

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

Introduction

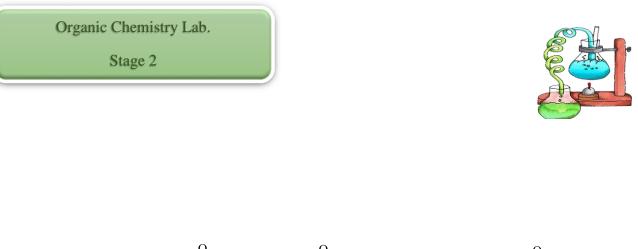
Aldol condensations represent an important class of carbon -carbon bond formation reactions both in nature and in synthetic chemistry. Compounds called chalcones (or chalconoids) can be prepared by the cross aldol condensation (<u>When condensation is between two different carbonyl compounds, it is called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

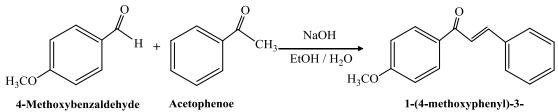
Crossed aldol condensation of this type proceed in a high yield, because benzaldehyde cannot with itself by an aldol condensation reaction because it has no α -hydrogen. likewise, ketones do not react easily with themselves in aqueous base. Therefore, the only possibility is for a ketone to react with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

Chalcones :

are α , β unsaturated aromatic ketones containing the reactive keto ethylene group –CO– CH=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, antiplatelet, 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.





phenylprop-2-en-1-one