



Slovak Society of Chemical Engineering
Institute of Chemical and Environmental Engineering
Slovak University of Technology in Bratislava

PROCEEDINGS

52nd International Conference of the Slovak Society of Chemical Engineering SSCHE 2026

Hotel SOREA TRIGAN
Štrbské Pleso, Slovakia
May 26 - 29, 2026

Editors: Assoc. prof. Mário Mihal'

ISBN: 978-80-8208-177-3, EAN: 9788082081773

Published by the Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava in Slovak Chemistry Library for the Institute of Chemical and Environmental Engineering; Radlinského 9, 812 37 Bratislava, 2026

Karaba, S., Pätoprstý, V., Kopáčová, M., Filčáková, A., Tomash, J., Rajniak, P.: Characterization and identification of anthocyanins in natural extracts, Editors: Mihal', M., In *52nd International Conference of the Slovak Society of Chemical Engineering SSCHE 2026*, Štrbské Pleso, Slovakia, 2026.

Characterization and identification of anthocyanins in natural extracts

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Key words: anthocyanins, natural substances, analytical methods, bioactive compounds

Over the years, considerable interest has developed in fruits and vegetables containing high concentrations of flavonoids, due to their potential biological effects and health benefits. They are among the powerful antioxidants that protect cells from oxidative stress, reduce inflammation, and support cardiovascular health. They are responsible for the characteristic coloration of many plant sources such as blueberries, chokeberries, grapes, etc. In nature, six basic anthocyanidins are most commonly found, which differ in the number and position of -OH and -OCH₃ groups on the aromatic ring, which affects their color, stability, and antioxidant properties. In addition to the basic aglycones, natural substances also contain their glycosides, to which a sugar is attached, e.g. glucose, galactose, arabinose.

The aim of the work is to identify anthocyanins present in several selected natural extracts. Before measuring the sample using the selected analytical method, material preparation and separation of bioactive compounds using lyophilization, extraction, and ultrasonic homogenizer are necessary. The obtained results allowed the identification of several anthocyanidins and their glycosides and provided a more detailed view of their representation in the analyzed extracts.