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# The Effects of Electron Donating Groups on the Photoisomerization of Tetrasubstituted 4H-Thiopyrans

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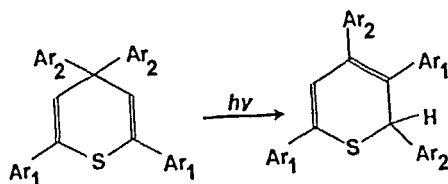
The relative yields of photoisomerization products of 4,4- and 2,6-dianisyl isomers **1** and **2** were compared with that of the unsubstituted model compound **3** under the identical experimental conditions.

## INTRODUCTION

Following our studies on the photoisomerization of tetra- and hexasubstituted 4H-thiopyrans<sup>1</sup>, recently it has been shown that the substitution of electron donating groups on the para position of the migratory 4-aryl group increase the relative rates of photoisomerization<sup>2</sup>. The present investigation was undertaken to determine the effect of electron donating groups on the aryl substituents attached to 2,6-positions of tetrasubstituted 4H-thiopyrans.

## RESULTS AND DISCUSSION

To compare the effects of 2,6-positions with 4-position, the new 4,4-dianisyl-2,6-diphenyl-4H-thiopyran **1** and 2,6-dianisyl-4,4-diphenyl-4H-thiopyran **2** were synthesized and their relative yields of photoisomerization products compared with that of the unsubstituted 2,4,4,6-tetraphenyl-4H-thiopyran model compound **3** under the identical experimental conditions. Yields were determined by <sup>1</sup>H-NMR



1.  $Ar_1 = Ph$ ,  $Ar_2 = p-MeOC_6H_4$ ;

2.  $Ar_1 = p-MeOC_6H_4$ ,  $Ar_2 = Ph$

3.  $Ar_1 = Ar_2 = Ph$

spectroscopy using the ratios of characteristic signals of 4H-thiopyrans to the corresponding 2H-thiopyran isomers.

The results showed that on irradiation of thiopyrans **1**, **2** and **3** with a low-pressure mercury lamp at a wavelength  $\lambda = 254$  nm in benzene solutions under an argon atmosphere at room temperature, compound **1** gives the corresponding 2H-thiopyran isomers with a relative yields higher than the model compound **3**, whereas the relative yields is lower for compound **2**.

## ACKNOWLEDGMENT

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