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### Piperidine Promoted Aldol Reaction of Alkynyl Aldehydes and Ethyl Diazoacetate

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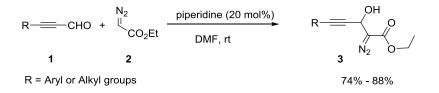
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#### Graphic abstract



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

 $\alpha$ -Diazocarbonyl compounds have been extensively utilized in organic synthesis because they can undergo a wide variety of useful tranformations under mild reaction conditions.<sup>1</sup>  $\Box$ 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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