

3rd World Congress on

PUBLIC HEALTH AND NUTRITION

February 26-28, 2018 London, UK

DEVELOPMENT OF LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY FOR THE DETERMINATION OF RESVERATROL, POLYDATIN AND MELATONIN IN GRAPE AND RED WINE

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Since the finding of trans-resveratrol in grape in 1976, the research on the bioactivity and analytical method of resveratrol, a polyphenolic phytoalexin, (3,5,4'-trihydroxy-trans-stilbene) has drawn great attention. The functions of trans-resveratrol include: prevention of cancer; anti-oxidation, anti-inflammatory; improvement for the metabolism of lipid and to prevent cardiovascular diseases, etc. The potential sources of trans-resveratrol include grape, red wine, Japanese knotweed extract (polygonum cuspidatum), Vitis berries skins and leaves, peanut sprouts, soybean and peanut oils. Polydatin, also called piceid, (2-[3-Hydroxy-5-[(E)-2-(4-hydroxyphenyl)ethenyl]phenoxy]-6-(hydroxymethyl)oxane-3,4,5-triol), is a stilbenoid glucoside and is a natural precursor of resveratrol. It can also be isolated from the Japanese knotweed. Polydatin is known to induce defensin production and reduces inflammatory response. Melatonin (N-acetyl-3-(2-aminoethyl)-5-methoxyindole; N-acetyl-5-methoxy tryptamine), an indoleamine, is a neurohormone produced by the pineal gland of animals. It has many physiological effects on humans including ones that influence circadian rhythm, sleeping disorders, jet lag, free radical disorders, and cancer. The development of a sensitive and specific method for the simultaneous determination of multiple polyphenols and melatonin by LC-MS/MS will be reported. And, the analytical performance will also be evaluated in this work.

Biography

Suh-Jen Jane Tsai had her Ph.D. at the Department of Chemistry, Ohio State University, Columbus, Ohio, USA. She has been a Professor at Providence University, Taiwan since her graduation from OSU. Her major interests include the development of innovative analytical techniques for a variety of advanced materials, such as resveratrol in wine and grapes, bile acids in livers, metal contents in alloys. She served as the Chair of the Department of Applied Chemistry and the Dean of the College of Science. Her achievements in teaching, administration and research make her a Distinguished Professor in the Providence University.

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