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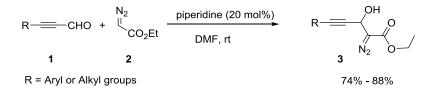
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Graphic abstract



Highlights

- Efficient synthesis of complex diazo compounds containing propargyl alcohol
- Aldol reaction of alkynyl aldehydes and ethyl diazoacetate
- Easy operation, ambient temperature, good yields
- Broad functional group tolerance

Keywords:

Aldol reaction, piperidine, diazoacetate, alkynyl aldehyde

Abstract

Complex diazo compounds containing propargyl alcohol functional group were prepared by an efficient aldol reaction of alkynyl aldehydes and ethyl diazoacetate in good yields. Piperidine was utilized as a base to catalyze this transformation. The aldol reaction showed broad substrate scopes and good functional group compatibility.

Introduction

 α -Diazocarbonyl compounds have been extensively utilized in organic synthesis because they can undergo a wide variety of useful tranformations under mild reaction conditions.¹ \Box For example, $\Box \alpha$ -Diazocarbonyl compounds are widely used as nucleophiles when treated with base to prepare complex diazo compounds (Scheme 1). A base promoted deprotonation of acyl diazomethane generates an anion bearing a diazo group. This anion is highly reactive and readily react with C=O or C=N bonds to provide nucleophilic addition products.

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