Mine Yoshinori **NSERC PIN: 195599**

Most Significant Contributions in the Past 10 Years (2013-2023). Up dated February 20, 2024

1. **Research Contextual Statement**.

My group is exploring novel approaches to cure chronic oxidative stress and inflammation using dietary peptides, amino acids and pro-/prebiotics as well as understanding mechanism of actions of food factors-gene interactions. Recently, my group has demonstrated a new proof of concept of long-term low grade chronic inflammation and potential risk of metabolic disorders. This impacts to microbiota and signaling molecules.

1.1. Novel anti-oxidative stress egg yolk phosphopeptides.

We have found egg yolk phosvitin-derived phosphopeptides reduce pro-inflammatory interleukin-8 secretion, lower lipid peroxidation byproducts and increase superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione S-transferase (GST), glutathione reductase (GR), and the glutathione (GSH) precursor gamma-glutamyl cysteine synthetase (γ-GCS) in vitro and in vivo models. In this study, we identified least two consecutive phosphoserine residues (PP-2) are necessary for the modulation of cellular oxidative stress. The effect of PP-2 on the gene expression profile was measured with PCR-array analysis and gene ontology (GO) analysis was used to determine the biological roles and molecular functions. In conclusion, PP-2 can reduce intestinal oxidative stress via the activation of Nrf2-ARE (nuclear factor- E2-related factor 2 – antioxidant response element) signaling pathway. We have demonstrated that egg yolk peptides (EYP) with anti-oxidative stress properties were capable of improving gut health and mitigating the onset of the chronic disease.

1.2. Non-nutritional biological activities of amino acids to improve chronic gut inflammation.

We have discovered that L-tryptophan and L-cysteine exhibit therapeutic functions in a porcine model of dextran sodium sulfate (DSS)-induced colitis. The L-cysteine and L-tryptophan were both examined for ability to reduce colitis symptoms and modulate local gene expression and we found that both amino acids reduced inflammation and enhanced the rate of recovery of DSS-induced colitis in pigs. Our outcomes offer a novel therapeutic approach for the treatment of chronic inflammatory disorders via dietary amino acid supplements.

1.3. Impact of soy derived di-/tri peptides in chronic inflammation.

We recently demonstrated that a soy-derived hydrolysate, enriched in di- and tripeptides, exerted anti-inflammatory activity in vivo in a porcine model of dextran sodium sulfate (DSS)-induced inflammation. The orally administered soy peptides prevented DSS-induced changes in gut permeability and histology, and reduced myeloperoxidase (MPO) activity and the expression of inflammatory cytokines tumor necrosis factor (TNF)-α, interleukin (IL)-6, interferon (IFN)-γ, IL-1β, and IL-17A in the colon. VPY was identified as a novel PepT1 substrate that can inhibit the production of pro-inflammatory mediators in vitro in intestinal epithelial and immune cells, and reduce the severity of colitis in mice by down-regulating the expression of pro-inflammatory cytokines in the colon, suggesting that VPY may be promising for the treatment of IBD.

1.4. Role of the extracellular calcium-sensing receptor in chronic inflammation. The extracellular calcium-sensing receptor

Calcium sensing receptor (CaSR) is the first identified G protein-coupled receptor. Previously, -glutamyl cysteine (g-EC) and -glutamyl valine (g-EV) (γ-EC and γ-EV) were identified as novel positive allosteric modulator of CaSR through the allosteric binding. We also demonstrated that activation of CaSR by g-EC or g-EV could suppress TNF-α-induced inflammatory responses in

intestinal epithelial cells (IECs), and reduced intestinal inflammation in a mouse model of colitis. The CaSR-mediated anti-inflammatory effects of the peptides were abrogated in β-arrestin2 knockout IECs, and involvement of β-arrestin2 was found to inhibit the TNF-α-dependent pro-inflammatory signaling cascade via cross-talk with the TNF-α receptor (TNFR). Further detailed analysis using gene ontology (GO) analysis clarified the role of CaSR plays as a therapeutic target for chronic inflammation. Our research strongly suggests the CaSR must play a central role in many complex disease conditions such as hypertension, cancer, diabetes, atherosclerosis and kidney disorders.

1.5.Peptide-based immunotherapy of egg allergy. Peptide-based immunotherapy (PIT) represents an attractive approach for targeted interventions in immunological disorders, but has not been widely explored in the context of food allergy. We have successfully induced tolerance in egg allergic mouse via PIT. The mechanistic pathways entailing pivotal molecules TGF-β and FOXp3 were highlighted as promising trails for the understanding of immunotherapeutic approaches for food allergy. This outcome was featured by CTV and in various news and journal articles.

1**.6. Oral immunotherapy with immunodominant T-cell epitope peptides alleviates allergic reactions in a Balb/c mouse model of egg allergy**. Allergen-specific T cell epitopes are obvious targets for immunotherapeutic interventions in allergic disease. T cell epitope peptides given orally may provide a practical way of inducing tolerance and preventing allergy. We investigated oral immunotherapy (OIT) with T-cell epitope peptides of the dominant egg-white allergen Ovomucoid (Ovm) in a Balb/c mouse model of egg allergy and demonstrated that OIT with peptides comprising the immunodominant regions of Ovm was safe and significantly reduced subsequent frequency of allergy to Ovm and validates potential use of Ovm T-cell epitope as an immunoregulator.

1. Books. <u>Life-time publications in total 6.</u>

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2. Chapters in Books: <u>Life-time publications in total 55</u>.

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Zhang, H., **Mine, Y**. (2019). Antiviral properties of egg components. In Eggs as Functional Foods and Nutraceuticals for Human Health, (Eds) JL Slavin, ML Fernandez, G Handelman, C Richard, N Burd, J Wu, Royal Society of Chemistry, London, pp 198-210.

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3. Review Articles. <u>Life-time publications in total 27</u>

R De Villa, J Roasa, **Y Mine**, R Tsao (2023). Impact of solid-state fermentation on factors and mechanisms influencing the bioactive compounds of grains and processing by-products. *Critical Reviews in Food Science and Nutrition* **63** (21), 5388-5413.

Y Meng, N Qiu, V Guyonnet, **Y Mine** (2022). Unveiling and application of the chicken egg proteome: an overview on a two-decade achievement. *Food Chemistry* **393**, 133403.

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4. Papers in Peer Reviewed Journals. <u>Life-time publications in total 181 (date of 2024.02.20)</u>

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5. Refereed Conference Proceedings. Life Time: 11

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6. Non-Refereed Contributions. Life time: 13

D. Lackeyram , C. Kim., D. Young, T. Archbold, C. Yang, Y. Mine and M. Fan. (2008). Induction of experimental colitis by dextran sulphate sodium in a piglet model of irritable bowel syndrome. *The FASEB Journal* (abstract)

C. Yang, D. Lackeyram, T. Archbold, Y. Mine, and M. Z. Fan (2008). Expression of jejunal apical excitatoryamino acid carrier 1 (EAAC1) is maintained in piglets with bowel inflammation. *The FASEB Journal* (abstract).

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Lim, L-T, Mine, Y., Montoya, K. and Tung, M.A. (1999). Mechanical and oxygen barrier properties of transglutaminase cross-linked egg white protein films. In *Egg Nutrition and Biotechnology.* Sim, J. Nakai, S. and Guenter, W. (eds) CAB International, Oxon, UK pp. 253-267.

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7. Conference Presentations (Life time). 147

(2023)

Mine, Y. Food-derived bioactive peptides-past, today and future perspective. International Conference on Nutraceuticals and Functional Foods (ISNFF), Honolulu, Hawaii, USA, December 10-13, 2023. **(Invited speaker)**

Mine, Y. A proof of novel concept of peptide based receptor-mediated nutritional biochemistry Int. Symposium on Health Attributes of Bioactive Peptides and Phytochemicals, Guelph, Canada, September 26, 2023. (**Invited speaker**)

Mine, Y. A 29-year journey through food bioactive peptide research in Canada. 3rd Bioactive Peptide Symposium, September 27-29, 2023. Niagara Falls, Canada (**Invited keynote speaker**).

(2019)

Mine, Y. Impact of calcium-sensing receptor toward to gut health and metabolic disorders: conception. and bioactive food factors. ICOFF, December 1-4, 2019. Kobe, Japan (**Invited keynote speaker).**

Mine, Y. *JAFC*-your gateway to a global science community.73th Japan Food and Nutrition Conference, Shizuoka, Japan. May 17-19, 2019 (**Invited speaker**).

(2018)

Mine, Y. New concept of food derived bioactive peptides toward improving gastrointestinal chronic inflammation. International Symposium for Cross-sectional Study of Life Science and Food Science, Fuzou, China. October 12-14, 2018. (**Invited speaker**).

Mine, Y. Extracellular calcium-sensing receptor (CaSR) as a new molecular target improving gastrointestinal chronic inflammation. 25th International Conference of Functional Food Center, Osaka, Japan. October 27-28, 2018. (**Invited speaker**).

Xing, L., Zhang, H., Mujumder, K., and Mine, Y. γ-glutamylvaline (EV) can prevent the low-grade chronic inflammation via the activation of CaSR pathway using a mouse 3T3-L1 cell model. 25th International Conference of Functional Food Center, Osaka, Japan. October 27-28, 2018.

Mine, Y. Bio-functional egg peptides. International Egg Symposium in Kyoto 2018. Kyoto, Japan, October 16-17, 2018 (**Invited speaker**).

Lechevalier V,Guérin-Dubiard C, Pasco M, Gillard A, Le Gouar Y, Musikaphun N, Tanguy G, Tranquet O, Denery-Papini S, Beaumal V, David-Briand E, Rancé F, Juchet A, Drouet M, Paty E, Legoué-Morillon S, Anton M, Dupont D, Mine Y, Brossard C, Nau F. Heat treatments applied to egg product have a rather low impact on in vivo allergenicity, despite significant changes in protein digestibility and antigenicity. International Egg Symposium in Kyoto 2018. Kyoto, Japan, October 16-17, 2018

Mine, Y. New molecular target, calcium-sensing receptor (CaSR) toward to improving gastrointestinal health. Functional foods Symposium, Boston, United States of America. August 18-22, 2018. **(Invited speaker).**

(2017)

Lechevalier, V., Guerin-Dubiard, C., Pasco, M., Gillard, A., Mine, Y., et al. Technological advances in egg product processing with reference to allergenicity. Egg Meat symposium 2017, Glasgow, United Kingdom. September 3-5, 2017.

Mine, Y. Role of dietary factors in low-grade chronic inflammation and gut health. Food Summit 2017, Wuxi, China. November 8-9, 2017**. (Invited Speaker).**

(2015)

Mine, Y. Poly-L-lysine can modulate intestinal mucosal inflammation via. calcium-sensing receptor activation. International Conference on Nutraceuticals and Functional Foods (ISNFF), Wuxi, China. September 20-23, 2015. (**Invited speaker**)

Mine, Y. Immunomodulation of monosaccharide conjugated ovalbumin with a tolerogenic phenotype To prevent allergic response in mice. Pacifichem 2015, Honolulu, United States of America., December 15-20, 2015. (**Invited speaker**).

Mine, Y. From a sweetener to fighting gut inflammation. Pacifichem 2015, Honolulu, United States of America. December 15-20, 2015. **(Invited speaker).**

Chee, M. and Mine Y. Amelioration of LPS-induced sepsis by γ-glutamylvaline dipeptide in Balb/c mouse. ICoFF2015, Seoul, Korea. November 22-25, 2015.

Mine, Y. An alternative approach to antibiotics and improve gut health in animal production by beta 1-4 mannobiose. 1st International Symposium of Gut Microbial Ecology and Health in Animal, Changsha, China. November 14-15, 2015 **(Invited speaker).**

(2014)

Mine, Y. Uptake of exogenous glutathione across the intestinal epithelium, and its impact on human health. International Conference on Nutraceuticals and Functional Foods (ISNFF), Istanbul, Turkey. October 14-17, 2014. **(Invited speaker**)

Mine, Y. Bioactive egg components for human health. 2nd International Symposium of Egg Science and Technology, Wuhan, China. October 16-18, 2014. **(Invited speaker**)

Mine, Y. The future Trends of global functional food innovation, nutrition and technology. Sapporo Science Forum, Sapporo, Japan. December 15, 2014 **(Invited speaker**).

Mine, Y., Kovacs-Nolan, J., Matsui, T., Tanaka, T., Konishi, T., and Sauchi, Y. Transport of intact glutathione across human intestinal epithelial cell monolayers using Caco-2 and HT-29 models. 248th ACS National Meeting & Exposition, San Francisco, California. August 10-14, 2014. **(Invited speaker)**

Mine, Y. Food protein-derived bioactive peptides and chronic inflammation. Peptide Forum, Osaka, Japan. February 7, 2014. **(Invited speaker)**

Shi, Y., Kovacs-Nolan, J., Jiang, B., Tsao, R., and Mine, Y. Protective effect of Anti-oxidative Stress Peptides derived from Eggshell Membrane against H_2O_2-Induced Oxidative Damage in Human Intestinal Caco-2 Cells. 17th World Congress of Food Science & Technology, Montreal, Canada-Quebec. August 17-21, 2014.

(2013)

Mine, Y. Advanced global egg science and technology today. International Symposium on Egg Science & Technology, Wuhan, Hubei, China. November 1-4, 2013. (**Invited speaker and Organizing Committee and Session Chair)**.

Mine, Y. Gamma-glutamyl di-peptides and chronic Inflammation. 13th International Congress on Amino Acids, Peptides and Proteins (ICAPP), Galveston, Texas. October, 5-7.2013.

Mine, Y. How to publish your work in high impact Journal. Japan Food and Nutrition Conference, Educational Seminar, Sendai, Japan. May, 24-26, 2013. **(Invited speaker).**

(2012)

Jiménez Saiz, R. Rupa, P., and Mine Y. (2012). Immunomodulatory effect of heated ovomucoid depleted egg white in a BALB/c mouse of egg allergy. American Chemical Society National Meeting, March 25-29, San Diego, CA, USA.

Mine, Y. (2012). Impact of amino acids and proteins in inflammatory bowel disease. Japanese Food and Nutrition annual meeting, May 18-20, Sendai, Japan (**Invited speaker**).

Rupa, P., and Mine Y. (2012). Effect of glycoconjugates of ovalbumin on allerviation of orally induced egg allergy in a BALB/c mouse model. European Academy of Allergy and Clinical Immunology Congress, June 16-20, Geneva, Switzerland.

Lackeyram, D., Y. Mine, T. Archbold, and M. Fan. (2012). The in vivo infusion of hydrogen peroxide (H2O2) induces oxidative stress in piglets and differentially affects the activities of small intestinal carbohydrate digesting enzymes in pigs. XII International Symposium on Digestive Physiology of Pigs (DPP). May 29-June 1, Keystone, Colorado, USA.

Fan, M.,T. Archbold, D. Lackeyram, Q. Liu, Y. Mine, and G. Paliyath. (2012). Consumption of guar gum and retrograded resistant cornstarch increases interleukin-10 abundance without affecting pro-inflammatory cytokines in the colon of pigs fed a high-fat diet. XII International Symposium on Digestive Physiology of Pigs (DPP) May 29-June1. Keystone, Colorado, USA.

Lackeyram, D., Y. Mine, T. Archbold, and M. Fan. (2012). The small intestinal apical hydrolase activities are decreased in the piglet with bowel inflammation induced by dextran sodium sulfate. XII International Symposium on Digestive Physiology of Pigs (DPP) May 29-June 1, Keystone, Colorado, USA

(2011)

Mine, Y. (2011). Canadian Portal to Excellence in Innovative Food Science and Technology. Food Summit, November 14, Ebetsu, Japan (Invited speaker).

Mine, Y. (2011). Allosteric modulation of the calcium sensing receptor (CasR) by g-glutamyl peptides. Int. Conference on Nutraceuticals and Functional Foods, November 14-17, Sapporo, Japan. (**Session organizer and invited speaker**).

Zhang, H. and Mine, Y. (2011). Anti-inflammatory effect of poly-L-lysine in human intestinal epithelial cells mediated by calcium-sensing receptor activation. International Conference on Protein and Amino Acid Nutrition and Metabolism, August 1-5. Beijing, China

Yang, C., D. Lackeyram, Mine Y., T. Archbold, and M.Z. Fan. (2011). Abundances of intestinal apical neutral amino acid transporter B0AT1 and exchanger ASCT2 proteins are reduced in pigs with dextran sodium sulfate-induced colitis. International Conference on Protein and Amino Acid Nutrition and Metabolism, August 1-5. Beijing, China.

Rupa, P., and Mine, Y. (2011). Oral immunotherapy with an immunodominant T-cell epitope alleviates allergic reactions in a Balb/c mouse model of egg allergy. 15th International Congress of Mucosal Immunology, July 5-9, Paris, France.

Mine Y. (2011). Dietary Soy Peptide-based Interventions to Prevent Chronic Inflammation and Cellular Mechanism. Korean Food Science and Technology International Symposium, June 7-10, Daegu, Korea. (**Invited Speaker**).

Cordeiro, C.M.M., Rose, M., Kovacs-Nolan, J**.**, Mine, Y., Young, D. and Hincke, M.T. (2011). Ovocalyxin-36 is a candidate LBP-like eggshell membrane protein. Biochemical Society Advancing Molecular Bioscience, January 2011, Nottingham, U.K.

Jiménez Saiz, R. and Mine Y. (2011). Oral immunotherapy by heated ovomucoid-reduced egg white in a Balb/c mouse model. 1st EAACI Food Allergy and Anaphylaxis Meeting, FAAM 2011, which will take place in Venice, Italy, 17-19 February.

(2010)

Mine, Y. (2010). A novel strategy for controlling intestinal oxidative stress signaling pathways by phosvitin phosphopeptides. ACS Pacifichem 2010 Congress, December 15-20, Honolulu, Hawaii, USA. (**Invited speaker**).

Mine, Y. (2010). Identification of anti-inflammatory soy-derived tri-peptides that are transportable across the intestinal epithelium. Int. Nutraceutical, and Functional Foods Symposium, October 11-15, Bali, Indonesia. (**Invited speaker**).

Zhang, H. and Mine, Y. (2010). Anti-inflammatory effect of allosteric peptide agonists of calcium sensing receptor in human intestinal cells5th International Peptide Symposium, December 4-9, Kyoto. Japan.

Mine, Y. and Kovacs-Nolan, J. (2010). Glycopeptides derived from egg protein digests can prevent food-borne pathogenic bacterial infection. XIIIth European Poultry Conference, Tours, France. August 23-27, 2010

Mine, Y. (2010). Anti-inflammatory activities of soy di- or tri peptides in dextran sodium sulfate induced colitis in piglets. PepCon-2010 March 21-23, 2010, Beijing, China. (**Invited and Session Chair**)

(2009)

Mine, Y., Kovacs-Nolan, J., Ibuki, M. and Fuki, K. (2009). Dietary *β,1.4*-mannobiose can modulate mucosal defense immunity to prevent *Salmonella spp* colonization in chickens- DNA microarray analysis-. 2nd Mediterranean Summit of WPSA, Antalya, Turkey, October, 4-7, 2009.

Kovacs-Nolan, J. and Mine, Y. (2009). Therapeutic effects of exogenous lysozyme in a porcine model of experimental colitis. 5th Pacific Rim Food Protein Symposium, August 20-22, 2009, Vancouver, Canada.

Mine, Y. (2009). Egg allergy-Advances in the development of specific Immunotherapy. 5th Pacific Rim Food Protein Symposium, August 20-22, 2009, Vancouver, Canada **(Symposium Organizer**).

Kovacs-Nolan, J. Lee, M., Yang, Y., Archbold, T., Fan, M.Z., Mine, Y. (2009). Therapeutic effects of exogenous lysozyme in a porcine model of experimental colitis. 2009 International Congress on Mucosal Immunology, July 5-9, Boston, USA.

Kim, C.J., Kovacs-Nolan, J., Yang, Y., Archbold, T., Fan, M.Z., and Mine, Y. (2009). L-tryptophan as a novel therapeutic agent for chronic gut inflammation. 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.

Mine, Y. (2009). Modulation of mucosal cytokine-mediated signaling pathways by dietary peptides; Impact in health promotion. 237th ACS National Meeting Symposium on Bio-peptides and Specialty Proteins in Health Promotion and Disease Risk Reduction. March 22-26, 2009, Salt Lake City, Utah, USA

Mine, Y and Yang, M. Egg allergy; Advances in the development of specific immunotherapy. 100th AOCS Annual Meeting. Symposium on Protein Allergenicity and Regulatory Update on Phospholipids. May 3-6, Orlando, FL, USA. (**Invited speaker**).

(2008)

Kim, C., Kovacs-Nolan, J., Yang, C., Archbold, T., Fan, M.Z., Hayers, M.A., and Mine, Y. (2008). L-Cysteine reduces local gut inflammation and restores homeostasis in a dextran sodium sulphate induced porcine model of colitis. . Int. Conference on Nutraceuticals and Functional Foods. November 14-17, Taichung, Taiwan

Mine, Y. (2008). Small peptides based interventions in chronic gut inflammation and its cellular mechanism. Int. Conference on Nutraceuticals and Functional Foods. November 14-17, Taichung, Taiwan (**Invited speaker**).

Lee, M., Yang, C., Kim, C., Fan, M.Z., and Mine, Y. (2008). Oral administration of hen egg white lysozyme reduces dextran sodium sukphate induced colitis in piglets. 14th Wotld Congress of Food Science & Technology, October 19-23, Shanghai, China.

Lee, M., Yang, C., Kim, C., Juneja, L.R., Sassaki, K., Fan, M.Z., and Mine, Y. (2008). Anti-inflammatory effects of egg white peptides in inflammatory bowel disease in a piglet model. 14th Wotld Congress of Food Science & Technology, October 19-23, Shanghai, China.

Mine, Y. (2008). A proteomic approach to identify early molecular targets of DSS-induced colitis in piglet using two-dimentional difference gel electrophoresis. 14th Wotld Congress of Food Science & Technology, October 19-23, Shanghai, China (**Invited speaker and session chair**).

Yang, M., Yang, C. and Mine (2008). Administration of T-cell epitopes synthetic peptides inhibit allergic responses in a Balb/c mouse model of orally induced egg allergy. 3rd International Symposium on Molecular Allergology, April 18-20, Salzburg, Austria.

Yang, M. and Mine, Y. (2008). Fine mapping and structural analysis of ovalbumin B- and T-cell epitopes in Balb/c mpuse-prospect for peptide immunotherapy in food allergy-.3rd International Symposium on Molecular Allergology, April 18-20, Salzburg, Austria.

(2007)

Rupa, P., Nakamura, S., and Mine, Y. (2007). Modulation of IgE production and Th1/Th2 cytokine response in balb/c mice by glycosylated ovomucoid third domain. ICOFF 2007, November 27-December 1, Kyoto, Japan

Y. Mine (2007). Molecular allergology of egg white allergen. ICOFF 2007, November 27-December 1, Kyoto, Japan (**Invited speaker**).

Y. Mine (2007) Recent advances in the value of egg and egg components in human health. XX Congress Latinoamericano de Avicultura, September 26, Prot Alegre, Brazil. (**Invited keynote speaker**).

Y. Mine (2007). IgY farming technology and its application. Egg Forum Japan, Kyoto, September 7 (**Invited keynote speaker**).

Y. Mine (2007). Novel antioxidative stress peptides derived from egg yolk proteins. 2007 IFT Bioactive Proteins and Peptides Symposium, Chicago, July 27-30, USA (**Symposium organizer and speaker**).

Y. Mine, C.Y. Ma and K.H. Sze (2007). Structure functional study of antimicrobial peptide from chicken ovalbumin peptide library. 98th AOCS symposium on Protein Modification and Characterization, Quebec City, QC, Canada, May 13-16 (**Invited speaker and session chair**).

Y. Mine and I. D'Silva (2007) Genetically glycosylated ovomucoid third domain can induce IgE-mediated allergic tolerance in Balb/c mice model. Potential application for specific targeted immunotherapy. 2nd International Symposium on Molecular Allergology, Rome, Italy, April 22-24.

(2006)

S. Katayama and M. Fan and Y. Mine (2006). Phosphopeptides derived from egg yolk phosvitin up regulate γ-glutamiylcysteine synthetase and antioxidant enzymes against oxidative stress in human intestinal epithelial cells. 232nd American Chemical Society National Meeting, September 10-14, 2006, SanFrancisco, USA. (

Y. Mine and P. Rupa (2006) Genetically modified ovomucoid can abrogate IgE induced immediate hypersensitivity in a murine model. ACS symposium on Food Allergens. 232nd American Chemical Society National Meeting, September 10-14, 2006, SanFrancisco, USA. (**Invited speaker**)

S.-I. Ishikawa, S. Katayama, M.Z. Fan and Y. Mine (2006). Enzymatic hydrolysates from whey protein isolate inhibit oxidative stress- induced interleukin-8 production in intestinal epithelial cells. 13th IUFOST, Nantes, France Sept 17-21, 2006

M. Husain , P. Rupa , D. Carter , Y. Mine , G. Kirby , S.P. Golovan (2006). Plant-Based Modulators of Immune Response: Detection of Peanut Induced Allergy Signature in Mice. Annual Meeting of American Society of Plant Biologists (ASPB) in Boston, MA. August 5-9, 2006.

M. Husain, D. Carter, C. Verschoor, Y. Mine, G. Kirby, S. P. Golovan (2006). Allergy Signature in Spleen Transcriptome Produced By Ovomucoid in BALB/c Mice. Annual Meeting of the Canadian Society for Immunology. Halifax, Canada June 9-12, 2006

M. Husain, D. Carter, C. Verschoor, Y. Mine, G. Kirby, S. P. Golovan (2006). Development of Transcriptome And Proteome Based Biomarkers for The Detection of Potential Allergens In Novel Foods. Plant and Animal Genome XIV Conference, San Diego, California. January 14-18, 2006.

Y. Mine (2006) Mouse model for egg allergy-ovomucoid. Minisymposium: FOOD ALLERGY AND SAFETY ASSESSMENT OF NOVEL FOODS. Aug 28, 2006. University of Guelph, Guelph, Ontario.

Y. Mine and P. Rupa (2006). Molecular allergology of egg white ovomucoid. 3rd Int. Food Protein Symposium, Yamagichi, August 18-19, Japan (**Invited Speaker**).

Y, Mine (2006). Anti-tissue oxidative stress peptides derived form egg yolk proteins. 97th AOCS Bioactive peptides symposium. St. Loius, MI, May 1-3, USA (**Invited Speaker-selected the best speaker in Protein and Protein Products session**).

Y. Mine and P. Rupa (2006). Engineered egg white ovomucoid to modulate IgE-mediated allergic response and potential application for targeted immunotherapy. 1st Int. Symposium on Molecular Allergology, Rome, Italy, March 31-April 1.

(2005)

Katayama, S., Xu, X., Fan, M.Z., Silphaduang, U. and Mine, Y (2005) Anti-oxidative stress activity of oligophosphopeptides derived from hen egg yolk phosvitin in Caco-2 cells. ACS Pacificchem 2005, Honolulu, Hawaii, December 15-20, USA.

Mine, Y. (2005) Modulation of IgE reactivity by engineered recombinant ovomucoid and potential use for immunotherapy. ACS Pacificchem 2005, Honolulu, Hawaii, December 15-20, USA.

Xu, X., Silphaduang, U. and Mine, Y. (2005). Identification of immunomodulatory peptides derived from peptic digests of bovine glycomacropeptides. ACS Pacificchem 2005, Honolulu, Hawaii, December 15-20, USA.

Katayama, S. and Mine, Y. (2005) *Quillaja* saponin can modulate ovalbumin-induced IgE reactivity through Th1/Th2 associated cytokines regulation. ACS Pacificchem 2005, Honolulu, Hawaii, December 15-20, USA.

Boonkong, S., Silphaduang, U. and Mine, Y. (2005). Anti-oxidant activity of a fermented soy product and an isolation of a Mn-superoxide dismutase A. ACS Pacificchem 2005, Honolulu, Hawaii, December 15-20, USA.

Mine, Y. (2005). Recent advances in Japanese functional foods and nutraceuticals. 6th Int. Conference on Food Sci and Tech., November 7-9, Guangzhou, China. (**Invited Speaker**).

M. Husain, P. Rupa, D. Carter, C. Verschoor, Y. Mine, G. Kirby, S. P. Golovan (2005). Detection Of Potential Allergens In GM Foods Using Microarray. Omics: New growth and opportunities. Conference. Guelph, Ontario, Canada. October 12, 2005.

Mine, Y. (2005) Functional peptides from eggs. 2005 IFT Egg Nutraceutical Symposium-Cracking the Secret of egg. July 16-20, 2005 New Orleans, LA, USA. (**Invited speaker**).

Mine, Y (2005) Egg Proteins as a rich source of bio-active peptides. 96th AOCS Annual Meeting & Expo, Salt Lake City, Utah, USA, May1-4, 2005. (**Invited speaker**)

Mine, Y. (2005) Bioactive peptides from egg proteins. XI European Symposium on the Quality of Eggs and Egg Products, 23-26 May 2005, Doorwerth, The Netherlands. (**Invited speaker**).

Lackeyram D., Pham D., Mine Y., Bakovic M., Rideout T., Nichols B.L. and M.Z. Fan. (2005) Early weaning increases the small intestinal digestive capacity for sucrose in the piglet. Swine in Biomedical Research Conference, January, 2005, Chicago, IL.

Lackeyram D., Pham D., Mine Y., Bakovic M., Yada R., Nichols B.L. and M.Z. Fan. (2005) Early weaning decreases the small intestinal lactase digestive capacity in the piglet-A poster to be presented by Lackeyram D. at the annual American Experimental Biology meeting, April, 2005, San Diego, CA.

Lackeyram D., Pham D., Mine Y., Bakovic M., Yada R., Nichols B.L. and M.Z. Fan. (2005) Early weaning up-regulates the capacity of the small intestinal maltase-glucoamylase hydrolysis of amylose in the pig- at the annual American Experimental Biology meeting in San Diego, CA.

(2004)

Wong, K-M, Mine, Y. and Miyashita, K. (2004). Cytotoxic and apoptotic effects of proteins isolated from bitter melon (*Momordica charantia*). CIFST/AAFC joint conference, May 16-19, 2004. Guelph, ON.

Rupa, P. and Mine, Y. (2004). Identification of allergenic epitopes in major egg white allergen-ovalbumin. CIFST/AAFC joint conference, May 16-19, 2004. Guelph, ON.

Mine, Y. Uma Silphaduang and Kassaify, Z. (2004). Preventive effect of non-immunized egg yolk powder on Salmonella typhimurium, E. coli O157:H7 and Campylobacter jejuni infections in laying hens. 2004 World Poultry Congress, Istanbul, Turkey, June 8-13, 2004.

Mine, Y., Wong, K-M. and Miyashita, K. Purification and characterization of anti-tumor proteins from bitter melon (*Momordica charantia)* 95 th AOCS annual meeting, Cincinnati, OH, USA, May 9-12, 2004 (**Invited speaker**).

Mine, Y. (2004). Adding value to foods biologically hen eggs 2004 World Poultry Congress, Istanbul, Turkey, June 8-13, 2004 (**Invited Speaker**)

Mine, Y. and Rupa, P. (2004). Genetic attachment of an undecane peptides to ovomuvoid third domain can suppress the production of specific IgG and IgE antibodies. 60th American Academin of Allergy Asthma & Immunology. SanFrancisco, CA, March 19-23, 2004.

(2003)

Mine, Y. (2003). A novel fibrinolytic enzyme in the fermented foods. 5th International Conference on Food Science and Technology, October 22-24, Wuxi, China (**Invited Speaker**).

Mine, Y. (2003). Egg allergy-an emerging issue. X Europen Symposium on the Quality of Eggs and Egg Products. September 23-26, Saint-Brieuc, France (**Invited Speaker**).

Mine, Y. (2003). Recombinant DNA approaches to the study of egg allergens. 225th ACS National Meeting. Symposium on Allergens, March 23-27. New Orleans, LA, USA (**Invited Speaker**).

(2002)

Mine, Y. (2002). Impact of phospholipids-protein interactions in food colloids. 93rd AOCS Annual Meeting & Expo., May 5-8, Montreal, Canada **(Invited Speaker).**

Hua, Y., Cui, S.W., Wang, Q. and Y. Mine (2002). Gelling properties of proteins from different defatted soybean flours. 6th International Hydrocolloids Conference, July 15-19, Guelph, Canada.

Daengprok, W. and Y. Mine (2002). Hen eggshell matrix proteins enhance calcium transport in the human intestinal epithelial cells. 2002 IFT Annual Meeting, June 15-19, Anaheim, USA.

Y. Mine, S. Lauriau and F. Ma (2002). Novel antibacterial peptides derived from hen egg lysozyme. 2002 IFT Annual Meeting, June 15-19, Anaheim, USA.

Y. Mine (2002). Impact of phospholipids-protein interactions in food colloids. 93rd AOCS Annual Meeting & Expo., May 5-8, Montreal, Canada **(Invited Speaker).**

Hua, Y., Cui, S.W., Wang, Q. and Y. Mine (2002). Gelling properties of proteins from different defatted soybean flours. 93rd AOCS Annual Meeting & Expo., May 5-8, Montreal, Canada.

(2001)

Mine, Y**.** and Kovacs-Nolan, J. (2001). Immunotherapeutic potential of antibody technology in enteric infections. Int. Conference and Exhibition on Nutraceuticals and Functional Foods. November 28-December 1, Portland, USA **(Invited Speaker and Session Chair).**

Mine, Y. (2001). Engineering food proteins to reduce their allergenicity. 11th World Congress of Food Science & Technology, April 22-27, Seoul, Korea **(Invited Speaker).**

Mine, Y. and Zhang, J.W. (2001). Surfactant enhances the tight junction permeability of food allergen in human intestinal epithelial cells. 11th World Congress of Food Science & Technology, April 22-27, Seoul, Korea.

(2000)

Mine, Y. and Sasaki, E. (2000). Molecular design of food allergen to reduce its allergenicity-ovomucoid. 2000 International Chemical Congress of Pacific Basin Societies, December 14-19, Honolulu, Hawaii **(Invited Speaker).**

Kovacs-Nolan, J., Sasaki, E., Yoo, D. and Mine, Y. (2000). Recombinant VP8* subunit protein offers new vaccination strategies for the prevention of human rotavirus infection. 2000 International Chemical Congress of Pacific Basin Societies, December 14-19, Honolulu, Hawaii.

Ma, C.Y. and Mine, Y. (2000) Enzymatic crosslinking of an oat globulin by a calcium-independent microbial transglutaminase. In. *2000 IFT Annual Meeting*. June 10-14. Dallas, USA.

Mine, Y. (2000) Recent advances in egg protein functionality in the food system. In World Poultry Congress 2000, August 20-25. Montreal, Canada (**Invited speaker**).

(1999)

Mine, Y. and Zhang, J.W. (1999). Identification and structural analysis of the allergnic epitopes on ovomucoid third domain. In *1st Food Protein Symposium*. August 17-19, Vancourver, BC, Canada (Invited speaker).

Mine, Y. (1999). Impact of phospholipids-protein interaction in egg yolk lipoproteins in oil-in-water emulsions. In *Int. Food System Functionality '99*. July 28-30, Chicago, USA (**Invited speaker**).

Groult, M.and Mine, Y. (1999). Effect of pH and ionic strength on emulsifying properties of granules and plasma of egg yolk. In. *1999 IFT Annual Meeting*. August 24-27, Chicago, USA.

Mine, Y. and Loraux, M.F. (1999). Displacement of cholesterol from egg yolk with phytosterol. In. *1999 IFT Annual Meeting*. August 24-27., Chicago, USA.

Jiang, B. and Mine, Y. (1999). Preparation of functional phosphopeptides from chicken phosvitin. In. *1999 IFT Annual Meeting*. August 24-27., Chicago, USA.

Mine, Y. and Zhang, J.W. (1999). Allergenic reactivity of ovomucoid domains to human serum IgE antibody from egg allergic patients. In *55th American Academy of Allergy Asthma & Immunology*. February 26-March 3, Florida, USA.

(1998)

Mine, Y. and Zhang, J.W. (1998). Comparative study on allergenicity of native and denatured egg white proteins-specificity of IgG and IgE antibodies. In *216th ACS National Meeting*, August 23-27, Boston, USA.

Lim, L.T., Mine, Y., Tung, M.A. (1998). Barrier and tensile properties of transglutaminase cross-linked gelatin films as affected by relative humidity. 1999 IFT annual meeting, June, Atlanta, USA.

Zhang, J.W. and Mine, Y. (1998). Characterization of ovomucoid allergic IgE epitopes using egg allergenic patients' sera. In *216th ACS National Meeting*, August 23-27, Boston, USA.

Yoshimasu, Y.M. and Mine, Y. (1998). Electrophoretic and immunochemical characterization of allergenic proteins in Buckweat. In *216th ACS National Meeting*, August 23-27, Boston, USA.

Mine, Y. (1998) Value-added utilization of hens egg yolk immunoglobulin as nutraceuticals. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada (**Invited speaker**).

Lim, L.T., Montoya, K., Mine, Y., Tung, M.A. (1998). Mechanical and oxygen barrier properties of transglutaminase cross-linked egg white protein films. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada.

Mine, Y. and Bergougnoux, M. (1998). Role of cholesterol in hens egg yolk low-density lipoprotein on its adsorption behaviour in oil-in-water emulsions. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada.

Mine, Y. (1998). Structure-function properties of hens egg yolk low-density lipoprotein. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada.

Mine, Y. (1998). Structure and functional changes of egg white proteins under dry-heating at alkaline pH values. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada.

Mine, Y. and Yoshimasu, M. (1998). Production of hens immunoglobulin against an enzymatic-crosslinked human insulin for immunodiagnosis using a microbial transglutaminase. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada.

Mine, Y. (1998). Purification of hens egg yolk immunoglobulin-A one step procedure using phospholipase C-. In 2nd Int. Egg Symposium on *Egg Nutrition and Newly Emerging Ovo-Biotechnologies,* April 5-8, Banff, Canada.

Mine, Y. and Marie Bergougnoux (1998) Effect of Cholesterol Reduction from Egg Yolk Low-Density Lipoprotein on its Emulsifying Properties International Symposium on Food Emulsions and Foam in March 16-18, 1998 (Seville, Spain).

Mine, Y. Shimizu, M. and Nakashima, T. (1998). Application of Microporous Glass Membrane for the Preparation and Stabilization of Simple and Multiple Emulsions Stabilized with Egg Yolk Phospholipids. *International Symposium on Food Emulsions and Foam* in March 16-18, 1998 (Seville, Spain).

Mine, Y. (1998). Lipid-protein Interaction of hens Egg Yolk LDL at oil-in-water interfaces. *International Symposium on Food Emulsions and Foam* in March 16-18, 1998 (Seville, Spain).

(1997)

Mine, Y. and Bergougnoux, M. (1997) Emulsifying properties of cholesterol-reduced egg yolk low-density lipoprotein. *The 5th Chemical Congress of North America*, Cancun, Mexico, November 11-15 1997.

Mine, Y. (1997) Characterization of macromolecular interaction in egg white protein by laser light scattering.
The 5th Chemical Congress of North America, Cancun, Mexico, November 11-15, 1997 (abstract 2343).

Mine, Y. (1997) Characterization of macromolecular interaction in egg white protein by laser light scattering. *The 5th Chemical Congress of North America*, Cancun, Mexico, November 11-15, 1997 (abstract 2343).

(1996)

Mine, Y. (1996) Application of the enzymatic methods to the determination of contaminated yolk in egg white. *National Meeting, Canadian Institute of Food Science & Technology*, Guelph, August 1996. (Abstract FC-15).

Mine, Y. (1996) ^{31}P-NMR study on adsorption behaviour of caseinate in triacylglycerol in water emulsions. *International Symposium on Food Colloids*. Sweden, April 1996.

(1995)

Mine, Y. (1995) The laser light scattering properties of heat-induced egg white protein gels. *International Chemical Congress of Pacific Basin Societies*, Hawaii, December 1995 (Abstract 358).

Mine, Y. (1995) Effect of pH during the dry heating on the gelling properties of egg white proteins. *National Meeting, Canadian Institute of Food Science & Technology*, Halifax, July 1995. (Abstract 042-FC18).

(1993)

Mine, Y., Chiba, K. and Tada, M. (1993) Structural changes and heat stability of ovalbumin by egg yolk lysophosphatidylcholine. *Japan Society for Bioscience, Biotechnology, and Agrochemistry*, Japan, April 1993. (Abstract, pp 253).

Mine, Y. (1993) Protein-phospholipid interactions. *20th Food Rheology Congress* (**Invited Speaker**), Japan, November 1993 (Abstract, pp 38).

(1992)

Mine, Y., Chiba, K. and Tada, M**. (**1992) ^{31}P NMR study on the interfacial adsorptivity of ovalbumin promoted by lysophosphatidylcholine and free fatty acids. *1st International Symposium on Non-conventional Egg Uses and Newly Emerging Processing Technologies*. Banff, April 1992 (Abstract, pp 30). (**Invited speaker**).

Mine, Y., Chiba, K. and Tada, M. (1992) Dynamic structures of lysophosphatidylcholine-ovalbumin complexes at an oil-in-water emulsion: T1, T2 relaxation study. *Japan Society for Bioscience, Biotechnology, and Agrochemistry*, Japan, April 1992. (Abstract, pp 28).

Mine, Y., Chiba, K. and Tada, M. (1992) NMR study on dynamic structures of lysophosphatidylcholine-ovalbumin complexes at an oil-in-water interface. *1st. International Conference on Food Hydrocolloids* (Invited Speaker). Japan, October 1992 (Abstract, pp 59).

(1986)

Otani, H., Mine, Y., and Hosono, A. (1986) Studies on the antigenic structure of bovine b-casein-region 110-144-. *Jpn. Zootech., Tokyo,* 1986.

Otani, H., Mine, Y. and Hosono, A. (1986) Study on common antigenic determinant between human b-casein and anti-bovine b-casein antibody. *Japan Society for Bioscience, Biotechnology, and Agrochemistry*, Japan, April 2-4 ,Tokyo, 1986.

(1985)

Otani, H., Mine, Y. and Hosono, A. (1985) Study on antigenic determinant bovine b-casein-1-93 regions-. *Japan Society for Bioscience, Biotechnology, and Agrochemistry*, Japan, April 1-3, Kyoto, 1985.

8. Patent

US PCT Patent. Serine Rich Peptides Having Antioxidative Stress Properties, WO/2010/142041.

US PCT Patent (61/213,468). Egg yolk peptides. Mine, Y. J. Kovacs-Nolan and D Young. Filed in June 1, 2010.

US PCT Patent (60/535,805). Prevention and Treatment of Pathogenic Infection in Poultry and Eggs. Mine, Y. Filed on January, 13, 2004.

US PCT Patent (60/535,805). Prevention and Treatment of Pathogenic Infection in Poultry and Eggs. Mine, Y. Filed on January, 13, 2004