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Clearly healthy: Novel natural invisible carriers for nutraceuticals

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The enrichment of clear beverages with hydrophobic nutraceuticals is a tough challenge, but an important one to overcome. This is because water and popular soft drinks are consumed by practically everyone, and hence may serve as excellent platforms for improving public health by providing essential micronutrient and health-promoting agents as a mean of preventive medicine. The challenge comprises multiple elements: poor aqueous solubility of the hydrophobic nutraceuticals, high sensitivity to deterioration by oxidation and other chemical and physical factors, adverse sensory properties of certain nutraceuticals, high costs of the bioactive and of the solubilization/encapsulation materials used, processing, storage and shipment conditions, limitations, regulatory hurdles, including strict limitations on health claims, and on novel ingredients and technologies, religious constraints (Kosher, Halal), allergenicity of certain encapsulating materials, consumer demand for label friendly ingredients ("all natural ingredients"), poor bioavailability of certain hydrophobic nutraceuticals using natural biopolymers in nature-inspired approaches, with great emphasis on enrichment of clear beverage systems. The talk will provide an overview the main technologies we have introduced and studied, including: beta Beta lactoglobulin (β -lg)-polysaccharide electrostatic nanocomplexes, Thermally treated β -lg-EGCG nanoparticles, beta casein (β -CN) micelles, beta-conglycinin β -Cg) nanoparticles, self-assembling Maillard reaction conjugates, hydrophobin co-assemblies, and lately, new plant-protein-based nanoparticles.

Biography

Yoav D Livney did his PhD in 2017, in Food Engineering & Biotechnology Technion Israel; Post-Doc in Food Science, UoG, Guelph, Ontario, Canada. He is at Technion since 2004- Lecturer; 2007- Asst. Professor, 2012- Assoc. Prof. He is an expert in physical chemistry of biopolymers, and bioactives delivery. He received many Honors & Awards including the President of Israel's honor roll, and the Goldberg Research Prize. He has authored ~40 publications, 8 patents, gave over 30 invited talks and many contributed presentations at international conferences, and mentored 12 MSc and 7 PhD students.

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