Monoacylglycerol of 1-adamantanecarboxylic Acid Preparation

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Monoacylglycerols are substances widely used in food industry, cosmetic industry as well as in pharmaceutical industry because of their antimicrobial and antifungal properties. The aim of this study was preparation of monoacylglycerol of 1-adamantanecarboxylic acid (Tricyclo [3.3.1.1(3,7)]decan-1-Carboxylic acid), in order to use it as a germicidal agent. Monoacylglycerol of 1-adamantanecarboxylic acid was prepared by the reaction of 1-adamantane carboxylic acid with glycidol (2, 3-epoxy-1-propanol, oxiran – 2 yl - methanol) in a toluene. Chromium (III) acetate hydroxide was used as a catalyst. During the optimization of reaction conditions revealed that the highest conversion 98, 76 % was reached after 150 minutes in temperature 96 ºC, molar ratio between acid and glycidol 1 : 1, 8, amount of catalyst 0, 5 % w / w and toluene in amount 8 ml for 1 g of MAG. Amount of Cr (III) decreased by 51, 99 % when ethanolic 0, 1 M was used.

Temperature dependent behavior and structural changes of the final reaction product were subsequently monitored using differential scanning calorimetry (DSC) and heat exchanges involved in a phase transition yielded exothermic or endothermic peaks were recorded. From these measurements, the transition temperatures and the latent heat was estimated.

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