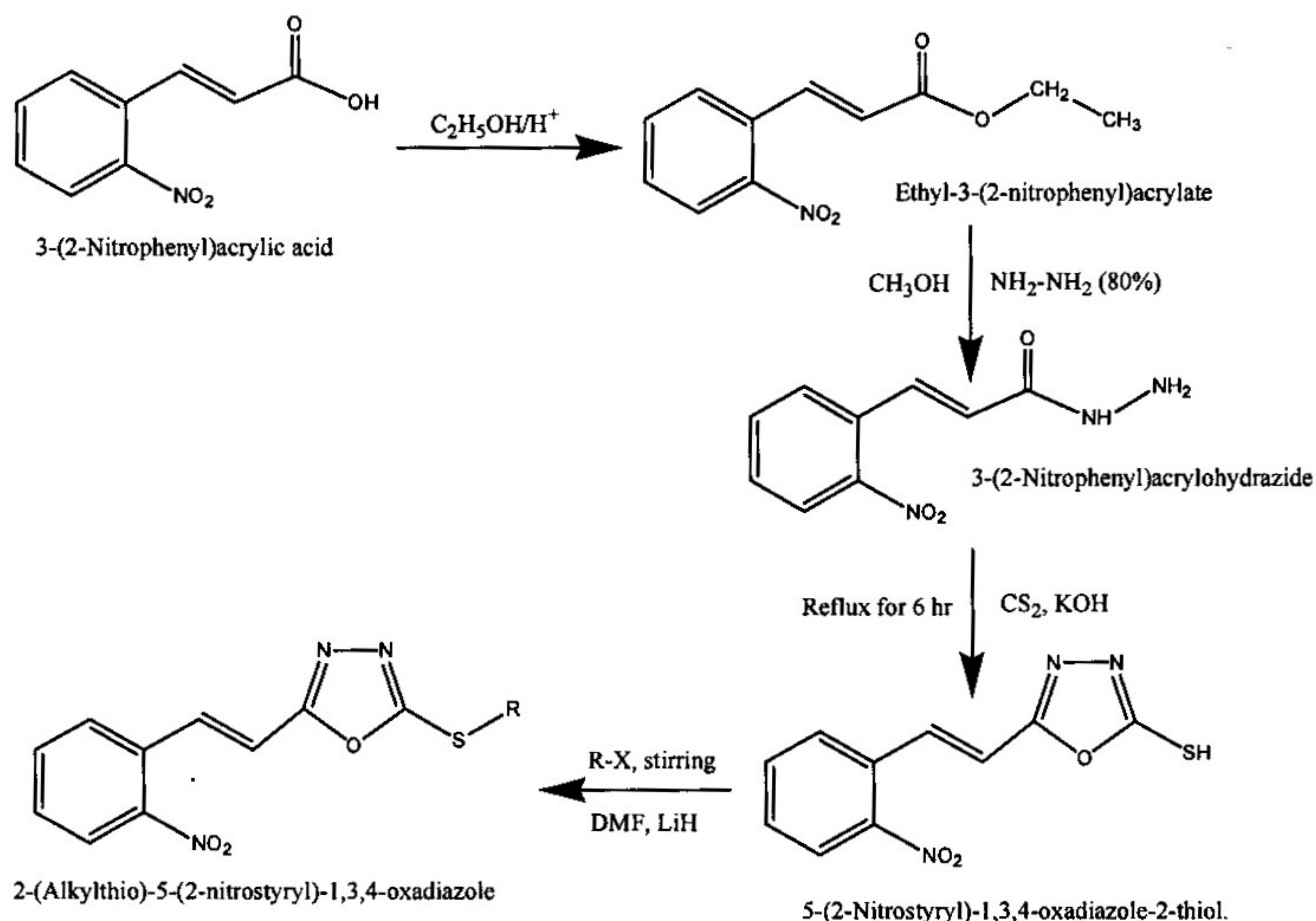




ABSTRACT

Oxadiazoles are important class of compounds that shows broad spectrum of antimicrobial activities. In the present work, various *S*-substituted derivatives of 5-(2-nitrostyryl)-1,3,4-oxadiazole-2-thiol were synthesized by successive conversions of 3-(2-nitrophenyl)acrylic acid into its respective ester, hydrazide and 1,3,4-oxadiazole. Finally the title compounds were obtained by stirring 5-(2-nitrostyryl)-1,3,4-oxadiazole-2-thiol with a series of various electrophiles in dimethyl formamide (DMF) in the presence of sodium hydride (NaH). The structural characterization of these newly synthesized compounds was done by spectral data. All the compounds were evaluated for their biological potentials and found to exhibit broad range spectrum of biological activities such as Acetylcholinesterase, Butyrylcholinestrace and Lipoxygenase enzymatic activities.

The overall scheme for the synthesis of 1,3,4-oxadiazole is as follows:





Compd. No.	-R	Compd. No.	-R
4a	$\begin{array}{c} \text{---CH}_2\text{---CH}_3 \\ 1'' \quad 2'' \end{array}$	4h	
4b	$\begin{array}{c} \text{---CH} \begin{array}{l} \text{---CH}_3 \quad 2'' \\ \text{---CH}_3 \quad 3'' \end{array} \\ 1'' \end{array}$	4i	
4c		4j	
4d	$\begin{array}{c} \text{H} \quad \quad \text{H}_a \\ \quad \quad \quad \diagdown \quad \diagup \\ \text{---CH}_2 \quad \text{C} = \text{C} \\ \quad \quad \quad \diagup \quad \diagdown \\ 1'' \quad 2'' \quad 3'' \quad \text{H}_b \end{array}$	4k	
4e		4l	$\begin{array}{c} \text{H} \quad \quad \text{H}_a \\ \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \text{C} = \text{C} \\ \quad \quad \quad \diagup \quad \diagdown \\ 1'' \quad 2'' \quad \text{H}_b \end{array}$
4f		4m	
4g		4n	