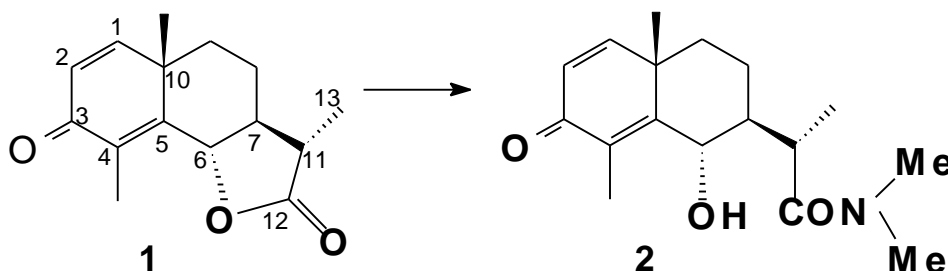


## Aminolysis of $\alpha$ -Santonin in the Reaction with Dimethylamine

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It is well known that opening of lactone cycle of **1** occurs at room temperature in benzene solution within 4 hours with high yield when  $\alpha$ -santonin (**1**) treated with pyrrolidine. However, dimethylamine doesn't cause the reaction in the same conditions even when mixture is boiled. We successfully conducted the reaction with  $\text{NHMe}_2$  in boiling dioxane during 4.5 hours. Yield of product **2** is 42%. The structure of amide (**2**) has been established by X-ray data.



The bond lengths and bond angles of **2** are close to usual ones within the range of precision. Torsional angles  $\text{C1C10C5C4}$  and  $\text{C9C10C5C6}$  equal to  $1.4^\circ$  and  $59.8^\circ$  accordingly. Presence of double bonds  $\text{C1=C2}$  and  $\text{C4=C5}$  conjugated with keto-group  $\text{C3=O1}$  leads to strong flattening of cycle A (absolute value of intracycle torsion angles doesn't exceed  $1.5^\circ$ ). The cycle atoms are coplanar within  $\pm 0.0064$  Å. Atom O1 is located on the cycle plane (torsion angle  $\text{C1C2C3O1}$  is  $177.3^\circ$  and  $\text{C5C4C3O1}$  is  $177.2^\circ$ ). Cycle B takes the conformation of symmetric  $7\alpha,10\beta$ -chair ( $C_s^7 = 0,7^\circ$ ). Atoms O2 and C12 are equatorially oriented to  $\alpha$ - and  $\beta$ -side, correspondingly. In dimethylamine group we observed mesomer effect which was shown by reduction of bond length  $\text{C12-N1}$  ( $1.334(3)$  Å) and increase of bond  $\text{C13=O3}$  ( $1.241(2)$  Å) and also by flat trigonal coordination of nitrogen atom.