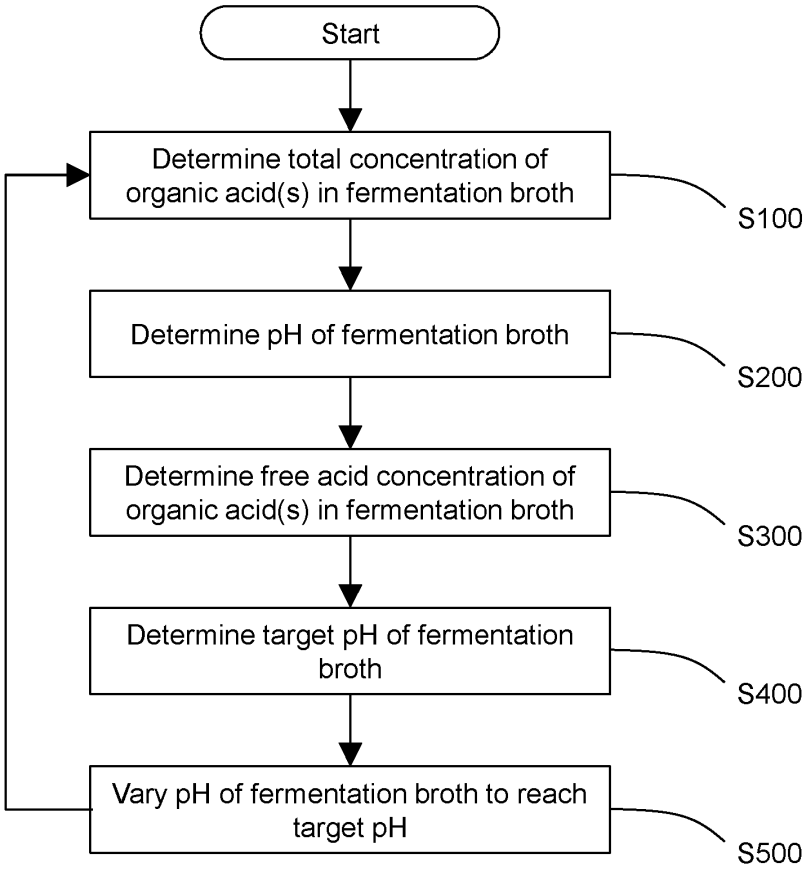

Start
Determine total concentration of organic acid(s) in fermentation broth
S100
Determine pH of fermentation broth
S200
Determine free acid concentration of organic acid(s) in fermentation broth
S300
Determine target pH of fermentation broth
S400
Vary pH of fermentation broth to reach target pH
S500

Fig. 1

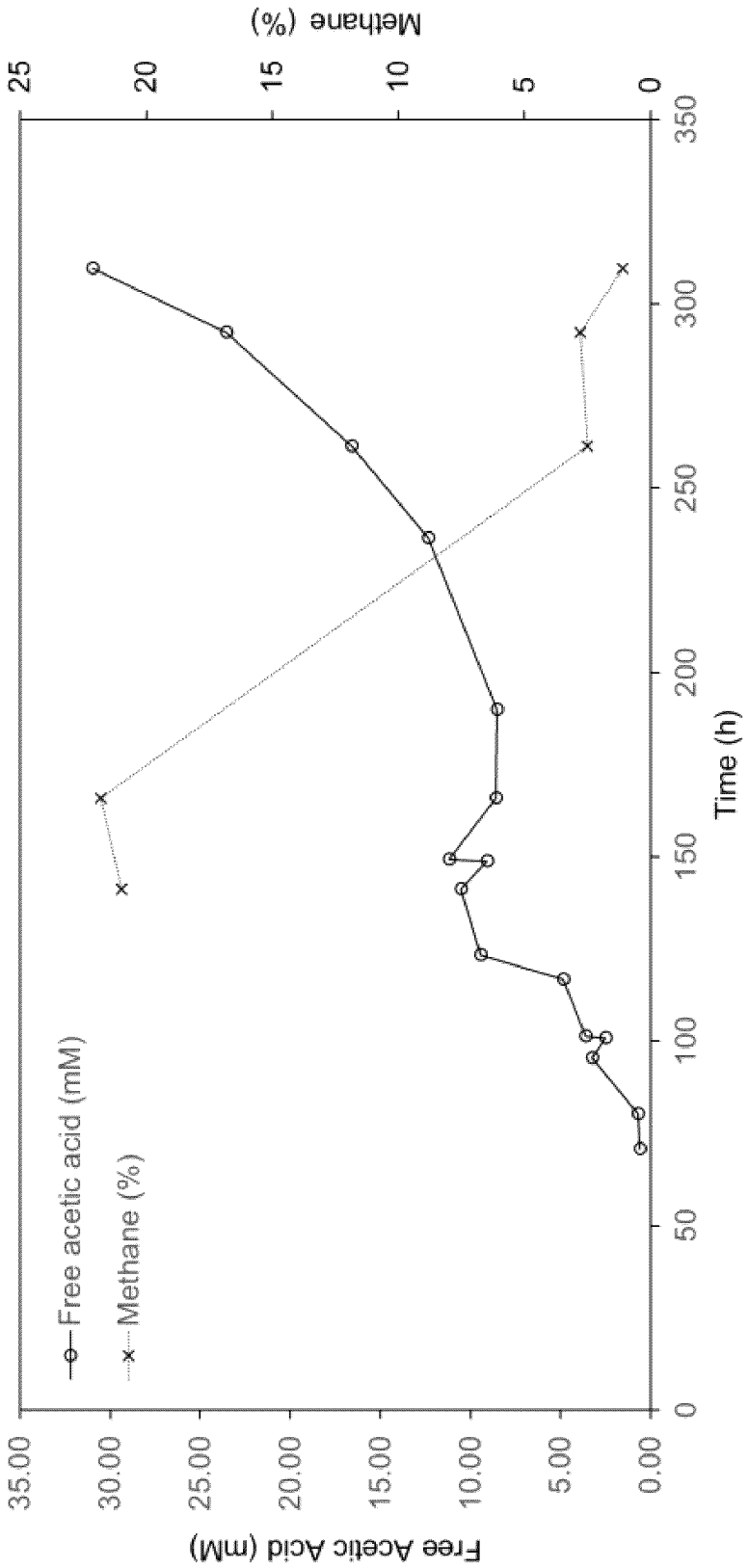

Free Acetic Acid (mM)
Methane (%)
Time (h)
Free acetic acid (mM)
Methane (%)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
0
5
10
15
20
25
0
50
100
150
200
250
300
350

Fig. 2

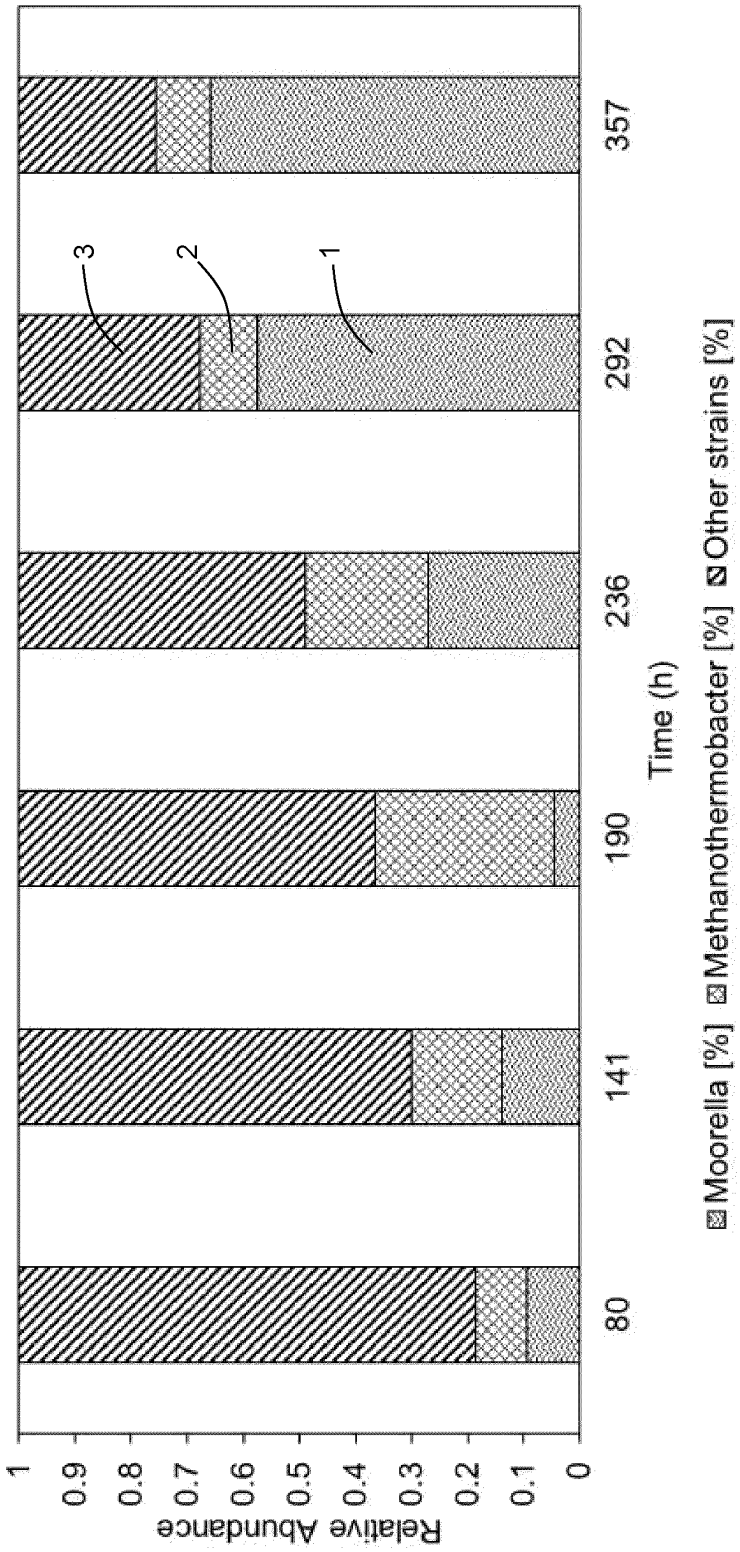

Relative Abundance
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
80
141
190
236
292
357
Time (h)
Moorella [%] 1
Methanothermobacter [%] 2
Other strains [%] 3
1
2
3

Fig. 3

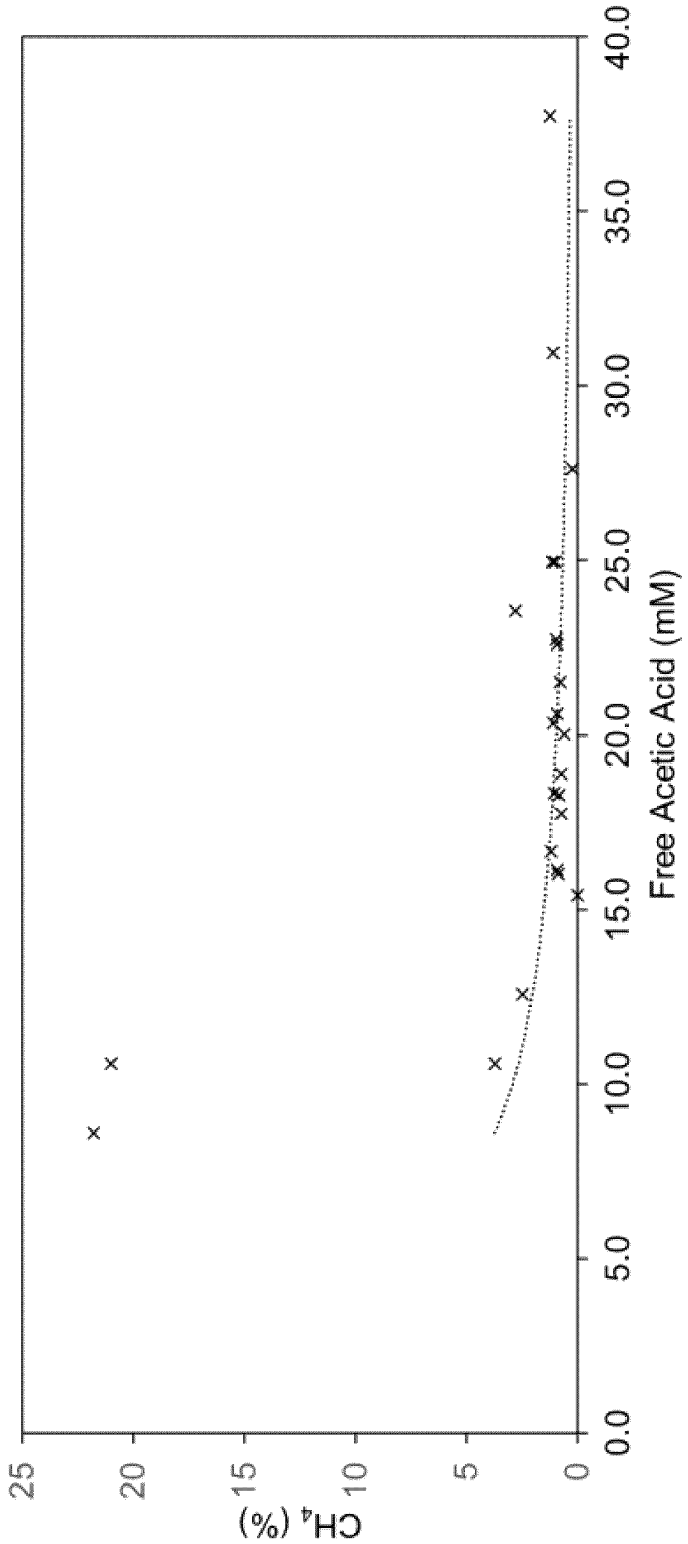

CH4 (%)
25
20
15
10
5
0
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
Free Acetic Acid (mM)

Fig. 4