ANTHOCYANINS, FROM BIOSYNTHESIS IN PLANTS TO HUMAN HEALTH BENEFITS
— review —

SIMONA OANCEA¹, LETIŢIA OPREAN

“Lucian Blaga” University of Sibiu, Romania, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu, Romania

Abstract
Anthocyanins are an important group of highly hydrosoluble pigments in most species of plants. They are produced by secondary metabolism of plants (pentosophosphate, shikimate and flavonoid pathways) and are accumulated in cell vacuoles. In fruits and vegetables anthocyanins are present in the form of glycosides.
The qualitative and quantitative determination of anthocyanins can be performed by classical techniques, such as spectrophotometry, or modern analytical methods, such as HPLC coupled with mass spectrometry detection, liquid chromatography, and thin-layer chromatography. Structural elucidation and conformational analysis can be performed by NMR techniques.
Humans ingest reasonable amounts of anthocyanins through fruits, vegetables and red wines from the diet. Anthocyanins have beneficial role in human health, through their antioxidant properties, being protective against cardiovascular diseases, some types of cancer, diabetes, visual disturbances, liver damage, or UV-B radiation. Supplements containing anthocyanin extracts or new sinergistic blends (OptiBerry) were produced to improve human health. As they are responsible of plant pigmention, may also offer a natural alternative to food colorings, in particular in soft drinks.

Keywords: anthocyanin, berry, pH differential method, free radicals, biological activity

¹ Corresponding author. Mailing address: University “Lucian Blaga” of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, 7-9 Ion Raţiu street, 550012 Sibiu, Romania. Phone: 0040/269/211338. Fax: 0040269212558. E-mail address: simona.oancea@ulbsibiu.ro

Acta Universitatis Cibiniensis Series E: FOOD TECHNOLOGY
Vol. XV (2011), no.1, p. 3-16