The behaviour of *N,N*-disubstituted 5-arylmethylidene-2-aminothiazole-4(*5H*)-ones towards cyclic CH acids and ethyl cyanoacetate

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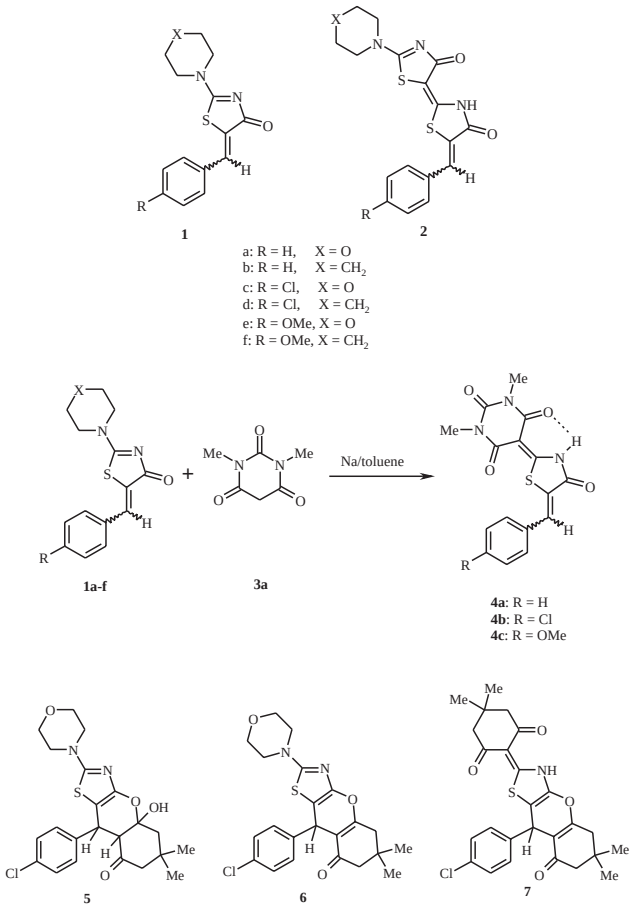
N,N-Disubstituted 5-arylmethylidene-2-aminothiazol-4(*5H*)-ones reacted with uracil, dimedone and ethyl cyanoacetate to give adducts as a result of addition at the β-terminal of the azomethine moiety and/or addition at the β-carbon of the α,β-unsaturated carbonyl system.

Keywords: 2,5′-bithiazolylidene-4,4′-dione, chromenothiazole, dimedone, ethyl cyanoacetate, 2-thiazol-4(*5H*)-one, uracil

It has been reported[1] that compounds **1a–f** react with a variety of CH acids to give mainly the respective 5-arylmethylidene-2′-amino-2,5′-bithiazolylidene-4,4′-diones **2a–f**. However, we now report that compounds **1a–f** react with uracil **(3a)** in refluxing toluene and in the presence of powdered sodium to afford high yields of compounds **4a–c**.

Treatment of **1a** with dimedone **(3b)** under similar reaction conditions gave the 2,5′-bithiazolylidene-4,4′-dione derivative **2a**[1] as the only isolated product. Similar treatment of **1c** with **3b** produced the chromenothiazole derivative **6** as the main product together with its hydroxy derivative **5**. However, **1d** reacted with **3b** to yield **7** which was isolated by chromatography. A mechanism (Scheme 2) is proposed to take account of these observations.



Scheme 1

Reaction of compounds **1a–d** with ethyl cyanoacetate **(3c)** produced large proportions of the adducts **8a&b** and small amounts of compounds **2a–d**.

Techniques used: TLC, column chromatography, m.p., microanalysis, IR, MS, 1H NMR

References: 7

Schemes: 2

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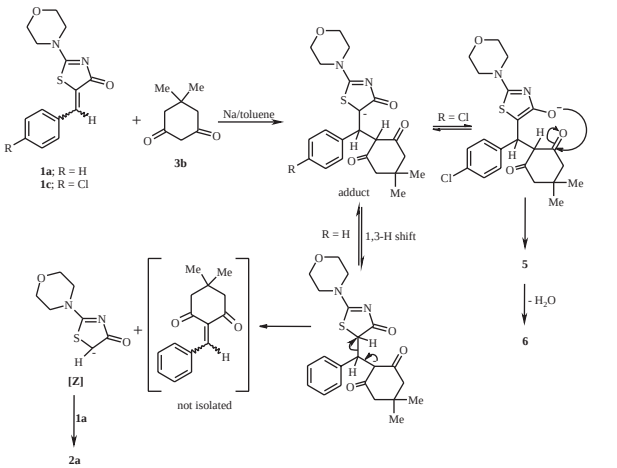
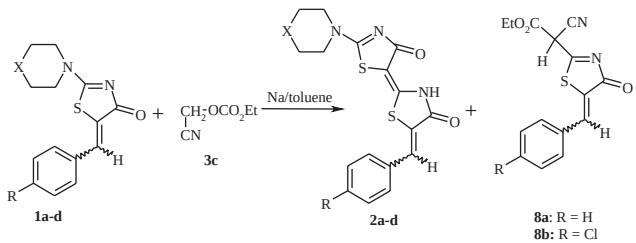
References cited in this synopsis

1 K.A. Kandeel, A.M. Youssef, H.M. El-Bestawy and M.T. Omar, *Monatsh. Chem*. 2002**, 133**, 1211.



Scheme 2



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