Carboxy Group as Nucleophil and Electophil for Intramolecular Reaction of 2-Carboxyaryldifurylmethanes

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It is known that on heating of 2-carboxybenzylfurans in acetic anhydride in the presence of ZnCl₂ intramolecular acylation takes place. This reaction is a stage of natural furonaphtoquinones synthesis [1]. We showed that similar transformation of 2-carboxyaryldifurylmethanes yielded corresponding furonaphtalines.

On the other hand refluxing of these compounds in ethanolic solutions of HCl accompanied by recyclization of one of furan rings and yielded isocoumarine derivatives [2].



a) ZnCl₂, Ac₂O; b) HCl in EtOH; c) 1. NaBH₄, 2. PCC

However we could not observe recyclization of 2-formylbenzylfurans in mentioned conditions. These substances were converted into furonaphtalines even on the refluxing in HCl saturated ethanol.

1. Starling S.M., Raslan D.S., De Oliveira A. B. Synth. Commun., 1998, 28, 1013.

2. Gutnov A.V., Abaev V.T., Butin A.V., Dmitriev A.S. J. Org. Chem., 2001, 66, 8655.

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