

[Available Issues](#) | [Japanese](#)

Author:  [ADVANCED](#) | Volume  Page   
 Keyword:



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > Abstract

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[\[PDF \(445K\)\]](#) [\[ \]](#)

**Synthesis of Either Mono- or Diacylglycerol from High Oleic Sunflower Oil by Lipase-Catalyzed Glycerolysis**

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The difference in reaction conditions between the syntheses of monoacylglycerol (MAG and DAG) was elucidated in terms of the enzymatic glycerolysis of sunflower oil containing 89% oleic acid. The most efficient lipases were lipoprotein lipase and the lipase from *Pseudomonas cepacia* for the syntheses, respectively. In each case, the glycerol amount to be added

yield was 1.5-fold larger than the stoichiometric amount that is necessary for the glycerolysis reaction. The addition of a small amount of acetone to the reaction was only slightly effective on the yield of MAG. The control of the reaction conditions is very important, and the critical temperature, below which the yield of monooleoylglycerol significantly increased, was found to be lower for DAG synthesis than for MAG synthesis. The reaction time that was required to obtain a maximum yield was 3-fold longer for MAG synthesis, while it was 6-fold longer for DAG synthesis. The content of monooleoylglycerol approached 90 and 80% in the lipid reaction products for MAG and DAG synthesis, respectively. On the other hand, the content of DAG was 82%, of which the fatty acid composition was similar to that of the original oil.

**Keywords:** [acetone](#), [monooleoylglycerol](#), [glycerolysis](#), [high-oleic sunflower oil](#), [monoacylglycerol](#), [diacylglycerol](#)

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