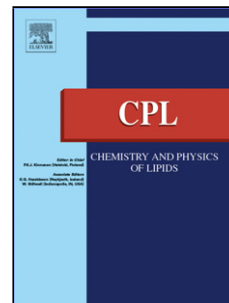


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## Physicochemical characterization of 6-O-acyl trehalose fatty acid monoesters in desiccated system

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### Highlights:

- TREN (n = 10, 12, 14, 16) formed LC phases such as L $\alpha$  and Q phases, which became glassy LC phases below  $T_g$  (ca. 78 °C).
- A reversible phase transition between the L $\alpha$  and the L $\beta$  phases occurred in the glassy phase for TREN (n = 14, 16).
- A strong evidence that the hydrocarbon chain in the glassy state can be fluid-like rather than glassy-like was provided.
- TREN formed monohydrate Cr, which showed similar dehydration temperature independent on the acyl chain length.
- The glassy L $\alpha$  (L $\alpha$ -G) phase kinetically formed when the dehydration occurred under vacuum condition below  $T_g$ .

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