A NOVEL SYNTHESIS OF 5-ARYL-3-OXO-2-PHENYL-2H, 3H-1,2,4-THIADIAZOLES

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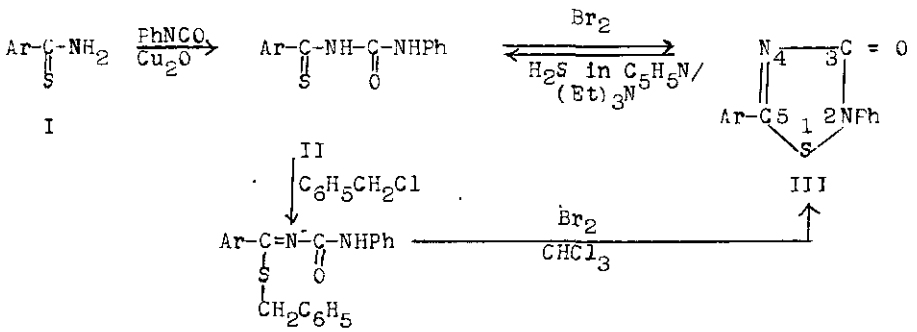
The chemistry of substituted 3-oxo-1,2,4-thiadiazoles/thiadiazolines is an area attracting much attention currently[1-3]. Goerdeler et al[4] have earlier reported the preparation of 2,5-diphenyl-3-oxo-1,2,4-thiadiazole only, by the interaction of thiobenzoyl isocyanate and nitrosobenzene. In the present communication, an attempt has been made to devise a shorter and simpler synthetic route for the title heterocycles.

We report the synthesis of some N-phenylcarbamoyl-thioamides by interaction of appropriate thioamide(I) with phenylisocynate in presence of cuprous oxide. These carbamoylthioamides(II), on oxidation were found to afford the corresponding 5-aryl-3-oxo-2-phenyl-2H, 3H-1,2,4-thiadiazoles(III). Further, to test the validity of oxidative debenzylaion and cyclization reaction in carbamoyl thioamide system, S-benzyl derivatives of II were prepared and were found tc give the corresponding, 1,2,4-thiadiazoles(III) by oxidation with bromine in chloroform.



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