

Simple Preparation of Pure Ricinoleic Acid Methyl Ester out of Castor Oil

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Ricinoleic acid, the main fatty acid in ricinoleic acid, is a versatile building block for further chemical transformations. Commercially available ricinoleic acid has a purity of about 80 %, and analytical grade ricinoleic acid methyl ester with a purity of higher than 99.0 % is rather expensive. We want to describe a very easy and straightforward approach for the preparation of gram quantities of ricinoleic acid methyl ester starting from castor oil. The castor oil was transesterified with methanol and KOH in several steps in order to get high conversion into the corresponding methyl esters. The final product was distilled in order to remove unreacted glycerides. 2.5 grams of the resulting FAME were separated with dry flash chromatography using silica gel and petrol ether/diethylether as mobile phase. Monitoring the separation with TLC finally 1.5 g of ricinoleic acid with a purity of over 99.5 % could be recovered.