

THE JOURNAL OF  
**NUTRITION**

OFFICIAL PUBLICATION OF  
THE AMERICAN INSTITUTE OF NUTRITION

Official publication of the American Institute of Nutrition. Officers of the Institute for 1985-1986: M. C. Nesheim, *president*; J. A. Olson, *president-elect*; H. P. Broquist, *past president*; C. D. Berdanier, *secretary*; R. O. Nesheim, *treasurer*. Councilors: W. J. Visek, D. A. Roe, E. A. Young, G. F. Combs. *Ex officio*: A. E. Harper, D. H. Calloway. Executive officer: R. G. Allison.

**Contents**

VOLUME 115  
NUMBER 10

**October 1985**

**CRITICAL REVIEW**

- The Importance of Diet Composition in Ultratrace Element Research.  
*Forrest H. Nielsen* ..... 1239

**ARTICLES**

- Incorporation of  $^{14}\text{C}$  into Tissue Lipids after Oral Administration of  $[1-^{14}\text{C}]$ -Linoleic Acid in Rats Fed Different Levels of Essential Fatty Acids.  
*Wulf Becker and Jan-Eric Månsson* ..... 1248
- Chronic Food Restriction Modulates the Advance of Senescence in the Senescence Accelerated Mouse (SAM). *Atsuko Kohno, Tomonori Yonezu, Mutsumi Matsushita, Mika Irino, Keiichi Higuchi, Kayoko Higuchi, Shuji Takeshita, Masanori Hosokawa and Toshio Takeda* .... 1259
- Carnitine in the Streptozotocin-Diabetic Rat. *Stephen D. Brooks, Joseph J. Bahl and Rubin Bressler* ..... 1267
- Effects of Fructose Feeding on Lipid Parameters in Obese and Lean, Diabetic and Nondiabetic Zucker Rats. *Eunsook T. Koh, Janice Mueller, Odutola Osilesi, Allen Knehans and Sheldon Reiser* ..... 1274
- The Effects of Ethanol and Diet on Hepatic and Serum  $\gamma$ -Glutamyltranspeptidase Activities in Rats. *Shinwa Yamada, Jeremy S. Wilson and Charles S. Lieber* ..... 1285
- Transmethylation of Homocysteine to Methionine: Efficiency in the Rat and Chick. *David H. Baker and Gail L. Czarnecki* ..... 1291
- Ocular Infection with Herpes Simplex Virus (HSV-1) in Vitamin A-Deficient and Control Rats. *Kathleen M. Nauss, Christine A. Anderson, Michael W. Conner and Paul M. Newberne* ..... 1300
- Local and Regional Immune Function of Vitamin A-Deficient Rats with Ocular Herpes Simplex Virus (HSV) Infections. *Kathleen M. Nauss and Paul M. Newberne* ..... 1316

(Continued on inside back cover)

# Contents

(Continued from back cover)

Hypocholesterolemic Effect of Soybean Protein in Rats and Mice after Peptic Digestion. <i>Akiko Yashiro, Shinobu Oda and Michihiro Sugano</i> .....	1325
Absence of Chronic Effects of Dietary Protein Content on Brain Tryptophan Concentrations in Rats. <i>John D. Fernstrom, Madelyn H. Fernstrom, Patricia E. Grubb and Etta A. Volk</i> .....	1337
Zinc Utilization in Young Men Fed Adequate and Low Zinc Intakes. <i>Leslie Wada, Judith R. Turnlund and Janet C. King</i> .....	1345
Localization of Lipofuscin in the Duodenum of Vitamin E-Deficient Rats. <i>Martin L. Katz, Anne B. Groome and W. Gerald Robison, Jr.</i> .....	1355
Effects of Dietary Sodium and Chloride on Growth, Efficiency of Feed Utilization, Plasma Electrolytes and Plasma Basic Amino Acids in Young Pigs. <i>Dale C. Honeyfield and John A. Froseth</i> .....	1366
<b>Book Reviews</b> .....	1372

## SYMPOSIUM

### Shifts in Animal Energy Requirements across Physiological and Alimentary States

Energy Costs of Ion Pumping by Animal Tissues. <i>L. P. Milligan and B. W. McBride</i> .....	1374
Assessment of Interrelationships among Levels of Intake and Production, Organ Size and Fasting Heat Production in Growing Animals. <i>L. J. Koong, C. L. Ferrell and J. A. Nienaber</i> .....	1383
<b>Announcements</b> .....	1391