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THE INFLUENCE OF *Euophorbia* TERPENOIDS AND POLYPHENOLS ON MRP1 PROTEIN ACTIVITY IN HUMAN ERYTHROCYTES

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The main molecular mechanism responsible for multidrug resistance (MDR) phenotype in tumor cells is an efflux of drugs from neoplastic cells carried out by transporter proteins present in the plasma membrane. One of the most extensively studied transporters is the multidrug resistance-associated protein 1 (MRP1), a member of the ATP-binding cassette (ABC) superfamily. MRP1 was found in plasma membranes of various tumor cells but also in normal cells, for example erythrocytes. The aim of this study was to analyze the influence of selected plant-originated compounds on the transport activity of MRP1. The analyzed compounds were obtained by methanol-based extraction from *Euophorbia lagascae* and *Euophorbia tuckeyana* tissues or by chemical modification of the natural compounds. In the functional assay the efflux of fluorescent MRP1 substrate (BCECF) from erythrocytes was measured. Among the analyzed compounds from *Euphorbia* species, several good inhibitors of MRP1 activity were identified. Especially stilbenes (e.g. piceatannol and its derivatives) and flavonoids (e.g. aromadendrin and naringenin) constituted the groups of compounds rich in effective MRP1 modulators. We concluded that *Euphorbia* species were the promising source of new modulators that could be used for further studies on the mechanisms of inhibition of the MRP1transport activity.