

The eyes of all look to you expectantly, and you give them their food when it is due. You give it openhandedly, feeding every creature to its heart's content.

Psalm 145: 15-16

PREFACE

Twenty naturally occurring amino acids and several hundred amino acid derivatives formed *in vivo* post-translationally in plants and animals and *in vitro* during food processing play a fundamental role in nutrition and other aspects of human and animal health. The general requirements are adequate amounts of the essential amino acids with a reasonable balance among all.

The nutritive value of a specific amino acid depends on its physiological availability, which in turn, is governed by its absorption, transport, and utilization. Bioavailability and biological utilization of amino acids vary widely and depend on source, chemical and metabolic interactions, and on the diet and health of the consumer.

Scientists from many disciplines, including biochemists, physiologists, pharmacologists, physicians, nutritionists, dieticians, animal scientists, veterinarians, and food scientists, need to understand the factors which influence the utilization of amino acids. The widest possible interaction of viewpoint and expertise is needed to transcend present limitations. Results from different species, including humans, need to be compared. Results from *in vitro* studies need to be related to *in vivo* data. The roles of amino acids other than as nutrients need to be defined.

For this volume, therefore, invited contributors were asked to develop at least one of the following overlapping topics:

1. Amino acid absorption, transport, metabolism, and utilization
2. Bioavailabilities of amino acids from different sources
3. Amino acid imbalances, antagonisms, and toxicities
4. Metabolic interrelationships of amino acids
5. Species variation in the utilization of amino acids
6. Enteral and parenteral nutrition
7. Amino acids and disease
8. Detoxification of drugs and xenobiotics by amino acids
9. Chemical, biochemical and another indices of amino acid utilization
10. Analyses of amino acids in foods, body fluids, and tissues

The response was positive and enthusiastic, as evidenced by the fact that authors from twelve countries contributed manuscripts covering the above topics.

This book should catalyze progress and permit the widest possible interaction of viewpoints and expertise on amino acid utilization. It contains contributions from different disciplines with a common concern for theoretical and practical consequences of the nutritional, pharmacological, and medical functions of amino acids. The most important function of this volume, I believe, is dissemination of insights and exchange of ideas so as to permit synergistic interaction among related disciplines. This volume brings together elements needed for such interaction.

I am grateful to all contributors for their help in bringing this volume to fruition.

*I dedicate this book to our grandchildren,
Eitan and Ariela.*

Mendel Friedman