Synthesis of New Arylsulfonylhydrazide-1,2,3-Triazole Derivatives from Diazocarbonyl Compound

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INTRODUCTION

Recently, we described the synthesis and pharmacological evaluation of 1,2,3-triazole derivatives. In this study, it was found that the compounds 1-[5''-methyl-1''-(4''-fluorophenylamino)-1H-1,2,3-triazol-4''-yl]carbonyl]-2-(4'methylphenylsulfonyl)hydrazine and 1-[5'-methyl-1'-(2',5'-dichlorophenylamino)-1H-1,2,3-triazol-4'-yl]carbonyl]-2-(phenylsulfonyl)hydrazine exhibited a significant effect against HSV-1 replication in cell culture. In an effort to optimize the antiviral activity of these structurally triazole compounds, we now described the synthesis of a new family of triazole derivaives 1a-f.

RESULTS AND DISCUSSION

The synthesis of these new derivatives 1a-f is shown in Scheme 1. The 1,2,3-triazoles 2a-b were prepared in moderated yields by the condensation of ethyl 2-diazoacetate with corresponding arylsulfonylhydrazides according to the method described in our previous report. These compounds were converted into their corresponding carbohydrazides 3a-b by treatment with hydrazine hydrate in refluxing ethanol. Finally, the new class of triazole derivatives 1a-f was prepared in moderated yields by the reaction of compounds 3a-b with suitable arylsulfonyl chlorides 4a-c in pyridine. The structures of these new compounds were fully characterized by IR and 1H NMR spectroscopies.

CONCLUSION

In conclusion, we have developed the synthesis of a new series of arylsulfonylhydrazide-1,2,3-triazole derivatives 1a-f by the reaction of carbohydrazide compounds 3a-b with suitable arylsulfonyl chlorides 4a-c in pyridine. Our further efforts will be dedicated towards evaluating the biological profiles of these compounds.

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