

March 26-27, 2018
Edinburgh, Scotland

Mariana Stuparu Cretu, J Pediatr Care, Volume 4
DOI: 10.21767/2471-805X-C1-004

INULIN, A PREBIOTIC PLANT METABOLITE FOR CHILDREN – AN ENRICHED FORMULA

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Clinical studies have demonstrated that inulin-type fructans added to infant food formula have significant effects on intestinal flora because of their prebiotic potential and influence the innate and adaptive immune response favorably. Therefore, people who have consumed inulin have a steady state of well-being. Our main goal was to extract, isolate and characterize the inulin-type fructans from *Cichorium intybus* and *Taraxacum officinale* roots in order to evaluate the prebiotic activity of this polysaccharide. The sources of inulin, *Cichorium intybus* (chicory) and *Taraxacum officinale* (dandelion) roots, was collected from Romanian south-east spontaneous flora. The inulin was extracted from plant material by fractionation with different solvents. The content of saccharides from the organic extracts was quantified using spectrophotometric methods and HPTLC technique and commercial inulin, as standard solution. The presence of other different chemical compounds from extracts was highlighted using attenuated total reflectance Fourier transform infrared spectroscopy (ATR-FTIR). The prebiotic activity of inulin from extracts was performed in the presence of *Lactobacillus plantarum* strains and a commercial product. The highest content of inulin-type fructans was found in *Cichorium intybus* roots compared to the *Taraxacum officinale* roots extract. Both plant extracts showed similar functional groups like the inulin standard solution (C-C: 1018÷1044 cm⁻¹ and C-OH: 1106.06÷1114 cm⁻¹). Thus, the chemical structure of

the compounds found in the plant extracts is almost similar to that of the standard solution of inulin. *Lactobacillus plantarum* strains showed a significant growth dynamics in the presence of both extracts compared to the sample represented by a commercial product. In conclusion, *Taraxacum officinale* roots are characterized by an essential prebiotic potential due, like of *Cichorium intybus*, to their significant inulin content and can be used as natural additives resources to improve the textural and organoleptic properties of various food daily products for children

Biography

Stuparu Cretu Mariana is a Pediatrician and Generalist, also specialist in general and pediatric ultrasound, family planning and health management. She has completed her PhD in Pediatrics at 2013 from Carol Davila University of Medicine and Pharmacy, Bucharest, Romania. Now, she is the Medical Director of Obstetrics Gynecologie Hospital BunaVestire of Galati and Associate Professor at Faculty of Medicine and Pharmacy, Dunarea de Jos University of Galati. She is concerned about different areas of health, preferential nutritional health of the population, metabolic syndrome, adolescent health, pediatric gynecology, health education. She has presented several research papers at different conferences and congresses.

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