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Polyphenolic extracts from selected edible plants protect pancreatic β TC3 and hepatic HepG2 cells viability and function against oxidative stress in diabetes

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Epidemiological data indicate that diabetes is one of the main health problems of the world. Type 2 diabetes (T2D), which is usually a result of wrong dietary habits and reduced physical activity, represents 85-95% of all diabetes cases and among other diet related diseases is the major cause of deaths. The disease is associated mainly with irregularities in the insulin secretion, attenuated insulin sensitivity and pancreatic beta cells dysfunction caused by multiple stimuli including glucotoxicity, lipotoxicity, proinflammatory cytokines, endoplasmatic reticulum stress and oxidative stress, which lead to increased level of blood glucose concentration after meals. Since polyphenols possess multiple biological activities and constitute an important part in human diet, they have recently emerged as critical phytochemicals in type 2 diabetes prevention and treatment. This study investigates polyphenolic extracts obtained from selected edible plants, which were screened in terms of protective activity against oxidative stress induced by tert-butylhydroperoxide (t-BOOH) in β TC3 pancreatic and HepG2 hepatic cells. These cell lines are commonly used as model targets for antidiabetic drugs.

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Biography

Małgorzata Zakłós-Szyda has completed her PhD studies at Lodz University of Technology in Technical Sciences (Molecular Biotechnology). She is an Assistant Professor in Faculty of Biotechnology and Food Sciences.

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