

INTERACTION OF POLYPRENOLS ISOLATED FROM *Vitis vinifera* LEAVES WITH PHENYLISOTHIOCYANATE

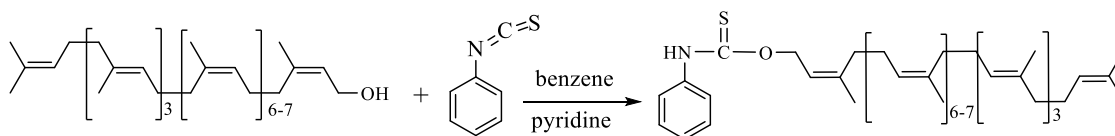
U.T. Zokirova, I.S. Ortikov, N.K. Khidirova

S.Y. Yunusov Institute of the Chemistry of Plant Substances, 77, Mirzo-Ulugbek Str.,
Tashkent, 100170, Uzbekistan, E-mail: umidaicps@gmail.com

In recent years, alongside other classes of natural compounds, considerable attention has been devoted to the modification of biologically active polyprenols (PPs). It has been established that the polyprenol fraction obtained from *Vitis vinifera* leaves exhibits pronounced hepatoprotective activity under conditions of CCl₄-induced liver injury and is comparable in efficacy to the hepatoprotective drug Karsil [1].

Previously, we investigated the acylation of polyprenols with anhydrides of monocarboxylic acids as well as dicarboxylic acids. The reactions were carried out both in the presence of a solvent and catalytic amounts of pyridine, and under microwave irradiation (MWI) in the absence of a solvent [2].

The present study reports the results of an investigation into the reaction of polyprenols (PPs) with phenyl isothiocyanate. The reaction was performed in benzene in the presence of catalytic amounts of pyridine, as illustrated in the following reaction scheme:



As a result, new polyprenol derivatives, namely *O*-prenyl phenylcarbamothioates, were obtained in good yields. The formation of the new products was confirmed by thin-layer chromatography (TLC) and mass spectrometric analysis. In the ESI mass spectra, the molecular ion peaks corresponding to *O*-undecaprenyl phenylcarbamothioate and *O*-dodecaprenyl phenylcarbamothioate were observed at *m/z* 901 and *m/z* 970, respectively. In addition, characteristic fragment ions at *m/z* 842 and *m/z* 911, corresponding to the [M – NCS]⁺ species, were detected.

Thus, for the first time, the reactions of polyprenols isolated from *Vitis vinifera* L. leaves with phenyl isothiocyanate have been carried out. The structures of the newly synthesized products were confirmed by mass spectrometric analysis.

References

1. E.V. Vays, S.M. Yusupova, N.K. Khidirova, G.A. Shakhmurova, F.R. Egamova, F.R. Khushbaktova, U.T. Zokirova, and V.N. Syrov. *Comparative Study of the Hepatoprotective Activity of Polyprenols from Vitis vinifera (Vitaprenol) and Karsil in Rats with Carbon Tetrachloride-Induced Hepatitis*. Journal of Critical Reviews, 2020, 7(13), 724–727.
2. U.T. Zokirova, N.K. Khidirova, H.U. Khodjanizayov, and Kh.M. Shakhidoyatov. *Acylation of Grape Leaf Polyprenols*. American Chemical Science Journal, 2013, 3(2), 124–136.