

Mono-and diglycerides

Cat. No.:	HY-135297		
Target:	Biochemical Assay Reagents		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month

Mono-and diglycerides

SOLVENT & SOLUBILITY

In Vivo

- Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 1 mg/mL (Infinity mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 90% corn oil
Solubility: ≥ 1 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mono-and diglycerides is formed by triglycerides being broken down by pancreatic lipase in the gastrointestinal lumen. Mono-and diglycerides is a food additive used as a nonionic emulsifier and mainly present in food fats^{[1][2]}.

In Vitro

Squalene and Mono-and diglycerides on the frying stability of olive pomace oil is determined. Refined olive pomace oil is distilled using a falling film type short-path distillation unit at 230 $\bar{\text{K}}$ under a pressure of 0.02 mbar to remove minor components. Distilled olive pomace oil is introduced with approximately 10,000 mg/kg of squalene and 2.5% of Mono-and diglycerides. Fryings are performed 8 times/day at 180 °C for 3 min. All criteria except smoke point and iodine value increased in all fractions during fryings. The lowest total polar compound is obtained in distilled olive pomace oil while polymerized triglycerides is the lowest in the Mono-and diglycerides added fraction^[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

In the body, the triglycerides undergo digestion in the gastrointestinal lumen. Triglycerides are broken down mainly by pancreatic lipase with the formation of Mono-and diglycerides. Mono-and diglycerides are absorbed into the intestinal cells. In their passage through the intestinal mucosa Mono-and diglycerides are largely converted back into triglycerides. These pass into the body as a fine emulsion and give rise to the milky appearance of the chyle and the blood plasma. Under certain circumstances, these fat particles can be broken down by another fat-splitting enzyme in the blood-stream. When this occurs, the formation of Mono-and diglycerides can be demonstrated^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Toxicological evaluation of some food additives including anticaking agents, antimicrobials, antioxidants, emulsifiers and thickening agents. WHO FOOD ADDITIVES

SERIES NO. 5.

[2]. MasatoshiKako, et al. The stability of soybean oil-water emulsions containing mono- and diglycerides. Journal of Colloid and Interface Science. Volume 69, Issue 1, 15 March 1979, Pages 163-169.

[3]. Sahin Ozkan K, et al. Utilization of molecular distillation for determining the effects of some minor compounds on the quality and frying stability of olive pomace oil. J Food Sci Technol. 2019 Jul;56(7):3449-3460.

Caution: Product has not been fully validated for medical applications. For research use only.

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