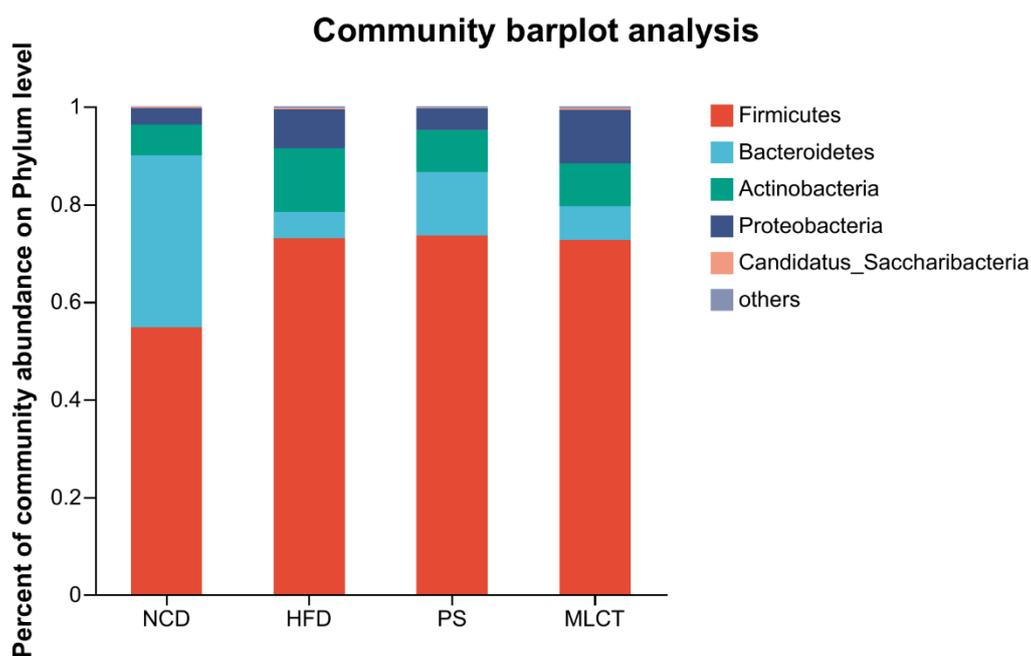


## Preparation of MLCT

5 g of algal oil and 8.48 g of LA (molar ratio 1:8) were added into a one-necked round bottom flask (50 mL) capped with a rubber stopper, and incubated at 65 °C in a shaking water bath at 150 rpm. After the substrates mixture were homogenous, TL lipases was added to initiate the reaction as the amount of 8% of total weight of the substrates, respectively. The reaction was held for 3 h, and then the lipases were removed from the substrates by filtration for the collection of products.

**Table S1. The fatty acid composition of MLCT**

Fatty acid	Contents (%)	Sn-2 position contents (%)
C12:0	50.88 ± 0.18	18.56 ± 0.11
C14:0	0.58 ± 0.03	-
C16:0	34.41 ± 0.45	59.91 ± 0.59
C18:0	2.47 ± 0.05	1.09 ± 0.03
C18:1	9.06 ± 0.22	15.03 ± 0.17
C18:2	2.6 ± 0.07	5.68 ± 0.09



**Figure S1.** Community barplot analysis at Phylum.