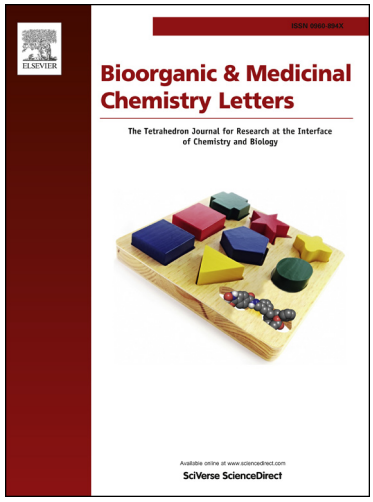

Synthesis and bioactivities of novel thioether/sulfone derivatives containing 1,2,3-thiadiazole and 1,3,4-oxadiazole/thiadiazole moiety

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Synthesis and bioactivities of novel thioether/sulfone derivatives containing 1,2,3-thiadiazole and 1,3,4-oxadiazole/thiadiazole moiety

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Abstract: A series of new thioether/sulfone compounds containing 1,2,3-thiadiazole and 1,3,4-oxadiazole/1,3,4-thiadiazole moiety were synthesized, the structures of all products were confirmed by IR, ^{1}H NMR, ^{13}C NMR, and element analysis. Preliminary antifungal activity test showed that compound **8a** exhibited moderate antifungal activity against *F. oxysporum* at 50 μg/mL. Preliminary antiviral activity results showed that compounds **7a**, **7c**, **7d**, **8a**, and **9a** displayed high antiviral activity against tobacco mosaic virus. The present work demonstrates that thioether/sulfone heterocyclic derivatives could be considered as new lead compounds for antiviral studies.

Keywords: synthesis; thioether/sulfone; heterocycle; antiviral activity;

Tobacco mosaic virus (TMV) is known to infect members of 9 plant families, and at least 125 individual species, including tobacco, tomato, pepper, cucumbers, and a

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Abbreviations used: IR, infra-red spectroscopy; ^{1}H NMR, ^{1}H nuclear magnetic resonance; ^{13}C NMR, ^{13}C nuclear magnetic resonance; *G. zeae*, *Gibberella zeae; F. oxysporum*, *Fusarium oxysporum; C. mandshurica*, *Cytospora mandshurica*.