

SYNTHESIS OF 3-((4-(N-(5-METHYLISOXAZOL-3-YL)SULFAMOYL)PHENYL)AMINO)PROPANOIC ACID DERIVATIVES

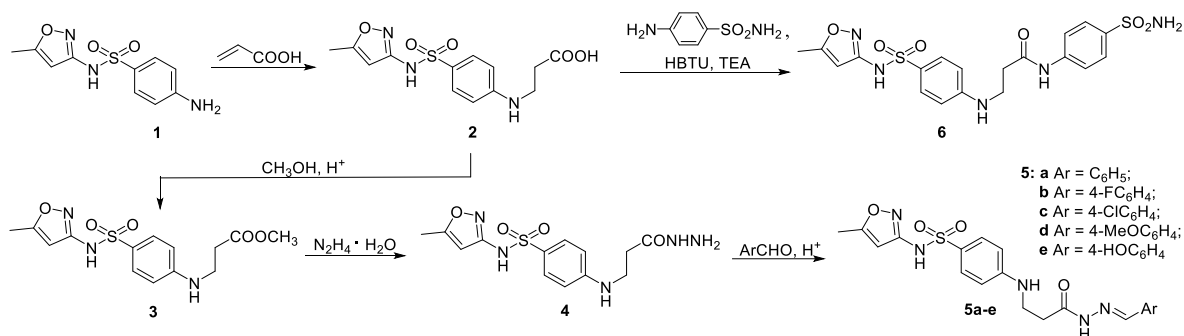
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Isoxazoles represent a large group of compounds, the most of which display broad spectrum of pharmacological properties such as antibacterial [1], anti-inflammatory [2], anticancer [3], antioxidant [4]. The literature survey showed that the substitution on the isoxazole ring provides different activity of the compounds.

Taking into account the above-mentioned facts, as a starting material for the study we have selected a 4-amino-*N*-(5-methylisoxazol-3-yl)benzenesulfonamide (**1**), which is known as *Sulfamethoxazole*, an antibiotic used for the treatment of the bacterial infections such as bronchitis, urinary tract infections, prostatitis as well as is effective against both Gram negative and positive bacteria [5].

An interaction of sulfonamide **1** with acrylic acid in water at reflux afforded β -amino acid **2** (Scheme 1) in 95% yield. The esterification of the obtained acid **2** was performed with methanol, and the formed methyl ester **3** was applied for the preparation of hydrazide **4**. The reaction was performed with hydrazine monohydrate in propan-2-ol at reflux for 24 hours and gave acid hydrazide **4**, which then was condensed with various aromatic aldehydes to form the appropriate hydrazones **5a–e**. The reactions were carried out in 1,4-dioxane at reflux for 24 hours in the presence of a catalytic amount of hydrochloric acid.



Scheme 1. Synthesis of 4-amino-*N*-(5-methylisoxazol-3-yl)benzenesulfonamide derivatives **2–6**.

To expand the variety of sulfonamide derivatives the amidation reaction of acid **2** was carried out. It was performed in DMSO at room temperature, at stirring for 20 h, in the presence of HBTU as a coupling agent in combination with TEA and gave the amide **6**. The synthesized compounds were confirmed by their spectroscopic and elemental analyses data.

References

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