MAILLARD REACTIONS IN CHEMISTRY FOOD & HEALTH

PT. 1

# Maillard Reactions in Chemistry, Food, and Health

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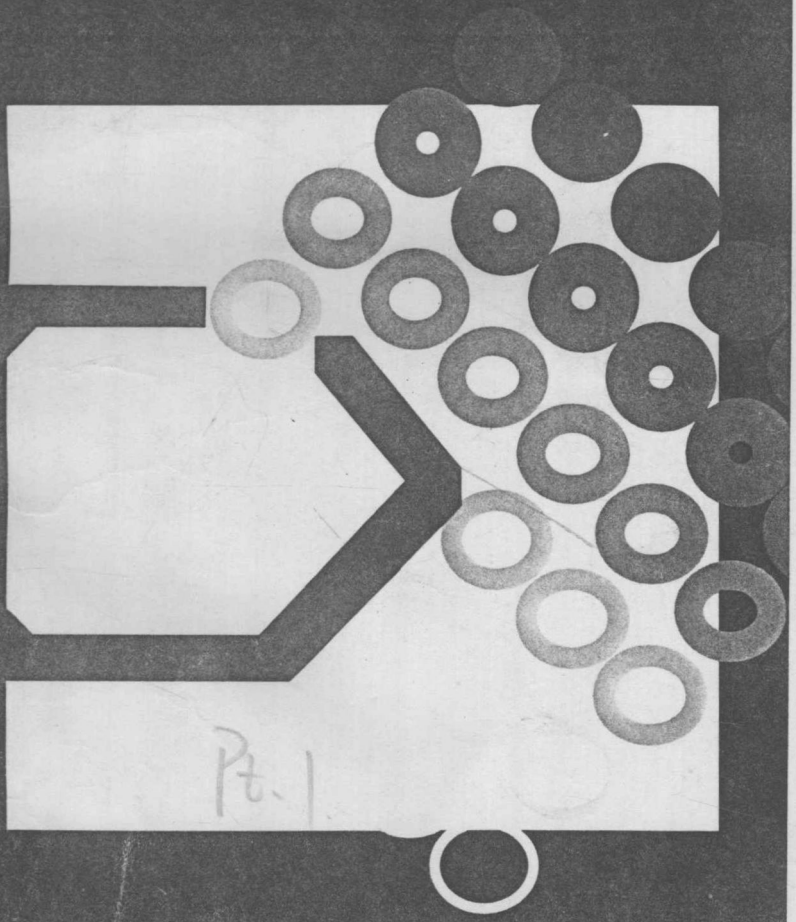



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Maillard Reactions in Chemistry, Food, and Health

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# Dedication

This volume is dedicated to the memory of Professor Franz Ledl who until his recent untimely death was Professor of Food Chemistry and Analytical Chemistry at Stuttgart University in Germany.

Professor Ledl will long be remembered for his many contributions to our present understanding of Maillard reaction chemistry. Especially noteworthy are his basic studies (with J. Beck and T. Severin) on the origin of the aromagenic 1-deoxydiketoses from Amadori compounds [Carbohyd. Res 177, 240 (1988)] and on the formation of visible chromophors during more advanced Maillard processes, for example (with T. Severin) [Z. Lebensm. Unters. Forsch. 175, 262 (1982)].

On par with his research contributions was his talent for teaching and communication. Many future scholars of Maillard chemistry will profit greatly from Professor Ledl's lucid and comprehensive reviews such as those appearing in Z. Ernährungswiss 30, 4 (1991) and (with E. Schleicher) in Angew. Chem. Int. Ed. Engl. 29, 565 (1990).

Professor Ledl's career in the Maillard reaction field was truly widespread ranging initially from traditional food chemistry to the now popular area of glycosylated proteins and the chemistry of aging. Pertaining to cross-linked proteins, Professor Ledl's recent study on the chemistry of hydroxyalkyl pyrroles (with E. Klein, W. Bergmüller and T. Severin) [Z. Lebensm. Unters. Forsch. 194, 556 (1992)] provides future insight for unraveling the longtime enigma of melanoidin structure.

It is hoped that Professor Ledl's students will continue in the fine tradition established by their mentor. Scientific excellence is his legacy for us all.

# Preface

The 5th International Symposium on the Maillard Reaction was held at the University of Minnesota, in Minneapolis, Minnesota (USA) from August 29 through September 1, 1993. Previous symposia were held in Switzerland in 1989, Japan in 1985, the United States in 1982 and Sweden in 1979.

Nearly 300 scientists attended the four day conference to discuss aspects of chemistry, kinetics, technology and toxicology of the reaction in foods and as it relates to health and aging. In total, 61 oral and 52 poster presentations were delivered. The stage for these presentations was set by 3 plenary lectures in the areas of food, health and pharmaceuticals. The banquet speaker provided a most provocative presentation on how the Maillard reaction may well have lead to the superior development of human beings and the demise of the dinosaurs.

The proceedings which follow are complete manuscripts of the oral presentations (including plenary lectures and banquet address) and abstracts of the poster presentations. The final chapter (immediately preceding the poster abstracts) of this book is both a summary of the conference and some thoughts beyond the meeting.

The conference organizers wish to express their appreciation to the University of Minnesota for making the facilities available, the Department of Food Science and Nutrition for its support with the numerous tasks associated with such a meeting and the host of students, both graduate and undergraduate, who helped make everything run smoothly during the meeting.

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