

POSTER PRESENTATIONS

SELECTIVE SYNTHESIS OF THE NOVEL S-ALKYL 3-PHENYLQUINAZOLIN-4(3H)-ONES

F.A. Zulpanov¹, B.Zh. Elmuradov¹, M. Bodensteiner², A.G. Tojiboev³

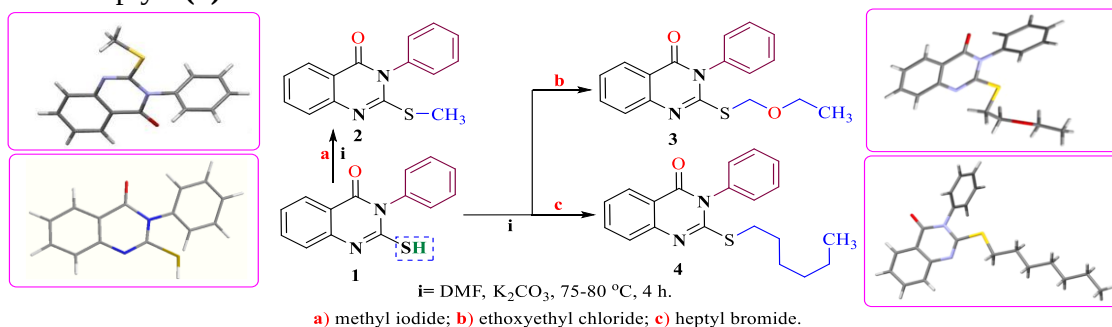
¹S.Y. Yunusov Institute of the Chemistry of Plant Substances, 77, Mirzo-Ulugbek Str.,
Tashkent, 100170, Uzbekistan

²University of Regensburg, Germany

³ University of Geological Sciences, Tashkent

In recent years, quinazolones have been extensively investigated as inhibitors of biological targets involved in numerous biochemical processes. Therefore, considerable research efforts have been directed toward the targeted synthesis and structural modification of these heterocyclic compounds, evaluation of their biological activities, and the development of novel drug candidates based on promising biologically active molecules. Drugs such as neratinib, fruquintinib, and vandetanib, which have recently been used in the treatment of tuberculosis and cancer, are representative examples of the therapeutic potential of quinazolone-based compounds [1,2].

In this study, the 2-mercapto-3-phenylquinazolin-4(3H)-one (**1**) was subjected to S-alkylation with various alkylating agents in DMF in the presence of K₂CO₃ at 75–80°C for 4 h. As the alkylating agents were used methyl iodide, 2-methoxyethyl chloride and heptyl bromide. As a result, the corresponding S-methyl- (**2**), S-(2-methoxyethyl)- (**3**), and S-heptyl- (**4**) derivatives were obtained:



The target products were synthesized in good (67-70%) yields. The physicochemical properties of the synthesized compounds were characterized by ¹H NMR and single crystal X-ray structure analysis. The use of different alkylating reagents enabled the synthesis of new alkyl thioether derivatives.

Acknowledgments. The authors gratefully acknowledge the financial support provided by the Academy of Sciences of the Republic of Uzbekistan through the research project entitled "Creation of scientific foundations for the targeted synthesis of new highly biologically active synthetic and natural compounds for the needs of agriculture and medicine using modern methods of organic synthesis" and The authors gratefully acknowledge the X-ray equipment support provided by the X-ray Structure Analysis Department of the University of Regensburg, Germany, in the framework of the DFG project "Quantum Crystallographic Exchange between Uzbekistan and Germany".

References

1. Singh K, Sharma P, Kumar A, Chaudhary A, Roy R. *Mini reviews in medicinal chemistry*. 2013, 3 (8): 1177-1194.
2. Auti P.S., George G., Paul A.T. *RSC Adv*. 2020, 10 (68): 41353-41392.