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Synthesis and Antimicrobial Activities of 1,2,4-Oxadiazin-5-one, 6-one and 5-Thiones

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
Chemistry

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**Abstract:** N-Substituted pyridine carboxamide oximes (2) were obtained from the reactions of pyridine hydroxamic acid chloride hydrochlorides (1) with primary amines. The reactions of carboxamide oximes with chloroacetyl chloride in the presence of triethylamine gave the corresponding 3,4-disubstituted-1,2,4-oxadiazin-5-ones (3), which on treatment with P<sub>2</sub>S<sub>5</sub> gave in moderate yields the corresponding 3,4-disubstituted-1,2,4-oxadiazin-5-thiones (4). The reaction of pyridine carboxamide oximes with  $\alpha$ -amino acid ester led to the formation of 3,5-disubstituted-1,2,4-oxadiazin-6-ones (5) in moderate yields. The structures of the prepared compounds were evaluated by spectroscopy. Some of the representatives of 3,4-disubstituted-1,2,4-oxadiazin-5-ones, thiones, and 3,5-disubstituted-1,2,4-oxadiazin-6-ones were screened for antibacterial activity using disc diffusion. It was found that all the tested compounds have good antimicrobial activities.

**Key Words:** Amidoxime, oxadiazine, antimicrobial activity

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