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6. Chemical Modifications of Alpha-Tocopherol; 7. Functions and

Activities of Tocotrienols and Tocopherols In Vitro

8. An Overview of Free Radicals and Oxidative Stress: Setting the Scene 9. Tocopherol Composition of Plants and Their Regulation: 10. Efficiency of Extracting Vitamin E from Plant Sources; 11. Commercial Extraction of Vitamin E from Food Sources; 12. Overview of Tocopherol Composition of Oils; 13. Changes in Tocopherol Composition of Edible Oils after Extreme Heat Exposure (frying); 14. Analysis of Vitamin E by HPLC; 15. Capillary Electrochromatographic Analysis of Tocopherols 16. GC-MS and LC-MS/MS Techniques to Quantify Alpha-Tocopherol and Alpha-Tocopherolguinone: Applications to Biological and Food Matrices 17. Assay of Free Radical-generated Cholesterol Metabolites and Alpha-Tocopherol in Plasma and Tissues; 18. Interactions of Vitamin E with Biomembrane Models: Binding to Dry and Watercontaining Reversed Micelles; Part II: Dietary and Nutritional Influences and General Effects; 19. Vitamin E Bioavailability; 20. Circulating Concentrations of Vitamin E in Populations; 21. The Relationship Between Tocotrienols and Tocopherols in the Diet 22. The Relationship Between Alpha-Tocopherol and Selenium in the Diet23. The Relationship Between Alpha-Tocopherol, Selenium and Fish Oil in the Diet and Effects on the Heart and Liver; 24. Vitamin E Status in the Elderly; Part III: Cocktails, Antioxidant Mixtures and Novel Analogues: 25. Efficacy of Tocopherol Mixtures Compared with Alpha-Tocopherol in Cardioprotection; 26. Hyperlipidaemia and the Use of Tocopherol in Antioxidant Cocktails in Smokers; Part IV: General Physiological Systems, Metabolism and Metabolic Stress 27. Tissue Distribution of Alpha-Tocopherol in Oxidative Stress in Rats28. Cellular Metabolism in Vitamin E Deficiency; 29. Role of Vitamin E and Vitamin C in Nuclear Factor-B-Dependent Nitric Oxide Signalling: 30. Modification of the Activation of NF-B by Vitamin E: 31. Vitamin E and Cell Signalling; 32. Vitamin E Supplementation in Diabetes Mellitus; 33. Serum Alpha-Tocopherol and Insulin Therapy in Diabetes: Relationship to Retinol; 34. Lead-induced DNA Damage and Relationship with Vitamin E; 35. Alpha-Tocopherol and Surgical Stress; 36. Ischaemia-reperfusion Injury and Tocopherols Part V: Brain, Neurological and Optical Systems

Sommario/riassunto

Vitamin E is an important dietary constituent which helps in the defence against cellular damage. The process of its absorption from food and its utilisation by the body is an intricate series of reactions. It is also used therapeutically in treating numerous diseases and conditions such as skin damage and the prevention of pathological lesions in major organs, and has been shown to be an important factor in preventing heart disease and cancer. Over 100 chapters from international contributors make this book the most comprehensive reference work in describing both the positive and negative eff