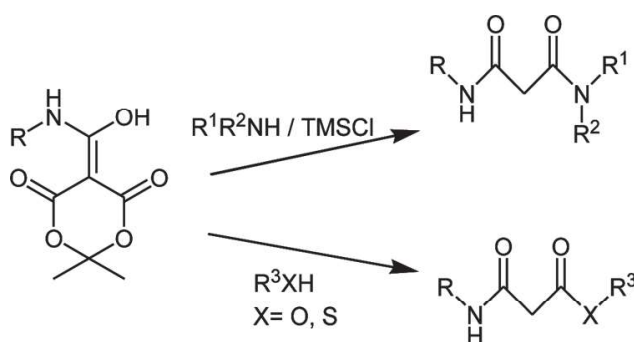


TMSCL AS A RATE-ACCELERATING ADDITIVE IN ACYLATIONS OF AMINES WITH 5-(α -AMINO- α' -HYDROXY)METHYLENE MELDRUM ACIDS

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GRAPHICAL ABSTRACT



Abstract Aspects are presented of the acylation of amines, alcohols, and thiols with 5-(α -amino- α' -hydroxy)methylene Meldrum acids. We placed special emphasis on the acylation reaction of secondary amines with 5-(α -amino- α' -hydroxy)methylene Meldrum acids, which, because of their basicity, caused problems concerning salt formation with a Meldrum acid derivative. We found that secondary amines, which react at the slowest rate and give a poor yield with 5-(α -amino- α' -hydroxy)methylene Meldrum's acid, react quickly and with high yields with the same reagent in the presence 1 to 3 equivalents of TMSCl. Acylation with this derivative of Meldrum acid was optimized for such factors as reaction temperature, solvent polarity, and acidity of the environment. We have prepared a wide range of nonsymmetrical malonamic acid diamids, esters, and thioesters of malonamic acid.

Keywords Acylation; amides; decarboxylation; enols; ketens

INTRODUCTION

Derivatives of malonic acid find broad scope of application in various fields. Among other malonic acid diamids, the structural fragment might be found in retro-inverso-modified pseudopeptides,^[1] small molecules of gene regulation,^[2] low molecular organogelators,^[3] or neuromediator prodrugs^[4] and macrocyclic

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