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Nota di contenuto	Analytical Strategies To Determine Artificial Sweeteners By Liquid Chromatography-Mass Spectrometry -- Artificial Sweeteners -- Aspartame and Pharmacological Effects -- Beneficial Effects of Stevia Rebaudiana Bertoni and Steviol-related Compounds on Health -- Biotechnological Production of Natural Zero-Calorie Sweeteners --

Biotransformation of Mogrosides -- Brazzein in the Complex with the Human Sweet Receptor -- Brazzein: A Natural Sweetener -- Characterization of Artificial Sweeteners Using Raman Spectroscopy -- Cultivation of Stevia rebaudiana Bertoni and Associated Challenges -- Glycyrrhiza Glabra: Chemistry and Pharmacological Activity -- Health Implications of Fructose Consumption in Humans -- Low Calorie Intense Sweeteners Safety Aspects -- Marker-Trait Association Study for Sucrose and Yield Contributing Traits in Sugarcane -- Mass Production of the Taste-Modifying Protein miraculin in transgenic plants -- Non-Nutritive Sweeteners and Their Role in the Gastrointestinal Tract -- Pharmacological Activities of Glycyrrhizinic Acid (“Glycyrrhizin”) and Glycyrrhetinic Acid -- Somatic Embryogenesis Stevia Rebaudiana -- Stevia Rebaudiana's Antioxidant Properties -- Steviol Glycosides: Natural Non-Caloric Sweeteners -- Sucralose and its Biological Effects -- Sugar Alcohols as Sugar Substitutes in Food Industry -- Sweet Plant Protein Mabinlin and its Recombinant Expression -- Sweet Taste Receptor Signalling Network and Low Calorie Sweeteners -- Sweeteners: Regulatory Aspects -- Sweet-Tasting Protein Thaumatin:Physical and Chemical Properties -- Tagatose Stability -- The Recent Development of a Sweet-Tasting Brazzein and its Potential Industrial Applications -- The Role of Dietary Sugars and Sweeteners in Metabolic Disorders and Diabetes -- Transgenic Plants as Supersweet Protein Thaumatin II Producers -- Transgenics with Monellin -- Xylitol as Sweetener -- Xylitol: One Name, Numerous Benefits.

Sommario/riassunto

This handbook compiles comprehensive reference information on sweeteners for academic researchers and professionals. It discusses both natural as well as synthetic products, considering health-related and economical aspects. Renowned authors mostly from academia, but also from the industry, summarize information about the chemistry, biological and pharmacological aspects, as well as bioavailability and applications of sweeteners. The book introduces various substance classes of sweeteners, which are mainly plant-derived, including glycosidic and terpenoid sweeteners, peptidic sweeteners, sweet-tasting proteins and protein-derived sweeteners (e.g. stevioside, sucralose, aspartame, thaumatin, brazzein and many more). Chapters address topics such as the isolation and purification of the compounds, their physical, chemical and biological properties, pharmacological activities, and also critically discuss their applications in view of health and ecotoxicological aspects. A special emphasis is on low or no-calorie sweeteners, for which there is an increasing demand and intensified research activities currently. This reference work hence provides the readers with key information and will serve the needs of graduate students and scholars, researchers and professionals working in the fields of chemistry, botany, biotechnology, or pharmacological or agricultural research, as well as in the food industry or the marketing of sweeteners.v>.