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**Antibacterial activity of tetrazole derivatives**

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Numerous applications have been reported for the tetrazole ring including being used as bioisosteres for carboxylic acids. In addition, several approved angiotensin II receptor antagonists that treat hypertension and congestive heart failure contain a tetrazole ring such as losartan, irbesartan, olmesartan, candesartan, valsartan and fimasartan. Some tetrazole derivatives have also been studied as propellants in airbags as well as in pyrotechnics and explosives due to the tendency of the tetrazole ring to decompose and release nitrogen gas under high heat. Our work involves the synthesis of 5-substituted 1H-tetrazole derivatives through the (3+2) cycloaddition of sodium azide with an organic nitrile catalyzed by rare-earth metal catalysts. The reactions were carried out in an aqueous solvent mixture utilizing microwave heating. The antibacterial properties of tetrazole containing compounds were also studied against *Escherichia coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

**Biography**

Adiel Coca has completed his PhD from Pennsylvania State University in 2007. He was a Visiting Assistant Professor at Franklin and Marshall College (Lancaster, PA) in 2007-2008. He has then moved to Southern Connecticut State University in 2008 where he is currently an Associate Professor. He was a Visiting Researcher at Oxford University, UK from 2015 to 2016. He currently has nine peer-reviewed publications and is serving as an Editorial Board Member of the *Journal of Modern Chemical Sciences*.

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