

Development and research of environmentally safe synthesis methods for some new bis-indolylmethanes

Maka Popiashvili

E-mail: maka.popiashvili411@ens.tsu.edu.ge

Department of Chemistry, Faculty of Exact and Natural Sciences

Ivane Javakhishvili Tbilisi State University

3, I. Chavchavadze Avenue, Tbilisi, 0179, Georgia

It is very important today to conduct chemical reactions using the concept of green chemistry. The paper develops an efficient and environmentally safe method for the synthesis of 3,3'-(phenylmethylene)-bis-(2-phenyl-1H-indole) based on the condensation of 2-phenylenindole and benzaldehyde. In order to optimize the reaction conditions, the synthesis was carried out under different conditions. In particular, the reaction was carried out in a mixture of unripe fruit and water, mixture of unripe fruit, ethyl alcohol (95%) and water, such as room temperature, also 60°C and 80°C. The duration of the reaction is remarkable. The best result was achieved, when we used a mixture of unripe fruit, ethyl alcohol (95%) and water in a ratio of 1: 1.5 : 2.5 and temperature 80°C [1]. The antibacterial properties of the obtained bis-indoles were studied on Gram-positive - *Staphylococcus aureus* (*clinical strain*) and Gram-negative - *E. Coli C bacteria* and also the antioxidant properties (*using the DPPH reagent*).

References

- [1] Maka Popiashvili, Ramaz Gakhokidze, Nino Nikoleishvili, Elene Katsadze, Ioseb Chikvaidze. BULLETIN OF THE NATIONAL ACADEMY OF SCIENCES OF GEORGIA, (2025), vol. 19(193), no. 4, pp. 60-66.