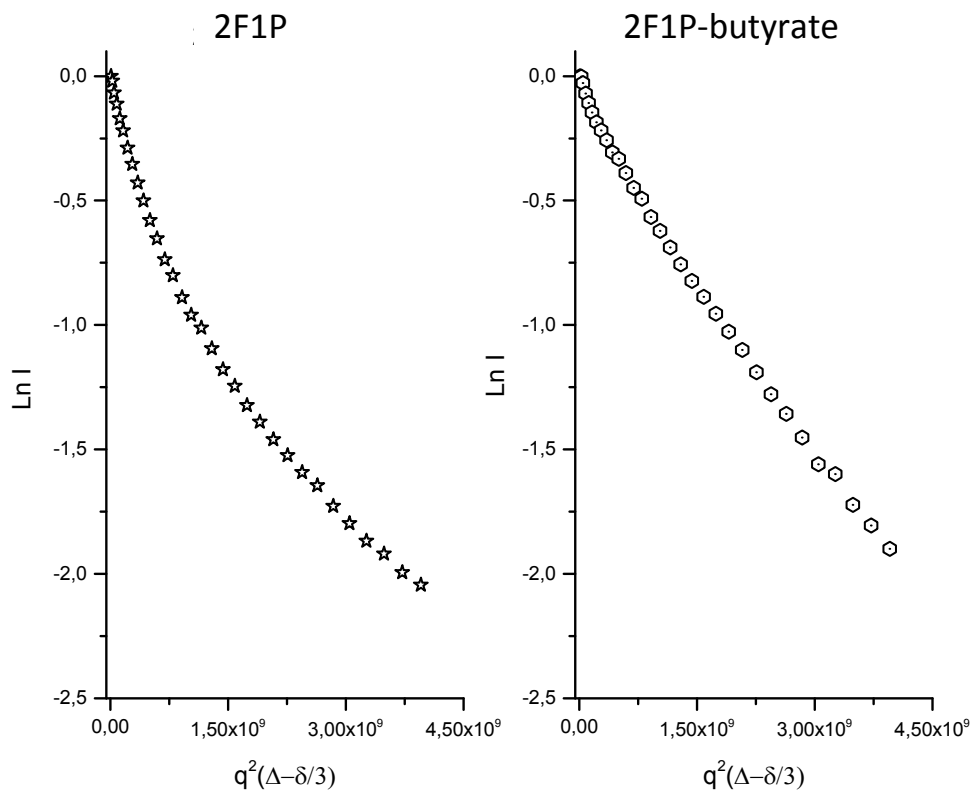
**Figure S 10.**  $^1\text{H}$  NMR spectrum of *n*-hexane+2F1P in the presence of TMOS/BTMS matrix with 1.0% of cutinase.



**Figure S 11.**  $^1\text{H}$  NMR spectrum of *n*-hexane+2F1P in the presence of TMOS/BTMS matrix with 2.5% of cutinase.

**Table S 1.** Self-diffusion coefficients, *D*, determined by HR-MAS PFGSE NMR for liquid solutions.

System	Diffusion coefficient ( $\times 10^{-9} \text{ m}^2\text{s}^{-1}$ )		
	<i>n</i> -hexane	2F1P	2F1P-butyrate
<i>n</i> -hexane	4.33±0.02	---	---
<i>n</i> -hexane+2F1P	4.30±0.01	2.62±0.02	---
<i>n</i> -hexane+2F1P-butyrate	3.89±0.02	---	2.34±0.02
<i>n</i> -hexane+2F1P+2F1P-butyrate	3.82±0.02	2.35±0.02	2.36±0.01



**Figure S 12.** Echo amplitude vs.  $q^2(\Delta-\delta/3)$  for 2F1P or 2F1P-butyrate in *n*-hexane, in the presence of the TMOS/BTMS sol-gel matrix without enzyme.

**Table S 2.** Self-diffusion coefficients,  $D_i$ , and respective populations,  $p_i$ , determined by HR-MAS PFGSE NMR for the studied solutions in TMOS/BTMS matrix.

System	Diffusion coefficient ( $\times 10^{-9} \text{ m}^2 \text{ s}^{-1}$ )								2F1P-butyrate D
	<i>n</i> -hexane				2F1P				
	$D_{\text{fast}}$	$D_{\text{slow}}$	$p_{\text{fast}}$	$p_{\text{slow}}$	$D_{\text{fast}}$	$D_{\text{slow}}$	$p_{\text{fast}}$	$p_{\text{slow}}$	
<i>n</i> -hexane	2.73 $\pm 0.04$	0.53 $\pm 0.02$	0.80 $\pm 0.01$	0.20 $\pm 0.01$	---	---	---	---	---
<i>n</i> -hexane+2F1P	2.86 $\pm 0.06$	0.56 $\pm 0.03$	0.76 $\pm 0.01$	0.24 $\pm 0.01$	2.48 $\pm 0.08$	0.36 $\pm 0.01$	0.52 $\pm 0.01$	0.48 $\pm 0.01$	---
<i>n</i> -hexane+2F1P-butyrate	1.65 $\pm 0.02$	0.24 $\pm 0.03$	0.71 $\pm 0.01$	0.29 $\pm 0.01$	---	---	---	---	0.52 $\pm 0.01$