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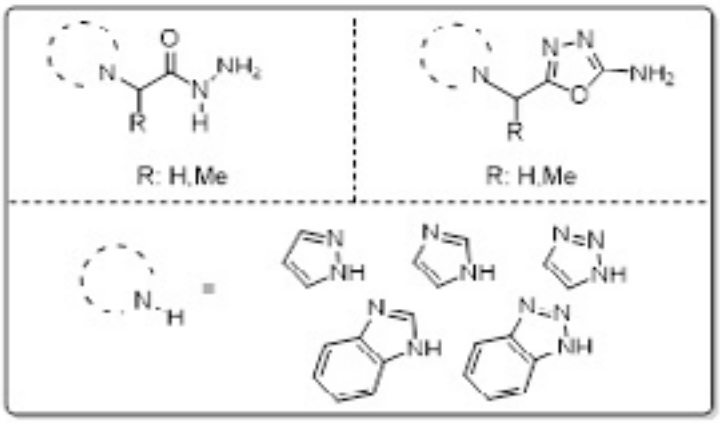
Synthesis, antibacterial and cytotoxic evaluation of hydrazide and amino-oxadizole derivatives

Martha Laura Hernandez Carrillo, Ma Elena Cantu Cardenas, Veronica M Rivas Galindo and **Eugenio Hernandez Fernandez**
Universidad Autonoma de Nuevo Leon , Mexico

Incidence of microbial infections caused by opportunistic pathogens, often characterized by high mortality rates, has increased in recent decades. A matter of concern in the treatment of bacterial infections is the limited number of effective antibacterial drugs. Many of the currently available drugs are toxic, allow recurrence or lead to the development of resistance due in part to prolonged periods of administration. Due to this global public health problem, there is a real perceived need to discover new compounds that are endowed with antibacterial activities, possibly acting through mechanisms of action different from those of known drugs to which many pathogens are now resistant. Currently, there are compounds that incorporate into their structure five-membered heterocycles containing N and O, which exhibit biological activity. In this work, we present the synthesis of the following hydrazides and amino-oxadiazoles derivatives, and its antibacterial and cytotoxic evaluation. The synthesis of the hydrazides and oxadiazoles was carried out by microwave irradiation using ethanol and methanol as solvents to generate the corresponding products with good chemical yields. Each of the products were purified by column chromatography and their characterization was carried out by NMR ^{1}H ^{13}C, FTIR and MS. The antibacterial activity was carried out by diffusion in agar and broth microdilution method, using gram positive and gram negative bacteria.



Biography

Martha Laura Hernández Carrillo has completed her Bachelor's Degree in Clinical Chemist Biologist from Universidad Autónoma de Nuevo León Faculty of Medicine. She is currently a Master in Science student in the Universidad Autónoma de Nuevo Leon Faculty of Chemical Sciences.

marthahernandez.86@gmail.com

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