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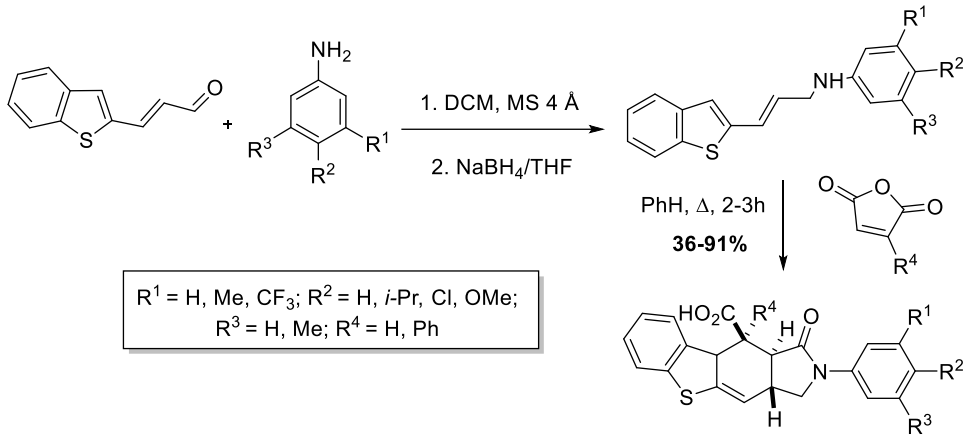
THE SYNTHESIS OF BENZO[4,5]THIENO[2,3-*f*]ISOINDOLE-CARBOXYLIC ACIDS BY IMDAV REACTION*

Keywords: IMDAV, [4+2] cycloaddition, benzothiophene, maleic anhydride.

The broad implementation of the [4+2] cycloaddition reactions in advanced organic chemistry paved the way for easily approachable syntheses of heterocyclic scaffolds. The reaction of vinylthiophenes with unsaturated carboxylic acids anhydrides yields thienoisoindole derivatives, a class of compounds that are expected to exhibit biological activity [1].

The recent researches indicate the formation of thieno[2,3-*f*]isoindole-4-carboxylic acids by interaction of 3-(thien-2-yl)allylamines with maleic anhydride. The initial *N*-acylation of allylamines is supervened by cyclization of intermediate maleinamides through the step of intramolecular Diels-Alder vinylthiophene (IMDAV) reaction [2].

We successfully managed to expand the described approach to benzothiophene derivatives. 3-(Benzo[*b*]thiophen-2-yl)allylanilines were made to react with maleic anhydrides, a number of benzo[4,5]thieno[2,3-*f*]isoindole-10-carboxylic acids were obtained in different yields.



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FACILE APPROACH TO ALKALOID-LIKE POLYCYCLIC SPIROHETEROCYCLES *VIA* THERMAL CYCLOADDITION OF PYRROLOBENZOTHIAZINETRIONES WITH OLEFINS*

Keywords: alkaloid-like heterocycles, benzothiazine, hetero-Diels–Alder reaction, olefins, 1*H*-pyrrole-2,3-dione.

Development of isosteres of drug-like and natural compounds is a promising field in modern pharmacology and medicinal chemistry [1].

1*H*-Pyrrole-2,3-diones are among the most available polyelectrophilic reagents enabling synthesis of various polyheterocyclic systems with divergent skeletons [2, 3]. Recently, 1*H*-pyrrole-2,3-diones fused at [*e*]-side (hetareno[*e*]pyrrole-2,3-diones) to 1,4-benzoxazine **1** or quinoxaline **2** moieties were used as key structures in the syntheses of 6/6/5/6-tetracyclic systems of heterocyclic analogs of 13(14→8)*abeo*-steroids [4–10].