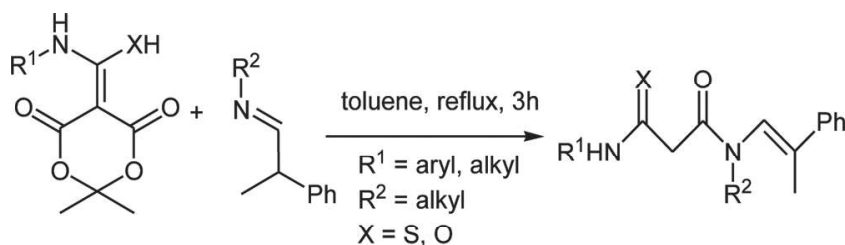


## ONE-STEP FORMATION OF N-ALKENYL-MALONAMIDES AND N-ALKENYL-THIOMALONAMIDES FROM CARBAMOYL MELDRUM'S ACIDS

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### GRAPHICAL ABSTRACT



**Abstract** A one-pot synthesis for the preparation of *N*-alkenyl-malonamides and *N*-alkenyl-thiomalonamides was developed. 5-[Hydroxy/mercapto(aryl/alkylamino)methylene]-2,2-dimethyl-1,3-dioxane-4,6-dione act as a source of ketenes that react with the tautomeric form of alkyl-(2-phenyl-propylidene)-amines. A possible [2 + 2] or [4 + 2] cycloaddition product of ketene to imines was not observed.

**Keywords** Acylations; amides; ketenes; Meldrum's acid; tautomerism

## INTRODUCTION

Meldrum acid derivatives are widely used in organic synthesis,<sup>[1]</sup> usually because 3-substituted-1,3-dioxadiones are a potential source of ketenes in the course of thermolysis.<sup>[2]</sup> Among them, acyl Meldrum acids play the most significant role as a starting material for structurally diverse compounds such as 3-substituted- $\beta$ -lactams,<sup>[3]</sup> isooxazolols,<sup>[4]</sup> pilicides,<sup>[5]</sup> 1,3-oxazinones,<sup>[6]</sup> pyrones,<sup>[7]</sup> and derivatives of tetramic acid.<sup>[8]</sup>

Recently we have focused our efforts on the application of particular derivatives, 5-[hydroxy(aryl/alkylamino)methylene]-2,2-dimethyl-1,3-dioxane-4,6-diones **1a**, in organic synthesis. During thermal decomposition **1a** is a source of carbamoylketenes, which, as demonstrated by Lee et al.<sup>[9]</sup> and our own research, may

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