A-AMINO NITRILE SYNTHESIS BY ULTRASOUND IRRADIATION

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The design of safe synthetic methods has given important position to ultrasound irradiation techniques as a new source of energy for organic reactions. Ultrasound enhances some processes through a physical phenomenon which called cavitation. Cavitation is the formation, growth and collapse of bubbles in an elastic liquid. By imploding, these bubbles creates local high pressure and temperature that leads to high energy radical mechanisms with some physical effects such as micro-mixing, mass transport or reduction of particles size. [1]

In the preparation of a-amino acids, a-amino nitriles are important intermediates. They have been prepared by strecker synthesis starting from ketones or aldehydes, alkaline cyanides and salts of amines. The reaction is carried out in aqueous solutions. Several methods have tried to reproduce the synthesis of amino-nitrile under different conditions. [2 ,3] Sonochemistry or reaction under ultrasound irradiation may also be a powerful tool to access to the synthesis of a-amino nitrile. This modified synthesis method to be a begin method for preparation of a- amino nitrile.

We prepared a-amino nitrile under ultrasonic irradiation in aqueous solution under mild condition. This reaction take place by radical intermediate and the yield of reaction was higher than the reaction in the silent condition. The effects of several experimental parameters such as temperature, reaction time and extraction solvent are explored.

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