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Farnesyl Diphosphate Synthase. Altering the Catalytic Site to Select for Geranyl Diphosphate Activity
Suzanne M. Stanley-Fernandez, Brenda A. Kellogg, and C. Dale Poulter
(Article), 2008, 39 (50), 15316-15321
DOI: 10.1021/bi001493z

Free-Energy Landscape of Enzyme Catalysis
Stephen J. Benkovic, Gordon G. Hammes, and Sharon Hammes-Schiffer
(New Concepts), 2008, 47 (11), 3317-3321
DOI: 10.1021/bi800049z

The Glycosylphosphatidylinositol Anchor: A Complex Membrane-Anchoring Structure for Proteins
Margot G. Paulick, and Carolyn R. Bertozzi
(Current Topics/Perspectives), 2008, 47 (27), 6991-7000
DOI: 10.1021/bi800632z

AFM: A Nanotool in Membrane Biology
Daniel J. Muller
(Current Topics/Perspectives), 2008, 47 (31), 7986-7998
DOI: 10.1021/bi800753x

DNA Polymerases as Therapeutic Targets
Anthony J. Berdis
(Current Topics/Perspectives), 2008, 47 (32), 8253-8260
DOI: 10.1021/bi01179f

Phospholamban Thiols Play a Central Role in Activation of the Cardiac Muscle Sarcoplasmic Reticulum Calcium Pump by Nitroxyl
Jeffrey R. Froehlich, James E. Mahaney, Güzem Kececi, Christopher M. Pavlos, Russell Goldstein, Abiona J. Redwood, Carlota Sumbilla, Dong I. Lee, Carlo G. Tocchetti, David A. Kass, Nazareno Paolucci, and John P. Toscano
(Rapid Report), 2008, 47 (50), 13150-13152
DOI: 10.1021/bi801925p

Misfolding of the Cystic Fibrosis Transmembrane Conductance Regulator and Disease
Joanne C. Cheung and Charles M. Deber
(Current Topics/Perspectives), 2008, 47 (6), 1465-1473
DOI: 10.1021/bi7022095

Residence Time of Receptor-Ligand Complexes and Its Effect on Biological Function
Peter J. Turrimino and Robert A. Copeland
(Current Topics/Perspectives), 2008, 47 (20), 5481-5492
DOI: 10.1021/bi8002023

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Ahmed Chadli, Elizabeth S. Bruisima, Bridget Stensgaard, and David Toft
(Article), 2008, 47 (9), 2850-2857
DOI: 10.1021/bi702393z

Revisiting Heme Mechanisms. A Perspective on the Mechanisms of Nitric Oxide Synthase (NOS), Heme Oxygenase (HO), and Cytochrome P450s (CYP450s)
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(Current Topics/Perspectives), 2008, 47 (8), 2231-2243
DOI: 10.1021/bi7023817

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Expression of Multidisciplinary Flavor Science: Research Highlights from the 12th Weurman Symposium

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The 12th Weurman Flavour Research Symposium contributed 177 lectures and posters to the wealth of flavor knowledge; these were presented in eight sessions: biology, retention and release, psychophysics, quality, thermal generation, bioflavors, impact molecules, and analytics. Emerging topics were discussed in three workshops dealing with flavor and health, in vivo flavor research, and flavor metabolomics. It has been an excellent forum for passionate exchange of recent results obtained in traditional and emerging fields of flavor research. The symposium allowed coverage of the broad diversity of flavor-related topics: comprising odor and taste; applying targeted and holistic approaches; using sensorial, chemical, biological, physical, and chemometric techniques; as well as considering nutrition and health aspects.

KEYWORDS: Flavor; olfaction; taste; research; symposium

INTRODUCTION

The Weurman Flavor Research Symposium has become established as one of the most renowned international meetings on flavor science taking place every 3 years in Europe (1–11). The first meeting was held in 1975 in The Netherlands, dedicated in memory of Cornelius Weurman, one of the pioneers of flavor research. Since then, this symposium series has become the reference for flavor scientists as a platform addressing both the width and depth of flavor science. Participants from academia and industry actively contribute to the symposium and discuss advances and trends in flavor science in an informal and open atmosphere. Traditionally, many young scientists can present their work, some of them sponsored by the Weurman symposium, and exchange views and experiences with well-known experts in the area.

In July 2008, the 12th Weurman Flavour Research Symposium was organized in Interlaken, Switzerland, by Prof. Renato Amadó and Prof. Felix Escher from the ETH Zurich. About 230 participants from 34 countries contributed 177 lectures and posters to the wealth of flavor-related knowledge. The contributions were grouped in eight sessions: biology, retention and release, psychophysics, quality, thermal generation, bioflavors, impact molecules, and analytics. Emerging topics were discussed in three workshops dealing with flavor and health, in vivo flavor research, and flavor metabolomics. Most of the contributions will be published in the proceedings of the 12th Weurman symposium (12). In this special issue of the *Journal of Agricultural and Food Chemistry*, only a small number of original works are

published, which nevertheless represent well the diversity and trends in "flavor research".

STATUS AND TRENDS IN FLAVOR SCIENCE

Taste and olfactory biology have become driving forces in flavor research, implying biological and chemical methods. Great attention is paid to the molecular biology of olfactory and taste receptors, genetics, and the functional organization of taste buds and the olfactory epithelium. The symposium focused on bitter (13) and salt taste modalities and olfactory structure–activity relationships. Emerging topics are aroma-induced satiation (14) and whether bitter taste sensitivity is related to food intake behavior, nutrition, and health. Industrial applications were also shown using novel taste and chemosensory receptor discovery platforms complemented by chemical approaches to ingredient discovery.

Aroma retention and release have brought together experts from all boards and disciplines, that is, flavor scientists, chemists, physics, mathematicians, and material scientists, to explore experimentally and theoretically questions related to the entrapment and encapsulation of flavor compounds in food matrices and on their release and transport from the food matrix to the sensory receptors. For a flavor molecule to achieve its optimal impact during consumption, it has to be released and transported at the proper time and with the appropriate time–intensity profile to the sensory receptors. This has implications not only for the flavor quality but increasingly also for health and the cost of products. As an example, the effective release of salt from food (15) is essential to reducing the salt content in food products while achieving a high saltiness perception. Furthermore, flavor is often among the most expensive ingredients in food products, yet most of it is simply swallowed with the food matrix without

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