Protein and Co-Products (PCP) Interest Area

Tentative Technical Program

The presenter is the first author or otherwise indicated with an asterisk (*).

Protein and Co-Products 2017 Session Planning Roundtable
Tuesday, May 3 at 12:15 pm

All meeting attendees are invited to attend Roundtable discussions and assist in developing the technical program for the 2017 AOCS Annual Meeting. AOCS and the Annual Meeting Program Committee greatly value your input!
Division membership is not required to participate.

Monday Afternoon

PCP 1: Protein Co-Products: New Sources, New Technology, and New Applications

Chairs: K. Liu, USDA, ARS, USA; and H. Wang, Iowa State University, USA


Effects of Steam Distillation on Extraction, Composition, and Functional Properties of Coriander (Coriandrum sativum L.) Proteins. M.P. Hojilla-Evangelista and R.L. Evangelista, USDA, ARS, NCAUR, USA.

Value Addition to Canola Meal—Progresses on Developing Canola Protein Based Wood Adhesives. N.P. Bandara and J. Wu, Dept. of Agricultural, Food, & Nutritional Science, University of Alberta, Canada.

Composition, Mineral Profiles, and Characterization of the Ash Component for 12 Algae Samples. K. Liu, R. Barrows, and M. Woolman, USDA, ARS, USA.

Camelina Protein-knowledge for Co-product Development from a New Industrial Crucifer Oilseed. S.P. Perera¹,², T.C. McIntosh¹, R.T. Tyler¹, D. Hegedus¹,², and J.P.D. Wanasundara¹,², ¹Saskatoon Research Centre, Agriculture & Agri-Food Canada, Canada, ²Dept. of Food & Bioproduct Sciences, University of Saskatchewan, Canada.

Edible Insects as Sources of Proteins for Nutrition and Health. C.C. Udenigwe, H. Fisher, and C. Cutler, Dalhousie University, Canada.

Isolation and Functionality Evaluation of Egg Yolk Granule. Z. Zhang¹, G. Cavender¹, C. Xu¹, R. Flores¹, and Y. Zhang*,¹ Food Processing Center, University of Nebraska-Lincoln, USA, ¹Dept. of Food Science & Technology, University of Nebraska-Lincoln, USA.
Tuesday Morning

PCP 2a: Protein Allergenicity

**Chairs: B.P. Lamsal, Iowa State University, USA; and L. L'Hocine, Agriculture & Agri-Food Canada, Canada**

**Effects of Food Processing on Tree Nut Allergen Immunoreactivity.** S.K. Sathe, C. Liu, and V.D. Zaffran, Florida State University, USA.

**Food Allergen Detection and Complex Foodstuffs.** P.E. Johnson, University of Nebraska, Lincoln, USA.

**Tree Nut Detection and Quantification Using Monoclonal Antibody (mAb)-based Enzyme-linked Immunosorbent Assays (ELISA).** C. Liu, V.D. Zaffran, S. Gupta, and S.K. Sathe, Florida State University, USA.

**Role of Food Processing and Food Matrix in Defining Protein Allergenic Potential.** L. L'Hocine, Agriculture & Agri-Food Canada, Canada.

**Immunoreactivity of Select Rosaceae Seed Proteins.** V.D. Zaffran, C. Liu, S. Gupta, and S.K. Sathe, Florida State University, USA.

PCP 2b: General Protein and Co-Products

**Chairs: B.P. Lamsal, Iowa State University, USA; and L. L'Hocine, Agriculture & Agri-Food Canada, Canada**

**A Comparative Study of the Structural and Functional Properties of Flaxseed (*Linum usitatissimum*) Albumin and Globulin Fractions.** I.D. Nwachukwu$^{1,2}$ and R.E. Aluko$^{1,2}$, $^1$Dept. of Human Nutritional Sciences, University of Manitoba, Canada, $^2$Richardson Centre for Functional Foods & Nutraceuticals, University of Manitoba, Canada.

**Effect of Composition and Packaging Conditions Over Soymilk Powder Oxidation Development.** S. Hernalsteens, X. Li, X. Yang, Z. Zhe, and G. Chang, Wilmar (Shanghai) Biotechnology Research & Development Center Co., Ltd., China.

**In vitro Antioxidant Properties of African Giant Land Snail (*Archachatina marginata*) Protein Hydrolysates and Membrane Ultrafiltration Peptide Fractions.** A.T. Girgih$^{1,2}$, I.D. Nwachukwu$^{2}$, M.I. Iwar$^{1,2}$, T.N. Fagbemi$^{1,3}$, and R.E. Aluko$^{1}$, $^1$University of Manitoba, Canada, $^2$University of Agriculture, Nigeria, $^3$Federal University of Technology, Nigeria.

**Flaxseed Orbitides as FRET Sensor.** P.D. Jadhav$^1$, J. Shen$^1$, R. Sammynaiken$^2$, and M.J.T. Reaney$^{1,3}$, $^1$Dept. of Plant Sciences, University of Saskatchewan, Canada, $^2$Saskatchewan Structural Sciences Centre, University of Saskatchewan, Canada, $^3$Prairie Tide Chemicals Inc., Canada.

**Production of Microbial Protein Concentrate and 1,3-Propanediol by Wheat Thin Stillage Fermentation.** K. Ratanapariyanuch$^1$, Y.Y. Shim$^2$, S. Emami$^2$, and M.J.T. Reaney$^{2,3}$, $^1$Dept. of Food & Bioproduct Sciences, University of Saskatchewan, Canada, $^2$Dept. of Plant Sciences, University of Saskatchewan, Canada, $^3$Guangdong Saskatchewan Oilseed (GUSTO) Joint Lab., Dept. of Food Science & Engineering, Jinan University, China.
Tuesday Afternoon

PCP 3: Protein Interactions in Food Systems
Chairs: N.S. Hettiarachchy, University of Arkansas, USA; R.E. Aluko, University of Manitoba, Canada; and J.P.D. Wanasundara, Agriculture & Agri-Food Canada, Canada

Lipid Co-oxidation of Proteins: One Mechanism Does Not Fit All Foods. K.M. Schaich, Rutgers University, USA.

Plant Protein-polysaccharide Complexes for Improved Functionality in Food Systems. L. Chen, M. Japan, C. Yang, and Z. Tian, University of Alberta, Canada.

Maillard-induced Glycation of Whey Protein: Effect on Molecular Configuration, Solubility, and Thermal Stability. B. Ismail, University of Minnesota, USA.

Formation, Stability, and Application of Pulse Protein-stabilized Nanoemulsions. S. Ghosh, M. Yerramilli, A. Duchek, M. Primozic, and M. Nickerson, University of Saskatchewan, Canada.

Effects of Isoelectric Point (pI) and Hydrophobicity of Peptides in Emulsion System. E.Y. Park1,2, H. Miya2, Y. Nakamura2, K. Matsumiya2, Y. Matsumura2, and K. Sato3, 1Dept. of Food Science & Technology, Korea Christian University, Republic of Korea, 2Dept. of Food Sciences & Nutritional Health, Kyoto Prefectural University, Japan, 3Div. of Agriculture & Horticultural Science, Kyoto University, Japan.

Metal-binding to Linusorb Orbitides. Y. Zuo1,2, Y.Y. Shim2,3, P.D. Jadhav4, J. Shen2, N. Zhang1, Y. Wang1, and M.J.T. Reaney2,3, 1Guangdong Saskatchewan Oilseed (GUSTO) Joint Lab., Dept. of Food Science & Engineering, Jinan University, China, 2Dept. of Plant Sciences, University of Saskatchewan, Canada, 3Prairie Tide Chemicals Inc., Canada.

Wednesday Morning

PCP 4: Bioactive Proteins and Peptides: Advanced Functionalities
Chairs: H.R. Ibrahim, Kagoshima University, Japan; and H. Kumagai, Nihon University, Japan

Bioactivities of Gelatin Hydrolysates Derived from Skin of Two Fish Species. S. Kranjanarpumat2, T. Sae-leaw2, Y.C. O’Callaghan1, S. Benjakul2, and N.M. O’Brien*1, 1School of Food & Nutritional Sciences, University College Cork, Ireland, 2Dept. of Food Technology, Prince of Songkla University, Thailand.

Effects of β-conglycinin on Blood Pressure and Lipid Metabolism in the Spontaneously Hypertensive Rat (SHR). K. Koba1, K. Kawabeta1, T. Noda1, N. Tateiwa1, S. Tamaru1,2, and M. Sugano3, 1University of Nagasaki, Siebold, Japan, 2Fukuoka Inst. of Technology, Japan, 3Kyushu University, Japan.

Design of Oligo-peptides for Intestinal Absorption Model. T. Matsui, Kyushu University, Japan.

Insight into Therapeutic Applications of Eggshell Membranes. T. Ahmed, C. Cordeiro, and M.T. Hincke*, University of Ottawa, Canada.
Exhaustive Analysis of a Novel Bile Acid Binding Peptide Derived from Soybean Protein and Efficient Modification of Soystatin by Peptide Array. S. Nagaoka, Gifu University, Japan.

Peptides Derived from Rice Proteins Stimulate GLP-1 Secretion and Suppress Blood Glucose Elevation. H. Hara¹, Y. Ishikawa¹, M. Kadowaki², and T. Hira¹, ¹Hokkaido University, Japan, ²Niigata University, Japan.


Structure and Content of Food-derived Soy Peptides in Rat and Human Bloods. K. Sato¹² and E.Y. Park², ¹Kyoto University, Japan, ²Kyoto Prefectural University, Japan.

Suppression of Blood-ethanol Elevation by Compounds Produced from Dipeptide and Amino Acid in Shiitake Mushrooms. H. Kumagai, S. Hironaka, and M. Akao, Dept. of Chemistry & Life Science, Nihon University, Japan.

Deamidated Gliadin Induces Oral Tolerance and Prevents Cutaneous Sensitization to HCl-treated Wheat Protein. N. Matsukaze¹, R. Abe¹, M. Akao¹, H. Kumagai², and H. Kumagai¹, ¹Dept. of Chemistry of Life Science, Nihon University, Japan, ²Dept. of Food Science & Nutrition, Kyoritsu Women’s University, Japan.

Wednesday Afternoon

PCP 5: Protein Processing and Involved Technologies
This session is sponsored in part by DuPont Nutrition & Health.
Chairs: C.C. Udenigwe, Dalhousie University, Canada; and N.P. Bandara, University of Alberta, Canada

Superior Functionality of Hemp Seed Protein Isolate Achieved Through Defatted Meal Carbohydrate Digestion Coupled with Membrane Ultrafiltration Processing. R.E. Aluko, University of Manitoba, Canada.

Influence of Peptide Molecular Weight Distribution on Their Encapsulation in Liposomes. A. Mohan and C.C. Udenigwe, Dalhousie University, Canada.

Isolation and Identification of Protein Associated with Flaxseed Gum (Linum usitatissimum L.) and Its Contribution to Emulsification Properties. J. Liu¹, Y.Y. Shim³, A.G. Poth², and M.J.T. Reaney²⁴, ¹Dept. of Food & Bioproduct Sciences, University of Saskatchewan, Canada, ²Dept. of Plant Sciences, University of Saskatchewan, Canada, ³Div. of Chemistry & Structural Biology, Inst. for Molecular Bioscience, University of Queensland, Australia, ⁴Guangdong Saskatchewan Oilseed Joint Lab., Dept. of Food Science & Engineering, Jinan University, China.


Amino Acid Profiles of 44 Soybean Lines and ACE-I Inhibitory Activities of Peptide Fractions from Selected Lines. N.S. Hettiarachchy, S. Rayaprolu, R. Horax, E. Satchithanandam, P. Chen, and A. Mauromoustakos, University of Arkansas, USA.
Efficiency of Viscozyme and Cellulase in the Extraction of Proteins from Oat Brans. A. Tsopmo, O. Shituu, and R. Esfandi, Food Science & Nutrition, Carleton University, Canada.

PCP-P: Protein and Co-Products Poster Session

Chairs: M.P. Hojilla-Evangelista, USDA, ARS, NCAUR, USA; and P.X. Qi, USDA, ARS, ERRC, USA

Dedicated Poster Viewing
Tuesday, May 3, 5:30–6:30 pm
Authors will be present at their posters during this time.

Profiling of Polypeptides Extracted from Water and Alkali Soluble Cottonseed Preparations. Z. He\textsuperscript{1} and D. Zhang\textsuperscript{2}, \textsuperscript{1}USDA, ARS, SRRC, USA, \textsuperscript{2}USDA, ARS, AAHRU, USA.

Ultra-structural Features of Oil and Protein Bodies of Canola and Camelina. S.P Perera\textsuperscript{1,2}, R.T. Tyler\textsuperscript{2}, D. Hegedus\textsuperscript{1,2}, and J.P.D. Wanasinghe\textsuperscript{1,2}, \textsuperscript{1}Saskatoon Research Centre, Agriculture & Agri-Food Canada, Canada, \textsuperscript{2}Dept. of Food & Bioproduct Sciences, University of Saskatchewan, Canada.

Bioinformatics and Peptidomics of Potato Protein Hydrolysates for Bioactivities. S.R.C.K. Rajendran\textsuperscript{1}, C.C. Udenigwe\textsuperscript{1}, and B. Mason\textsuperscript{2}, \textsuperscript{1}Dept. of Environmental Sciences, Dalhousie University, Canada, \textsuperscript{2}Verschuren Centre for Sustainability in Energy & the Environment, Cape Breton University, Canada.

Evaluating the Effect of Processing Conditions on the Functionality of Whey Protein Hydrolysate During Enzymatic Hydrolysis. A. Mohan and C.C. Udenigwe, Dalhousie University, Canada.


Protein Derived Biodegradable Food Packaging Material from Poultry By-product. M. Zubair, J. Wu, and A. Ullah, University of Alberta, Canada.


