

论文

环己酮与丙烯酸甲酯及(S)-3-(2'-氧环己基)-丙酸与醇的酯化反应

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摘要:

在(R)TTCA·K催化下由环己酮直接与丙烯酸甲酯进行Michael加成反应得到了(S)-3-(2'-氧环己基)-丙酸甲酯, [α]_D²⁰-4.14(41.5% e.e.).

关键词: Fe₂(SO₄)₃·xH₂O; 光活性3-(2'-氧环己基)-丙酸甲酯; 光活性3-(2'-氧环己基)-丙酸乙酯; 光活性3-(2'-氧环己基)-丙酸丁酯; (R)-四氢噻唑-2-硫酮-4-羧酸钾盐

Esterifications of Cyclohexanone with Methyl Acrylate and (S)-3-(2'-Oxocyclohexyl)-propionic Acid with Alcohols

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Abstract:

The esterification of carboxylic acid with alcohol in the presence of catalytic amounts of mineral acids is one of the most methods for preparing esters. The catalysts generally preferred are sulfuric acid or p-toluenesulfonic acid. But the products esters were racemic when (S)-3-(2'-oxocyclohexyl) propionic acid reacts with alcohols in the presence of sulfuric acid or with p-toluenesulfonic acid as catalyst. We replace sulfuric acid with Fe₂(SO₄)₃·xH₂O as the catalyst. The optical compound (S)-methyl-3-(2'-oxocyclohexyl)propionate, (S)-ethyl-3-(2'-oxocyclohexyl)propionate and (S)-n-butyl-3-(2'-oxocyclohexyl)propionate were obtained. In this paper we also reported that cyclohexanone reacted with methyl acrylate in the presence of potassium thiazolidine-2-thione-4-carboxylate (R)TTCA·K as the chiral catalyst to afford optically active (S)-3-(2'-oxocyclohexyl) propionate. The mechanism of reaction of cyclohexanone with methyl acrylate in the presence of (R)TTCA·K as the catalyst would be a complex process.

Keywords: Fe₂(SO₄)₃·xH₂O; Optically active methyl-3-(2'-oxocyclohexyl)-propionate; Optically active ethyl-3-(2'-oxocyclohexyl)propionate; Optically active n-butyl-3-(2'-oxocyclohexyl)propionate; (R)-potassium thiazolidine-2-thione-4-carboxylate

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