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IONIC AND COVALENT CONJUGATES OF METRONIDAZOLE AND TRYPTAMINE

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Ionic and Covalent Conjugates of Metronidazole and Tryptamine

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ABSTRACT

Metronidazole is an antibiotic used in the treatment of many bacterial and parasitic infections. This antibacterial agent has been shown to have a variety of uses upon its development. Metronidazole is derived synthetically from Azomycin, a natural antimicrobial antibiotic produced by actinobacteria, such as *Norcadia mesenterica* and *Sterptomyces eurocidicus*, and proteobacteria such as *Pseudomonas fluorescens* used to treat anaerobic parasitic and bacterial infections. Solid drugs are not as effective in the body because they are not soluble enough to allow for effective release into circulation, which makes it hard for the body to absorb. However, ionic liquids can be used to improve drug delivery, efficacy, and development. Ionic liquid compositions are typically made up of at least two different ions with at least one kind of cation and one kind of anion. In this project, ionic liquid compositions containing metronidazole as a positively charged ion and acesulfame as a counterion have been synthesized. To explore the brain-penetrating ability of tryptamine, we have created its conjugates with beta-alanine, glucine, and gabapentin. These ionic and covalent conjugates represent existing drugs with improved properties such as palatability and lipophilicity.

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