

Contents

Articles

■ RECENT ADVANCES IN NUTRITIONAL SCIENCES

Intestinal Nitrogen Recycling and Utilization in Health and Disease

Werner G. Bergen and Guoyao Wu

821

■ COMMENTARY

Milk-Fat Depression and Lipid Repartitioning in Lactating Dairy Cows

Werner G. Bergen

826

■ BIOCHEMICAL, MOLECULAR, AND GENETIC MECHANISMS

Elevated Corticosterone Associated with Food Deprivation Upregulates Expression in Rat Skeletal Muscle of the mTORC1 Repressor, REDD1

Nora K. McGhee, Leonard S. Jefferson, and Scot R. Kimball

828

Tissue-Specific Alterations in Zinc Transporter Expression in Intestine and Liver Reflect a Threshold for Homeostatic Compensation during Dietary Zinc Deficiency in Weanling Rats

Ming-Yu Jou, Andrew G. Hall, Anthony F. Philipps, Shannon L. Kelleher, and Bo Lönnardal

835

Genetic Variants at the PDZ-Interacting Domain of the Scavenger Receptor Class B Type I Interact with Diet to Influence the Risk of Metabolic Syndrome in Obese Men and Women

Mireia Junyent, Donna K. Arnett, Michael Y. Tsai, Edmond K. Kabagambe, Robert J. Straka, Michael Province, Ping An, Chao-Qiang Lai, Laurence D. Parnell, Jian Shen, Yu-Chi Lee, Ingrid Borecki, and Jose M. Ordovas

842

■ NUTRIENT PHYSIOLOGY, METABOLISM, AND NUTRIENT-NUTRIENT INTERACTIONS

Expression of Enzymes and Key Regulators of Lipid Synthesis Is Upregulated in Adipose Tissue during CLA-Induced Milk Fat Depression in Dairy Cows

Kevin J. Harvatine, James W. Perfield II, and Dale E. Bauman

849

Protein Intake during Weight Loss Influences the Energy Required for Weight Loss and Maintenance in Cats

Ricardo S. Vasconcelos, Naida C. Borges, Karina N. V. Gonçalves, Júlio C. Canola, Francisco J. A. de Paula, Euclides B. Malheiros, Marcio A. Brunetto, and Aulus C. Carciofi

855

Dietary α -Linolenic Acid, EPA, and DHA Have Differential Effects on LDL Fatty Acid Composition but Similar Effects on Serum Lipid Profiles in Normolipidemic Humans

Sarah Egert, Frank Kannenberg, Veronika Somoza, Helmut F. Erbersdobler, and Ursel Wahrburg

861

Glutamate Is the Major Anaplerotic Substrate in the Tricarboxylic Acid Cycle of Isolated Rumen Epithelial and Duodenal Mucosal Cells from Beef Cattle

Samer W. El-Kadi, Ransom L. Baldwin VI, Kyle R. McLeod, Nishanth E. Sunny, and Brian J. Bequette

869

Digestive Stability of Xanthophylls Exceeds That of Carotenenes As Studied in a Dynamic *In Vitro* Gastrointestinal System

Stéphanie Blanquet-Diet, Maha Soufi, Mathieu Rambeau, Edmond Rock, and Monique Airc

876

γ -Tocotrienol and γ -Tocopherol Are Primarily Metabolized to Conjugated 2-(β -carboxyethyl)-6-Hydroxy-2,7,8-Trimethylchroman and Sulfated Long-Chain Carboxychromanols in Rats

Helene Freiser and Qing Jiang

884

Fat Oxidation during Exercise and Satiety during Recovery Are Increased following a Low-Glycemic Index Breakfast in Sedentary Women

Emma J. Stevenson, Nerys M. Astbury, Elizabeth J. Simpson, Moira A. Taylor, and Ian A. Macdonald

890

Human CYP3A4 and Murine Cyp3A11 Are Regulated by Equol and Genistein via the Pregnane X Receptor in a Species-Specific Manner

Yilan Li, Jennifer S. Ross-Viola, Neil F. Shay, David D. Moore, and Marie-Louise Ricketts

898

■ NUTRITION AND DISEASE

Probiotics Reduce the Inflammatory Response Induced by a High-Fat Diet in the Liver of Young Rats

Emanuela Esposito, Anna Iacono, Giuseppe Bianco, Giuseppina Autore, Salvatore Cuzzocrea, Pietro Vajro, Roberto Berni Canani, Antonio Calignano, Giuseppina Mattace Raso, and Rosaria Meli

905

Inflammation and Foveolar Hyperplasia Are Reduced by Supplemental Dietary Glutamine during *Helicobacter pylori* Infection in Mice

Susan J. Hagen, Masa Ohtani, Jin-Rong Zhou, Nancy S. Taylor, Barry H. Rickman, George L. Blackburn, and James G. Fox

912

Curcumin Inhibits Adipogenesis in 3T3-L1 Adipocytes and Angiogenesis and Obesity in C57/BL Mice

Asma Ejaz, Dayong Wu, Paul Kwan, and Mohsen Meydani

919

Meals and Dephytinization Affect Calcium and Zinc Absorption in Nigerian Children with Rickets

Tom D. Thacher, Oluseyi Aliu, Ian J. Griffin, Sunday D. Pam, Kimberly O. O'Brien, Godwin E. Imade, and Steven A. Abrams

926

High-Milk Supplementation with Healthy Diet Counseling Does not Affect Weight Loss but Ameliorates Insulin Action Compared with Low-Milk Supplementation in Overweight Children

Marie-Pierre St-Onge, Laura Lee T. Goree, and Barbara Gower

933

Dietary Seaweed Modifies Estrogen and Phytoestrogen Metabolism in Healthy Postmenopausal Women

Jane Teas, Thomas G. Hurley, James R. Hebert, Adrian A. Franke, Daniel W. Sepkovic, and Mindy S. Kurzer

939

Early Soy Exposure via Maternal Diet Regulates Rat Mammary Epithelial Differentiation by Paracrine Signaling from Stromal Adipocytes

Ying Su, Kartik Shankar, and Rosalia C. M. Simmen

945

Poly (ADP-ribose) Polymerase-1-Inhibiting Flavonoids Attenuate Cytokine Release in Blood from Male Patients with Chronic Obstructive Pulmonary Disease or Type 2 Diabetes

Antje R. Weseler, Liesbeth Geraets, Harald J. J. Moonen, Ralph J. F. Manders, Luc J. C. van Loon, Herman-Jan Pennings, Emiel F. M. Wouters, Aalt Bast, and Geja J. Hageman

952

Orally Administered Lactoferrin Preserves Bone Mass and Microarchitecture in Ovariectomized Rats

Hui Yuan Guo, Lu Jiang, Salam A. Ibrahim, Lian Zhang, Hao Zhang, Ming Zhang, and Fa Zheng Ren

958

Quercetin Enhances Intestinal Barrier Function through the Assembly of Zonula Occludens-2, Occludin, and Claudin-1 and the Expression of Claudin-4 in Caco-2 Cells

Takuya Suzuki and Hiroshi Hara

965

■ NUTRITIONAL EPIDEMIOLOGY

Reproducibility of Plasma Alkylresorcinols during a 6-Week Rye Intervention Study in Men with Prostate Cancer

Rikard Landberg, Afaf Kamal-Eldin, Swen-Olof Andersson, Jan-Erik Johansson, Jie-Xian Zhang, Göran Hallmans, and Per Åman

975

Various Doses of Soy Isoflavones Do Not Modify Mammographic Density in Postmenopausal Women

Gertraud Maskarinec, Martijn Verheus, Francene M. Steinberg, Paula Amato, Margaret K. Cramer, Richard D. Lewis, Michael J. Murray, Ronald L. Young, and William W. Wong 981

Dietary Carotenoid Intake Is Associated with Lower Prevalence of Metabolic Syndrome in Middle-Aged and Elderly Men

Ivonne Sluijs, Joline W. J. Beulens, Diederick E. Grobbee, and Yvonne T. van der Schouw 987

The Protective Association of High Plasma Enterolactone with Breast Cancer Is Reasonably Robust in Women with Polymorphisms in the Estrogen Receptor α and β Genes

Emily Sonestedt, Malin I. L. Ivarsson, Sophia Harlid, Ulrika Ericson, Bo Gullberg, Joyce Carison, Håkan Olsson, Herman Adlercreutz, and Elisabet Wirfält 993

Low Vitamin D Status Has an Adverse Influence on Bone Mass, Bone Turnover, and Muscle Strength in Chinese Adolescent Girls

Leng Huat Foo, Qian Zhang, Kun Zhu, Guansheng Ma, Xiaoqi Hu, Heather Greenfield, and David R. Fraser 1002

Soybean Product Intake Modifies the Association between Interleukin-10 Genetic Polymorphisms and Gastric Cancer Risk

Kwang-Pil Ko, Sue K. Park, Lisa Y. Cho, Jin Gwack, Jae Jeong Yang, Aesun Shin, Cheong Sik Kim, Yeonju Kim, Daehee Kang, Soung-Hoon Chang, Hai-Rim Shin, and Keun-Young Yoo 1008

■ **COMMUNITY AND INTERNATIONAL NUTRITION**

Multi-Micronutrient-Fortified Biscuits Decreased Prevalence of Anemia and Improved Micronutrient Status and Effectiveness of Deworming in Rural Vietnamese School Children

Tran Thuy Nga, Pattanee Winichagoon, Marjoleine A. Dijkhuizen, Nguyen Cong Khan, Emom Wasantwisut, Harold Furr, and Frank T. Wieringa 1013

Provision of Multiple Rather Than Two or Fewer Micronutrients More Effectively Improves Growth and Other Outcomes in Micronutrient-Deficient Children and Adults

Lindsay H. Allen, Janet M. Peerson, and Deanna K. Olney 1022

■ **NUTRITIONAL IMMUNOLOGY**

Biotin Status Affects Nickel Allergy via Regulation of Interleukin-1 β Production in Mice

Toshinobu Kuroishi, Masayuki Kinbara, Naoki Sato, Yukinori Tanaka, Yasuhiro Nagai, Yoichiro Iwakura, Yasuo Endo, and Shunji Sugawara 1031

High Milk Consumers Have an Increased Risk of Folate Receptor Blocking Autoantibody Production but This Does Not Affect Folate Status in Spanish Men and Women

Maria Isabel Berrocal-Zaragoza, Michelle M. Murphy, Santiago Ceruelo, Edward V. Quadros, Jeffrey M. Sequeira, and Joan D. Fernandez-Ballart 1037

Dietary Curcumin and Limonin Suppress CD4⁺ T-Cell Proliferation and Interleukin-2 Production in Mice

Wooki Kim, Yang-Yi Fan, Roger Smith, Bhimanagouda Patil, Guddadarangavvanahally K. Jayaprakasha, David N. McMurray, and Robert S. Chapkin 1042

Announcements 1049