

ABSTRACT

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Title: SYNTHESIS AND ANTIBACTERIAL TESTING OF 1H 5-ARYL
SUBSTITUTED TETRAZOLES

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Year: 2019

The misuse of antibiotics has affected millions and killed thousands in the U.S. This will continue to increase over time, therefore new antibiotics must be created to treat evolving bacteria. Tetrazoles have shown to have bacterial resistance. Coca and coworkers had synthesized the tetrazole 5-acetylbenzotetrazole which exhibited antibacterial properties against *Escherichia coli* and *Staphylococcus aureus*. This research is a continuation of Coca and coworkers finding. Tetrazoles had been previously synthesized with DMF as a solvent. Ester derivatives of the tetrazoles were synthesized, but with the solvent being 3:1 isopropanol and water. This was done because this solvent is safer to use in the lab, better for the environment, and cheaper. The temperatures were varied when using the oil bath and microwave. Nitriles were also synthesized to then convert into tetrazoles.