Figure S1

A) chromatogram of anhydrous phase reaction systems I: glyceryl tributyrate (0.1 g), methanol (136 μL), D380 resin (0.8 mg) immobilized TrLipB and dodecane (5 mL); B) chromatogram of anhydrous phase reaction systems II: glyceryl tributyrate (0.1 g), ethanol (193 μL), D380 resin (0.8 mg) immobilized TrLipB and dodecane (5 mL); C) chromatogram of anhydrous phase reaction systems III: methyl butyrate (0.1 g), ethanol (578 μL), D380 resin (0.8 mg) immobilized TrLipB and dodecane (5 mL); D) chromatogram of anhydrous phase reaction systems IV: ethyl butyrate (0.1 g), methanol (355 μL), D380 resin (0.8 mg) immobilized TrLipB and dodecane (5 mL).

Figure S2

A) the mass spectra of anhydrous phase reaction systems I; B) the mass spectra of anhydrous phase reaction systems II; C) the mass spectra of anhydrous phase reaction systems III; D) the mass spectra of anhydrous phase reaction systems IV.

Figure S1

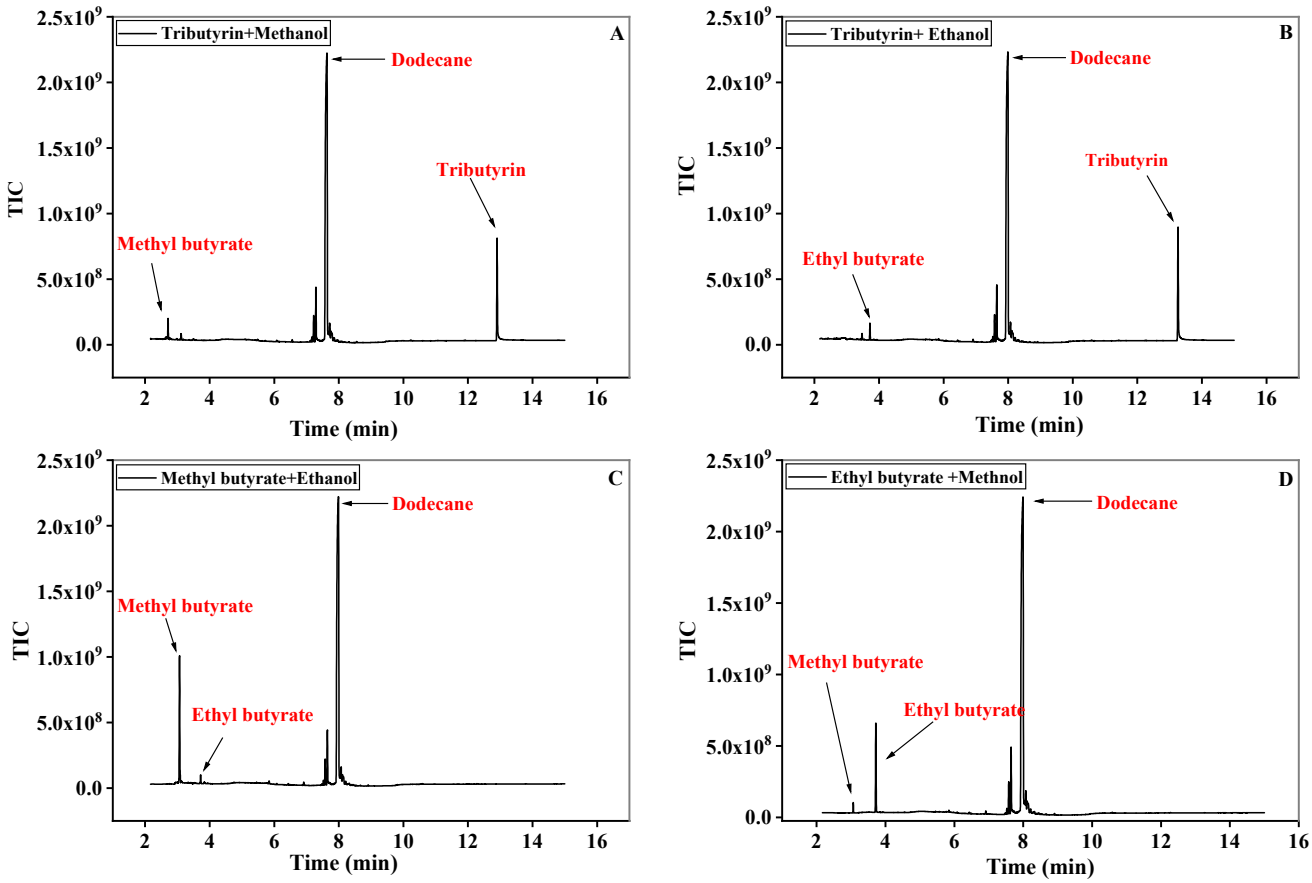
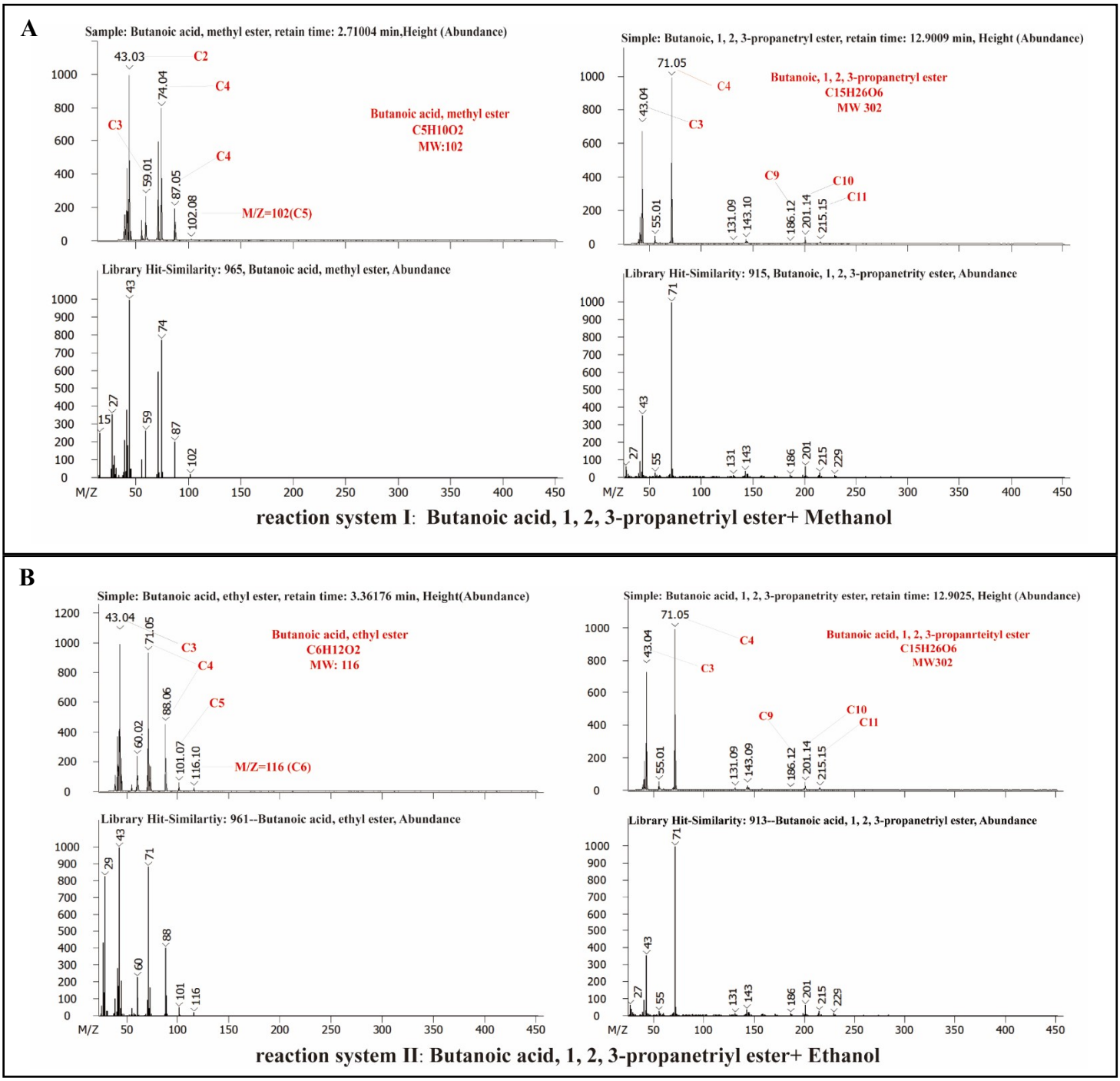
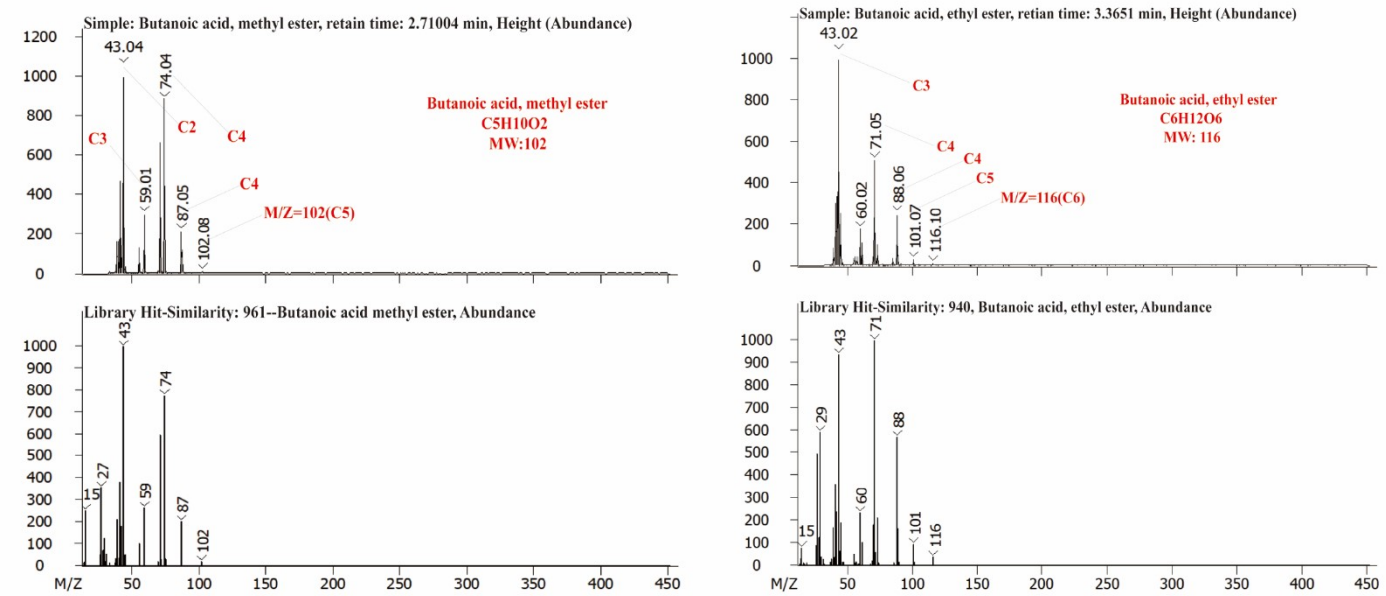

Tributyrin+Methanol
A
Dodecane
Tributyrin
Methyl butyrate
Tributyrin+ Ethanol
B
Dodecane
Tributyrin
Ethyl butyrate
Methyl butyrate+Ethanol
C
Dodecane
Methyl butyrate
Ethyl butyrate
Ethyl butyrate +Methnol
D
Dodecane
Methyl butyrate
Ethyl butyrate
TIC
Time (min)

Figure S2

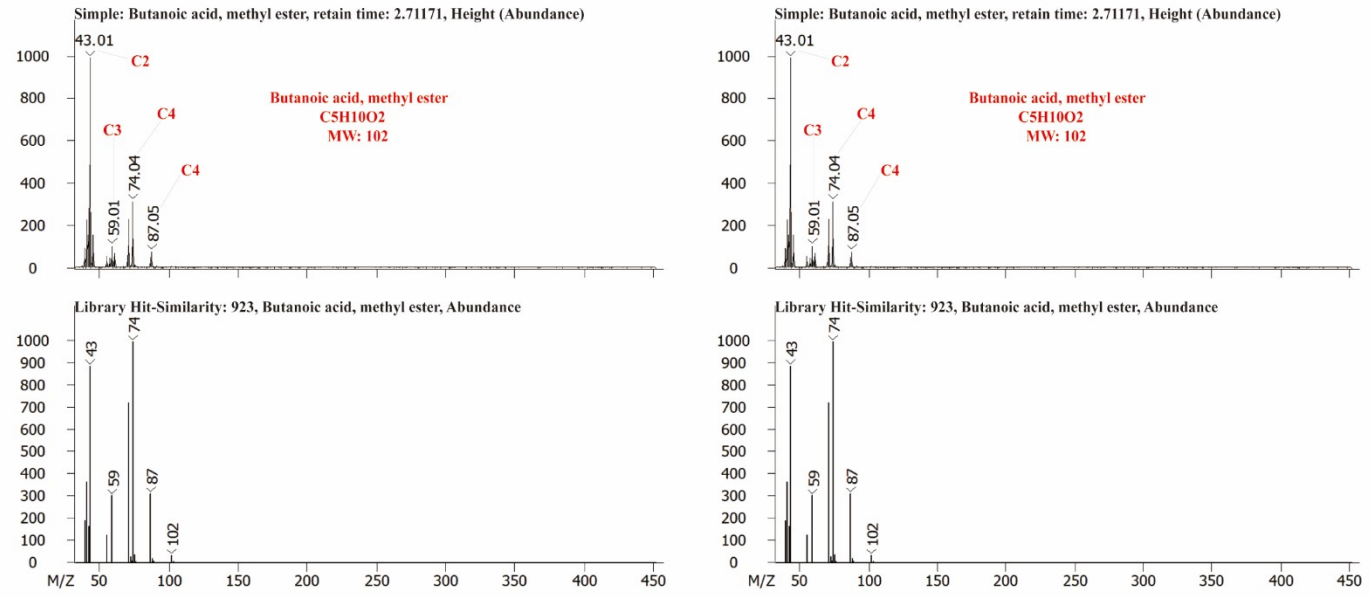

A
Sample: Butanoic acid, methyl ester, retain time: 2.71004 min,Height (Abundance)
Butanoic acid, methyl ester
C5H10O2
MW:102
M/Z=102(C5)
Simple: Butanoic, 1, 2, 3-propanetryl ester, retain time: 12.9009 min, Height (Abundance)
Butanoic, 1, 2, 3-propanetryl ester
C15H26O6
MW 302
Library Hit-Similarity: 965, Butanoic acid, methyl ester, Abundance
Library Hit-Similarity: 915, Butanoic, 1, 2, 3-propanetrity ester, Abundance
reaction system I: Butanoic acid, 1, 2, 3-propanetriyl ester+ Methanol
B
Simple: Butanoic acid, ethyl ester, retain time: 3.36176 min, Height(Abundance)
Butanoic acid, ethyl ester
C6H12O2
MW: 116
M/Z=116 (C6)
Simple: Butanoic acid, 1, 2, 3-propanetrity ester, retain time: 12.9025, Height (Abundance)
Butanoic acid, 1, 2, 3-propanrteityl ester
C15H26O6
MW302
Library Hit-Similartiy: 961--Butanoic acid, ethyl ester, Abundance
Library Hit-Similarity: 913--Butanoic acid, 1, 2, 3-propanetriyl ester, Abundance
reaction system II: Butanoic acid, 1, 2, 3-propanetriyl ester+ Ethanol

C



reaction system III: Methyl butyrate + Ethanol

D



reaction system IV: Ethyl butyrate + Methanol

Table S1. Molar conversion rate of transesterification reaction

	Molar conversion rate (%)			
Time (hrs)	Tributyrin+Methanol	Tributyrin+ Ethanol	Methyl butyrate+Ethanol	Ethyl butyrate+Methanol
12 h	8.17	5.7	0.31	0.18
24 h	10.03	7.63	0.34	0.19
36 h	12.6	10.43	0.37	0.5
48 h	15.44	13.02	0.38	0.56
60 h	19.42	15.66	0.42	0.59
72 h	23.32	18.1	0.46	0.62