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PREPARETION, ANALYSIS AND CHARACTERIZATION OF (1R,3R,5S,7S)-4,4,7-TRIMETHYL-8-AZATRICYCLO[5.2.0.0^{3,5}]NONAN-9-ONE

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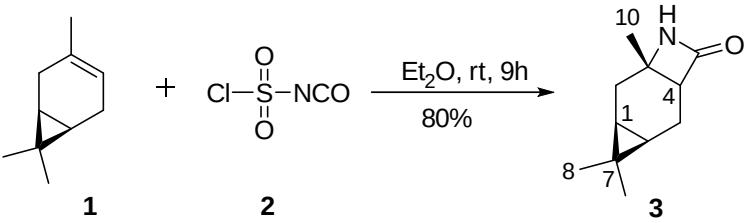
It is well known that β-lactam are agents that interrupt bacterial formation *via* covalent binding to essential penicillin-binding proteins. The identification of the novel lactams, which not only improve the quality of therapy, but also reduce side effects on patients are still a major concern for medicinal chemists.

In our work, the β-lactam **3** was synthesized by cycloaddition chlorosulfonyl isocyanate **2** to natural (+)-3-carene **1.**



1 **2** **3**

Synthesis of the β-lactam

To a solution of the compound **1** in Et_2O was added the chlorosulfonyl isocyanate **2** at 0^{o}C under nitrogen atmosphere. The reaction mixture was stired at r.t. for 9h. After this time solution of Na_2SO_3 in water was added dropwise to the reaction mixture and solution was stirred for 30 min. Solution of KOH 20% was added to the reaction mixture and extracted the organic phase with Et_2O. Organic layer was washed with water, dried over Na_2SO_4, filtered, and concentrated under reduced pressure. The crude product was recrystallized from hexane and afforded the target compound **3**.

The reaction was verified TLC by ethyl acetate: petroleum ether 1:4 system. The final compound was analyzed with NMR:

Keywords: *lactams, (1r,3r,5s,7s)-4,4,7-trimethyl-8-azatricyclo[5.2.0.03,5]nonan-9-one.*