

Investigation of antimicrobial and antimutagenic effects of derivatives pyrazolopyridines synthesized

Marzieh sadat didehvari*,

Introduction: Pyrazolopyridines are beneficial drug compounds and are present in many biological active compounds, drugs and pesticides. The aim of this study was to investigate the antimicrobial and anti-mutagenic effects of derivatives of synthesized pyrazolopyridines. **Materials and Methods:** At first, the antimicrobial effects of 6-derived pyrazolopyridines synthesized by diffusion method on *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Staphylococcus aureus* were investigated. Using the methods MIC (minimum inhibitory concentration) and MBC (minimum bactericidal concentration). Minimum inhibitory and inhibitory concentrations were determined. Anti-mutagenic effects 2 derived synthesized pyrazolopyridines were investigated by Ames test using *Salmonella typhimurium* TA100 mutated bacteria in top agar culture media. **Results:** The results of the non-growth halo were determined by disk diffusion method. Six derivatives of the synthesized pyrazolopyridines on gram-negative bacteria such as *Escherichia coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* did not have antimicrobial effects. Also, 4 Up to 6 of these derivatives have antimicrobial effects on gram positive bacteria of *Staphylococcus aureus*. The highest antimicrobial activity associated with the derivative has a code 1 with a diameter of 6 inhibitory concentration at 4 mg / ml concentration and the lowest antimicrobial activity related to Pyrazolopyridine derivative with the diameter of the 3 inhibitory zone was recorded at a concentration of 4 mg / ml and the minimum inhibitory concentration Pyrazolopyridine derived rats were 0.25 and 0.5 mg / ml at a concentration of 2 mg / ml, and the minimum inhibitory concentration and derivative yield of code 1 was 1.05 and 0.25 mg / ml at a concentration of mg / ml 2 was recorded. The results of the anti mutagenesis were as follows: *Salmonella typhimurium* was grown in the presence of derivatives with code 1 and 3, and in the presence of positive control (sodium azide),

a mutation in the modified heiddin gene was created and Salmonella typhimurium Grew. Conclusion: Considering the antimicrobial effects of 4 derivatives of synthesized pyrazolopyridines and the mutagenic effects of 2 of these derivatives, considering their side effects in invivo conditions, these derivatives Cited as a chemical drug against infection.

Keywords : Staphylococcus aureus, Escherichia coli, Ames, Pyrazolopyridine, Pseudomonas aeruginosa, Anti mutagenesis, Klebsiella pneumoniae, MBC, MIC, Salmonella typhimurium TA100

[Islamic Azad University, Rasht Branch - Thesis Database](#)
[دانشگاه آزاد اسلامی، واحد رشت - سامانه بانک اطلاعات پایان نامه ها](#)