



Cross aldol condensation

Preparation of 1-(4-methoxyphenyl)-3-phenylprop-2-en-1-one

Introduction

Aldol condensations represent an important class of carbon-carbon bond formation reactions both in nature and in synthetic chemistry. Compounds called chalcones (or chalconoids) can be prepared by the cross aldol condensation (When condensation is between two different carbonyl compounds, it is called crossed aldol condensation) of an aromatic ketone and an aldehyde.

Crossed aldol condensation of this type proceed in a high yield, because benzaldehyde cannot with itself by an aldol condensation reaction because it has no α -hydrogen. likewise, ketones do not react easily with themselves in aqueous base. Therefore, the only possibility is for a ketone to react with benzaldehyde.

Chalcones :

are α , β unsaturated aromatic ketones containing the reactive keto ethylene group $-\text{CO}-\text{CH}=\text{CH}-$. Many of the chalcones are highly biological active which have medicinal and pharmaceutical applications.

Chalcones and their derivatives have a wide range of biological activities such as anti-diabetic, anti-neoplastic, anti-hypertensive, anti-obesity, anti-platelet, anti-tubercular.

In this experiment 1-(4-methoxyphenyl)-3-phenylprop-2-en-1-one, obtained through a cross aldol condensation of 4-Methoxybenzaldehyde and Acetophenone, will be synthesized in a one pot reaction.

