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Nota di contenuto	Chemistry of Food Additives and Preservatives; Contents; Preface; Introduction; List of Abbreviations; 1 Antioxidants and Radical Scavengers; 1.1 CHEMISTRY OF FREE RADICALS AND ANTIOXIDANTS; 1.1.1 Introduction; 1.1.2 The formation of ROS in living systems; 1.1.3 Negative effects of oxidants in food processes and to food consumers; 1.1.4 Reactive oxygen/nitrogen species and aging; 1.2 TYPES OF ANTIOXIDANTS; 1.2.1 Natural antioxidants of plant origin; 1.2.2 Phenolic non-flavonoid antioxidant compounds from natural sources; 1.2.3 Phenolic flavonoid antioxidant compounds from natural sources

1.2.4 Acidic functional groups responsible for antioxidant activity 1.3  
EFFICACY OF DIFFERENT ANTIOXIDANTS; 1.4 ACTION MECHANISMS OF ANTIOXIDANTS; 1.4.1 Quenching; 1.4.2 Hydrogen transfer; 1.4.3 Charge transfer; 1.4.4 Bond-breaking; 1.5 STRUCTURE-ACTIVITY RELATIONSHIP OF ANTIOXIDANTS; 1.5.1 Polyphenol antioxidants; 1.5.2 Flavonoid antioxidants; 1.5.3 Mechanism of reactions of flavonoid antioxidants with radical scavengers; 1.6 FACTORS AFFECTING ANTIOXIDANT ACTIVITY; 1.6.1 Temperature; 1.6.2 Activation energy and redox potential; 1.6.3 Stability; 1.7 QUALITY ASSESSMENT OF DIETARY ANTIOXIDANTS

1.7.1 Total radical trapping antioxidant parameter/oxygen radical absorbing capacity 1.7.2 Hydroxyl radical antioxidant capacity (HORAC); 1.7.3 DPPH; 1.7.4 Ferric reducing antioxidant power; 1.7.5 Trolox equivalent antioxidant capacity (TEAC); 1.7.6 ABTS; 1.7.7 Copper (Cu<sup>2+</sup>) reduction; 1.7.8 Photochemiluminescence (PCL); 1.7.9 Chemiluminescence; 1.7.10 Fluorometric; 1.7.11 N, N-dimethyl-p-phenylenediamine; 1.7.12 Low-density lipoprotein (LDL); 1.7.13 Thiobarbituric acid reactive substances (TBARS); 1.7.14 Brigg-Rauscher; 1.7.15 Electrochemical; 1.7.16 -carotene bleaching

1.7.17 Comparison of different assays for dietary total antioxidant capacity 1.8 HOW SAFE ARE FOOD ANTIOXIDANTS?; 1.8.1 Electrochemical; 1.8.2 High-performance liquid chromatography (HPLC); 1.8.3 Capillary electrophoresis; 1.8.4 Mass spectrometry; 1.8.5 Spectroscopy; 1.9 SUMMARY; REFERENCES; FURTHER READING; 2 Emulsifiers; 2.1 MECHANISMS OF FOOD EMULSIFIERS; 2.2 THE ROLE OF EMULSIFIERS IN FOODS; 2.2.1 Emulsification; 2.2.2 Starch complexing; 2.2.3 Foam stabilisation and aeration; 2.3 CLASSIFICATION OF EMULSIFIERS; 2.3.1 Hydrophilic-lipophilic balance; 2.3.2 Ionic charge 2.3.3 Crystal stability 2.4 TYPES OF FOOD EMULSIFIERS; 2.4.1 Main classification; 2.4.2 Low-molecular-weight glyceride emulsifiers; 2.4.3 High-molecular-weight (polymeric) emulsifiers; 2.4.4 Natural emulsifiers; 2.5 QUALITY AND ANALYSIS OF FOOD EMULSIFIERS; 2.5.1 Peroxide value; 2.5.2 Saponification value; 2.5.3 Hydroxyl value; 2.5.4 Acid number; 2.5.5 Iodine value; 2.5.6 Chromatography; 2.6 FOODS CONTAINING EMULSIFIERS; 2.6.1 Mayonnaise; 2.6.2 Margarine; 2.6.3 Butter; 2.6.4 Ice-creams; 2.6.5 Dairy emulsifiers and emulsions; REFERENCES; FURTHER READING

3 Stabilisers, Gums, Thickeners and Gelling Agents as Food Additives

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#### Sommario/riassunto

The Chemistry of Food Additives and Preservatives is an up-to-date reference guide on the range of different types of additives (both natural and synthetic) used in the food industry today. It looks at the processes involved in inputting additives and preservatives to foods, and the mechanisms and methods used. The book contains full details about the chemistry of each major class of food additive, showing the reader not just what kind of additives are used and what their functions are, but also how they work and how they can have multiple functionalities. In addition, this book cove

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