

## **Huawei Zeng, Ph.D.**

### **Research Interests:**

Obesity related colon cancer is a significant global health concern and the impact of specific dietary components on colon cancer risk has been well recognized. Dr. Zeng's main area of research is to determine the molecular mechanisms of cancer-preventive nutrients in foods. This focus presently centers on dietary fiber / diet timing and gut microbiome, and the development of new molecular biomarkers for obesity related colon cancer prevention. Currently, Dr. Zeng is studying the impact of dietary components on preventing obesity-related, colonic inflammation and cancer. This research will contribute to the evidence base for the USDA Dietary Guidelines for Americans (DGA) recommendations for colon health through diet and a healthy lifestyle.

Dr. Zeng is also investigating the impact of human genetic variation on optimal nutritional intake. Single nucleotide polymorphisms (SNPs) are a primary component of human genetic variation. To determine the diet that best fits certain SNPs, He examines the effects of hemochromatosis, selenoproteins and vitamin D receptor genotypes on the absorption and utilization of iron, selenium, calcium and other nutrients.

### **Education:**

B.Sc., Biology, Xiamen University, Xiamen, China, 1984

M.Sc., Biology, Xiamen University, Xiamen, China, 1987

Ph.D., Molecular Biology, University of Wyoming, Laramie, WY, USA, 1996

### **Professional Experience:**

1987-1989 Researcher, Xiamen Fishery Research Institute, Xiamen, China

1989-1991 Visiting Scholar, Dept. Biological Sci., SUNY-Buffalo, Buffalo, NY.

1991-1996 Research Assistant, Dept. Molecular Biology, Univ. Wyoming, Laramie, WY.

1996-1999 Intramural Research Training Fellow, Laboratory of Molecular & Cellular Biology, NIDDK, NIH, Bethesda, MD.

1999-present Research Molecular Biologist, USDA ARS Grand Forks Human Nutrition Research Center, Grand Forks, ND.

2000-present Adjunct Professor, Dept. Biochemistry & Molecular Biology, Univ. North Dakota. USA

### **Contribution of 6 Novel DNA sequences to GenBank:**

- (1) **Zeng, H.**, Kaul, S., Simons, S. S. Jr. *Rattus norvegicus* GMEB-2b (GMEB-2) mRNA, complete cds. Genbank# AF205780
- (2) **Zeng, H.**, Kaul, S., Simons, S. S. Jr. *Rattus norvegicus* GMEB-2a (GMEB-2) mRNA, complete cds. Genbank# AF205779
- (3) **Zeng, H.**, Kaul, S., Simons, S. S. Jr. *Rattus norvegicus* GMEB-2' (GMEB-2) mRNA, complete cds. Genbank# AF205778
- (4) **Zeng, H.**, Kaul, S., Simons, S. S. Jr. *Rattus norvegicus* GMEB-2 gene, promoter region. Genbank# AF203693
- (5) **Zeng, H.**, Kaul, S., Simons, S. S. Jr. *Homo sapiens* GMEB-1 gene, promoter region. Genbank# AF203692
- (6) **Zeng, H.**, Jackson, D. A., Oshima, H., Simons, S. S. Jr. *Rattus norvegicus* glucocorticoid modulatory element binding protein 2 mRNA, complete cds. Genbank# AF059273

## Publications:

### Peer Reviewed Journal Articles and Patents

1. **Zeng, H.** Biology of *Hexamermis sinensis*, with especial reference to its detailed morphology and experimental hosts. Journal of Xiamen University (Natural Science) 28: 311-315. 1989.
2. Yoo, J.\*, **Zeng, H.\***, Ji, I., Mudoch, W.J., Ji, T. H. COOH-terminal amino acids of the  $\alpha$  subunit play common and different roles in hCG and FSH. J. Biol. Chem. 268: 13034-13042. 1993 (\*The first two authors made equal contribution).
3. Ji, I., **Zeng, H.**, Ji, T. H. Receptor-activation and signal-generation of the LH/CG receptor: Cooperation of Asp397 of the receptor and  $\alpha$ Lys91 of the hormone. J. Biol. Chem. 268: 22971-22974. 1993.
4. Grossmann, M., Szkudlinski, M. W., **Zeng, H.**, Kraiem, Z, Ji, I., Tropea, J. E., Ji, T. H., Weintraub, B. D. Role of the carboxyterminal residues of the  $\alpha$  subunit in the expression and bioactivity of human thyroid-stimulating hormone. Molecular Endocrinology 9: 948-958. 1995.
5. **Zeng, H.**, Ji, I., Ji, T. H. Lys91 and His90 of the  $\alpha$  subunit are crucial for receptor binding and hormone action of FSH and play hormone-specific roles in FSH and hCG. Endocrinology 136: 2948-2953. 1995.
6. **Zeng, H.**, Jackson, D. A., Oshima, H., Simons, S. S. Jr. Cloning and characterization of a novel binding factor (GMEB-2) of the glucocorticoid modulatory element. J. Biol. Chem. 273: 17756-17762. 1998.
7. Simons, S. S. Jr., Kaul, S., Jackson, D. A., **Zeng, H.**, Oshima, H. U.S. Provisional Patent Application (1997) Serial No. 60/053,846; the World Intellectual Property Organization: Publication Number (1999) WO1999005273 A1. Gmeb nucleic acids, proteins, and uses thereof. February 1999.
8. **Zeng, H.**, Kaul, S., Simons, S. S. Jr. Genomic organization of human GMEB-1 and rat GMEB-2: structural conservation of two multifunctional proteins. Nucleic Acids Research 28: 1819-1829. 2000.
9. **Zeng, H.**, Plisov, S. Y., Simons, S. S. Jr. Ability of the glucocorticoid modulatory element (GME) to modify glucocorticoid receptor transactivation indicates parallel pathways for the expression of GME and glucocorticoid response element activities. Mol. Cell. Endocrinol. 162: 221-234. 2000.

10. **Zeng, H.**, Phang, T., Song, Y. S., Ji, I., Ji, T. H. The role of the hinge region in the luteinizing hormone receptor in hormone interaction and signal generation. *J. Biol. Chem.* 276:3451-3458. 2001.
11. **Zeng, H.** Arsenic suppresses necrosis induced by selenite in human leukemia HL-60 cells. *Biol. Tr. Elem. Res.* 83:1-15. 2001.
12. Davis, C. D., **Zeng, H.**, Finley, J. W. Selenium-enriched broccoli decreases intestinal tumorigenesis in multiple intestinal neoplasia mice. *J. Nutr.* 132: 307-309. 2002.
13. **Zeng, H.** Selenite and selenomethionine promote HL-60 cell cycle progression. *J. Nutr.* 132: 674-679. 2002.
14. **Zeng, H.**, Davis, C. D., Finley, J. W. Effect of selenium-enriched broccoli diet on differential gene expression in Min mouse liver. *J. Nutr. Biochem.* 14: 227-231. 2003.
15. Ren, J., Hintz, K. K., Roughead, Z. F., Duan, J., Colligan, P. B., Ren, B. H., Lee, K. J., **Zeng, H.** Impact of estrogen replacement on ventricular myocyte contractile function and protein kinase B/Akt activation. *Am. J. Physiol. Heart Circ. Physiol.* 284: H1800-1807. 2003.
16. **Zeng, H.** Genomic and proteomic techniques and their application in selenium research. *Current Pharmacogenomics* 1: 59-65. 2003.
17. **Zeng, H.**, Davis, C. D. Down-regulation of proliferating cell nuclear antigen gene expression occurs during cell cycle arrest induced by human fecal water in colonic HT-29 cells. *J. Nutr.* 133: 2682-2687. 2003.
18. Hintze, K. J., Wald, K. A., **Zeng, H.**, Jeffery, E. H., Finley, J. W. Thioredoxin reductase in human hepatoma cells is transcriptionally regulated by sulforaphane and other electrophiles via an antioxidant response element. *J. Nutr.* 133: 2721-2727. 2003.
19. **Zeng, H.**, Botnen, J. H. Copper may interact with selenite extracellularly in cultured HT-29 cells. *J. Nutr. Biochem.* 15: 179-184. 2004.
20. Hunt, J.R., **Zeng, H.** Iron absorption by heterozygous carriers of the HFE C282Y mutation associated with hemochromatosis. *Am. J. Clin. Nutr.* 80:924-931. 2004.
21. **Zeng, H.**, Saari, J. T. Increase type I collagen content and DNA binding activity of a single-stranded, cytosine-rich sequence in the high-salt buffer protein extract of the copper-deficient rat heart. *J. Nutr. Biochem.* 15: 694-699. 2004.
22. **Zeng, H.**, Briske-Anderson, M. Prolonged-butyrate treatment inhibits migration and invasion potential of HT1080 tumor cells. *J. Nutr.* 135: 291-295. 2005.

23. **Zeng, H.**, Uthus, E. O., Combs, G. F. Jr. Mechanistic aspects of the interaction between selenium and arsenic. *J. Inorg. Biochem.* 99: 1269-1274. 2005.
24. **Zeng, H.**, Saari, J. T., Dahlen, G. M. Copper deficiency increases fibulin-5 (DANCE/EVEC) but decreases cytochrome C oxidase VIb subunit expression in rat heart. *J. Inorg. Biochem.* 100: 186-91. 2006.
25. **Zeng, H.**, Briske-Anderson, M., Idso, J. P., Hunt, C. D. The selenium metabolite methylselenol inhibits the migration and invasion potential of HT1080 tumor cells. *J. Nutr.* 136:1528-32. 2006.
26. Saari, J. T., Wold, L. E., Duan, J., Ren, J., Carlson, H. L., Bode, A. M., Lentsch, A. B., **Zeng, H.**, Schuschke, D. A. Cardiac nitric oxide synthases are elevated in dietary copper deficiency. *J. Nutr. Biochem.* 18: 443-448. 2007.
27. **Zeng, H.**, Saari, J. T., Johnson, W. T. Copper deficiency decreases complex IV but not complex I, II, III, or V in the mitochondrial respiratory chain in rat heart. *J. Nutr.* 137:14-8. 2007.
28. **Zeng, H.**, Botnen, J. H. Selenium is critical for cancer-signaling gene expression but not cell proliferation in human colon Caco-2 cells. *Biofactors* 31:155-64. 2007.
29. **Zeng, H.**, Combs, G. F. Jr. Selenium as an anticancer nutrient: roles in cell proliferation and tumor cell invasion. *J. Nutr. Biochem.* 19: 1-7. 2008.
30. **Zeng, H.**, Botnen, J. H., Johnson, L. K. A selenium-deficient Caco-2 cell model for assessing differential incorporation of chemical or food selenium into glutathione peroxidase. *Biol. Tr. Elem. Res.* 123: 98-108. 2008.
31. **Zeng, H.** Selenium as an essential micronutrient: roles in cell cycle and apoptosis. *Molecules* 14: 1263-78. 2009.
32. **Zeng, H.**, Uthus, E. O., Ross, S.A., Davis, C. D. High dietary intake of sodium selenite does not affect gene mutation frequency in rat colon and liver. *Biol. Trace Elem. Res.* 131: 71-80. 2009.
33. **Zeng, H.**, Wu, M., Botnen, J. H. Methylselenol, a selenium metabolite, induces cell cycle arrest in G1 phase and apoptosis via the extracellular-regulated kinase 1/2 pathway and other cancer signaling genes. *J. Nutr.* 139:1613-8. 2009.
34. Nielsen, F. H, Johnson, L. K., **Zeng, H.** Magnesium supplementation improves indicators of low magnesium status and inflammatory stress in adults older than 51 years with poor quality sleep. *Magnes. Res.* 23:158-68. 2010.
35. **Zeng, H.**, Botnen, J. H., Briske-Anderson, M. Deoxycholic acid and selenium metabolite methylselenol exert common and distinct effects on cell cycle, apoptosis,

- and MAP kinase pathway in HCT116 human colon cancer cells. *Nutr. Cancer* 62: 85-92. 2010.
36. Uthus, E., Begaye, A., Ross, S., **Zeng, H.** The von Hippel-Lindau (VHL) tumor-suppressor gene is down-regulated by selenium deficiency in Caco-2 cells and rat colon mucosa. *Biol. Trace Elem. Res.* 142: 223-31. 2011.
  37. Wu, M., Huang, H., Zhang, W., Kannan, S., Weaver, A., McKibben, M., Herington, D., **Zeng, H.**, Gao, H. Host DNA repair proteins in response to *Pseudomonas aeruginosa* in lung epithelial cells and in mice. *Infect Immun.* 79:75-87. 2011.
  38. **Zeng, H.**, Trujillo, O. N., Moyer, M. P., Botnen, J. H. Prolonged sulforaphane treatment activates survival signaling in nontumorigenic NCM460 colon cells but apoptotic signaling in tumorigenic HCT116 colon cells. *Nutr. Cancer* 63:248-55. 2011.
  39. Zhang, S., Luo, Y., **Zeng, H.**, Wang, Q., Tian, F., Song, J., Cheng, W. H. Encapsulation of selenium in chitosan nanoparticles improves selenium availability and protects cells from selenium-induced DNA damage response. *J. Nutr. Biochem.* 22:1137-42. 2011.
  40. **Zeng, H.**, Lazarova, D. L. Obesity-related colon cancer: dietary factors and their mechanisms of anticancer action. *Clin. Exp. Pharmacol. Physiol.* doi: 10.1111/j.1440-1681. 2011.
  41. **Zeng, H.**, Yan, L., Cheng, W. H., Uthus, E. O. Dietary selenomethionine increases exon-specific DNA methylation of the p53 gene in rat liver and colon mucosa. *J. Nutr.* 141:1464-8. 2011.
  42. Combs, G. F. Jr., Watts, J. C., Jackson, M. I., Johnson, L. K., **Zeng, H.**, Scheett, A. J., Uthus, E. O., Schomburg, L., Hoeg, A., Hoefig, C. S., Davis, C. D., Milner, J. A. Determinants of selenium status in healthy adults. *Nutr. J.* 10:75. 2011.
  43. **Zeng, H.**, Jackson, M. I., Cheng, W.H., Combs, G. F. Jr. Chemical form of selenium affects its uptake, transport, and glutathione peroxidase activity in the human intestinal Caco-2 cell model. *Biol. Trace Elem. Res.* 143:1209-18. 2011.
  44. Combs, G. F. Jr., Jackson, M. I., Watts, J. C., Johnson, L. K., **Zeng, H.**, Idso, J., Schomburg, L., Hoeg, A., Hoefig, C.S., Chiang, E. C., Waters, D. J., Davis, C. D., Milner, J. A. Differential responses to selenomethionine supplementation by sex and genotype in healthy adults. *Br. J. Nutr.* 22:1-12. 2011.
  45. Holmstrom, A., Lei, K. Y., **Zeng, H.**, Cheng, W. H., Wu, R. Nutritional and supranutritional levels of selenate differentially suppress prostate tumor growth in adult but not young nude mice. *J. Nutr. Biochem.* 23:1086-91. 2012.

46. **Zeng, H.**, Briske-Anderson, M., Wu, M., Moyer, M. P. Methylselenol, a selenium metabolite, plays common and different roles in cancerous colon HCT116 cell and noncancerous NCM460 colon cell proliferation. *Nutr. Cancer* 64: 128-35. 2012.
47. Cheng, W. H., Holmstrom, A., Li, X., Wu, R.T., **Zeng, H.**, Xiao, Z. Effect of dietary selenium and cancer cell xenograft on peripheral T and B lymphocyte in adult nude mice. *Biol. Trace Elem. Res.* 146: 230-5. 2012.
48. Li, G.P., Yuan, K., Fox, J., Gaid, M., Seeger, D., Weaver, A., Breitwieser, W., Bansal, A. K., **Zeng, H.**, Gao, H., Wu, M. 8-oxoguanine DNA glycosylase 1-deficiency modifies allergic airway inflammation by regulating STAT6 and IL-4 in cells and in mice. *Free Radic. Biol. Med.* 52: 392-401, 2012.
49. Jackson, M.I., Cao, J., **Zeng, H.**, Uthus, E.O., Combs, G.F. Jr. S-Adenosylmethionine Dependent Protein Methylation is Required for Expression of Selenoprotein P and Gluconeogenic Enzymes in Human Hepatocytes. *J. Biol. Chem.* 287: 36455-64. 2012.
50. Cao, J.J., Gregoire, B.R., **Zeng, H.** Selenium deficiency decreases antioxidative capacity and is detrimental to bone microarchitecture in mice. *J. Nutr.* 142: 1526-31. 2012.
51. **Zeng, H.**, Cheng, W. H., Johnson, L. K. Methylselenol, a selenium metabolite, modulates p53 pathway and inhibits the growth of colon cancer xenografts in Balb/c mice. *J. Nutr. Biochem.* 24: 776-80. 2013.
52. **Zeng, H.**, Cao, J.J., Combs, G.F. Jr. Selenium in bone health: roles in antioxidant protection and cell proliferation. *Nutrients* 5: 97-110. 2013.
53. Yuan, K., Xie, K., Fox, J., **Zeng, H.**, Gao, H., Huang, C., Wu, M. Decreased Levels of miR-224 and the Passenger Strand of miR-221 Increase MBD2, Suppressing Maspin and Promoting Colorectal Tumor Growth and Metastasis in Mice. *Gastroenterology* 145: 853-64. 2013.
54. Randhawa, H., Kibble, K., **Zeng, H.**, Moyer, M.P., Reindl, K.M. Activation of ERK signaling and induction of colon cancer cell death by piperlongumine. *Toxicol. In Vitro.* 27: 1626-33. 2013.
55. **Zeng, H.**, Liu, J., Jackson, M.I., Yan, L., Combs, G.F. Jr. Fatty liver accompanies an increase of Lactobacillus species in the hind gut of C57BL/6 mice fed a high-fat diet. *J. Nutr.* 143: 627-31. 2013.
56. **Zeng, H.**, Lazarova, D.L., Bordonaro, M. Mechanisms linking dietary fiber, gut microbiota and colon cancer prevention. *World J Gastrointest Oncol.* 16: 41-51. 2014.

57. Tzeng, T.J., Cao, L., Fu, Y., **Zeng, H.**, Cheng, W.H. Methylseleninic acid sensitizes Notch3-activated OVCA429 ovarian cancer cells to carboplatin. *PLoS One* 9(7):e101664. 2014.
58. **Zeng, H.**, Wu, M. The inhibitory efficacy of methylseleninic acid against colon cancer xenografts in C57BL/6 mice. *Nutr. Cancer* 67:831-8. 2015.
59. **Zeng, H.**, Claycombe, K.J., Reindl, K.M. Butyrate and deoxycholic acid play common and distinct roles in HCT116 human colon cell proliferation. *J Nutr Biochem.* 26:1022-8. 2015.
60. Hakkak, R., **Zeng, H.**, Dhakal, I.B., Korourian, S. Short- and Long-Term Soy Diet Versus Casein Protects Liver Steatosis Independent of the Arginine Content. *J Med Food* 18:1274-80. 2015.
61. **Zeng, H.**, Grapov, D., Jackson, M.I., Fahrman, J., Fiehn, O., Combs, G.F. Integrating multiple analytical datasets to compare metabolite profiles of mouse colonic-cecal contents and feces. *Metabolites* 5:489-501. 2015.
62. Marioli, C., Balzarini, M., Aguade, F., Grosso, N., Soldini, D., **Zeng, H.**, Cheng W.H., Martinez, M.J. Climatic thresholds for concentrations of minerals and heavy metals in Argentinean soybeans. *Agronomy Journal* 108: 532-539, 2016.
63. Zhao, C., **Zeng, H.**, Wu, R.T., Cheng, W.H. Loss of selenium-binding protein 1 decreases sensitivity to clastogens and intracellular selenium content in HeLa cells. *PLoS One* 11 (7):e0158650, 2016.
64. **Zeng, H.**, Ishaq, S.L., Zhao, F.Q., Wright, A.G. Colonic inflammation accompanies an increase of  $\beta$ -catenin signaling and Lachnospiraceae/Streptococcaceae bacteria in the hind gut of high-fat diet-fed mice. *J. Nutr. Biochem.* 35:30-36. 2016.
65. Block, E., Booker, S.J., Flores-Penalba, S., George, G., Gundala, S., Landgraf, B.J., Liu, J., Lodge, S.N., Pushie, M.J., Rozovsky, S., Vattekkatte, A., Yaghi, R., **Zeng, H.** Trifluoroselenomethionine, a New Non-Natural Amino Acid. *Chembiochem* 2016 Sep 15;17(18):1738-51.
66. Wu, R.T., Cao, L., Mattson, E., Witwer, K.W., Cao J.J., **Zeng, H.**, He, X., Combs, G. F., Cheng, W.H. Opposing Impacts on Healthspan and Longevity by Limiting Dietary Selenium in Telomere Dysfunctional Mice. *Aging Cell* 2017 Feb;16(1):125-135.
67. **Zeng, H.**, Taussig, D.P., Cheng, W.H., Johnson, L.K., Hakkak, R. Butyrate Inhibits Cancerous HCT116 Colon Cell Proliferation but to a Lesser Extent in Noncancerous NCM460 Colon Cells. *Nutrients.* 2017 Jan 1;9(1). pii: E25. doi: 10.3390/nu9010025.

68. Bell, A., Korourian, S., **Zeng, H.**, Phelps, J., Hakkak, R. A diet containing a high- versus low-daidzein level does not protect against liver steatosis in the obese Zucker rat model. *Food Funct.* 2017 Mar 22;8(3):1293-1298.
69. Guo, X., Li, J., Tang, R., Zhang, G., **Zeng, H.**, Wood, R.J., Liu, Z. High Fat Diet Alters Gut Microbiota and the Expression of Paneth Cell-Antimicrobial Peptides Preceding Changes of Circulating Inflammatory Cytokines. *Mediators Inflamm.* 2017; 2017:9474896.
70. Cao, L., Zhang, L., **Zeng, H.**, Wu, R.T., Wu, T.L., Cheng, W.H. Analyses of Selenotranscriptomes and Selenium Concentrations in Response to Dietary Selenium Deficiency and Age Reveal Common and Distinct Patterns by Tissue and Sex in Telomere-Dysfunctional Mice. *J Nutr.* 2017 Oct;147(10):1858-1866.
71. **Zeng, H.**, Ishaq, S.L., Liu, Z., Bukowski, M.R. Colonic aberrant crypt formation accompanies an increase of opportunistic pathogenic bacteria in C57BL/6 mice fed a high-fat diet. *J Nutr Biochem.* 2018 Apr;54:18-27.
72. Zhang, L., **Zeng, H.**, Cheng, W.H. Beneficial and Paradoxical Roles of Selenium at Nutritional Levels of Intake in Healthspan and Longevity. *Free Radic Biol Med.* 2018 Nov 1;127:3-13.
73. Lu, H.Y., **Zeng, H.**, Zhang, L., Porres, J.M., Cheng, W.H. Fecal fermentation products of common bean-derived fiber inhibit C/EBP $\alpha$  and PPAR $\gamma$  expression and lipid accumulation but stimulate PPAR $\delta$  and UCP2 expression in the adipogenesis of 3T3-L1 cells. *J Nutr Biochem.* 2018 Oct;60:9-15.
74. Žáček, P., Bukowski, M., Mehus, A., Johnson, L., **Zeng, H.**, Raatz, S., Idso, J.P., Picklo, M. Dietary saturated fatty acid type impacts obesity-induced metabolic dysfunction and plasma lipidomic signatures in mice. *J Nutr Biochem.* 2019 Feb;64:32-44.
75. **Zeng, H.**, Umar, S., Rust, B., Lazarova, D., Bordonaro, M. Secondary Bile Acids and Short Chain Fatty Acids in the Colon: A Focus on Colonic Microbiome, Cell Proliferation, Inflammation, and Cancer. *Int J Mol Sci.* 2019 Mar 11;20(5). pii: E1214. doi: 10.3390/ijms20051214.
76. Guo, C., Kim, S.J., Frederick, A.M., Li, J., Jin, Y., **Zeng, H.**, Mason, J.B., Liu, Z. Genetic ablation of tumor necrosis factor-alpha attenuates the promoted colonic Wnt signaling in high fat diet-induced obese mice. *J Nutr Biochem.* 2020 Mar;77:108302. doi: 10.1016/j.jnutbio.2019.108302.
77. **Zeng, H.**, Safratowich, B.D., Wang, T.T.Y., Hamlin, S.K., Johnson, L.K. Butyrate Inhibits Deoxycholic-Acid-Resistant Colonic Cell Proliferation via Cell Cycle Arrest and Apoptosis: A Potential Pathway Linking Dietary Fiber to Cancer Prevention. *Mol*



Nutr Food Res. 2020 Jan 30:e1901014. doi: 10.1002/mnfr.201901014.

78. **Zeng, H.**, Larson, K.J., Cheng, W.H., Bukowski, M.R., Safratowich, B.D., Liu, Z., Hakkak R. Advanced liver steatosis accompanies an increase in hepatic inflammation, colonic, secondary bile acids and Lactobacillaceae/Lachnospiraceae bacteria in C57BL/6 mice fed a high-fat diet. *J Nutr Biochem.* 2020 Apr;78:108336.
79. Huang, Y.C., **Zeng, H.**, Wu, T.L., Chen, W.H. Dietary selenium requirement for the prevention of glucose intolerance and insulin resistance in middle-aged mice. *J. Nutr.* 151(7):1894-1900. 2021.
80. Mehus, A.A., Rust, B., Idso, J.P., Hanson, B., **Zeng, H.**, Yan, L., Bukowski, M.R., Picklo, M.J. Time-restricted feeding mice a high-fat diet induces a unique lipidomic profile. *J. Nutr. Biochem.* 88:108531. 2021.
81. **Zeng, H.**, Safratowich, B.D., Liu, Z., Bukowski, M.R., Ishaq, S.L. Adequacy of calcium and vitamin D reduces inflammation,  $\beta$ -catenin signaling and dysbiotic *Parasutterella* bacteria in the colon of C57BL/6 mice fed a Western-style diet. *J. Nutr. Biochem.* 92:108613. 2021.
82. **Zeng, H.**, Umar, S., Liu, Z., Bukowski, M.R. Azoxymethane alters the plasma metabolome to a greater extent in mice fed a high fat diet compared to an AIN-93 diet. *Metabolites.* 11(7):448. 2021.
83. **Zeng, H.**, Safratowich, B.D., Cheng, W.H., Larson, K.J., Briske-Anderson, M. Deoxycholic Acid Modulates Cell-Junction Gene Expression and Increases Intestinal Barrier Dysfunction. *Molecules.* 2022 Jan 22;27(3):723. doi: 10.3390/molecules27030723.
84. **Zeng, H.**, Safratowich, B.D., Cheng, W.H., Magnuson, A.D., Picklo, M.J. Changes in the Fecal Metabolome Accompany an Increase in Aberrant Crypt Foci in the Colon of C57BL/6 Mice Fed with a High-Fat Diet. *Biomedicines.* 2022 Nov 11;10(11):2891. doi: 10.3390/biomedicines10112891.
85. Huang, Y.C., Combs, G.F. Jr., Wu, T.L., **Zeng, H.**, Cheng, W.H. Selenium status and type 2 diabetes risk. *Arch Biochem Biophys.* 2022 Nov 15;730:109400. doi: 10.1016/j.abb.2022.109400. Epub 2022 Sep 16.
86. **Zeng, H.**, Safratowich, B.D., Cheng, W.H., Bukowski, M.R. Identification of oncogenic signatures in the inflammatory colon of C57BL/6 mice fed a high-fat diet. *J Nutr Biochem.* 2023 Jan;111:109188. doi: 10.1016/j.jnutbio.2022.109188.
87. Yan, L., Sundaram, S., Rust, B.M., Palmer, D.G., Johnson, L.K., **Zeng, H.** Consumption of a high-fat diet alters transcriptional rhythmicity in liver from pubertal mice. *Front Nutr.* 2023 Jan 4;9:1068350. doi: 10.3389/fnut.2022.1068350. eCollection 2022.
88. Rust, B.M., Picklo, M.J., Yan, L., Mehus, A.A., **Zeng, H.** Time-Restricted Feeding Modifies the Fecal Lipidome and the Gut Microbiota. *Nutrients.* 2023 Mar 23;15(7):1562. doi: 10.3390/nu15071562.
89. Li, J., Tang, Y., Lin, T.C., **Zeng, H.**, Mason, J.B., Liu, Z. Tumor necrosis factor- $\alpha$  knockout mitigates intestinal inflammation and tumorigenesis in obese *Apc*<sup>1638N</sup> mice. *J Nutr Biochem.*

## 2. Addition Publications:

90. **Zeng, H.** Cell Biology of *Hexamermis sinensis*. Xiamen University. 1987. (M.Sc. dissertation).
91. Ji, T. H., **Zeng, H.**, Ji, I. Hormone-binding and activation of the LH/CG receptor. In Lustbader, J.W. Puett, J.D., Ruddon, R. (eds.) Glycoprotein Hormones: Structure Function and Clinical Implications, Springer-Verlag, New York. pp.226-249. 1994.
92. **Zeng, H.** Interactions of gonadotropins and their receptors. University of Wyoming. 1996. (Ph.D. dissertation)
93. **Zeng, H.** Colorful plate of foods offers more appeal than you think. *The Grand Forks Herald*, North Dakota, 2001.
94. **Zeng, H.** Fruits, vegetables pack cancer-fighting punch. *The Grand Forks Herald*, North Dakota, 2003.
95. **Zeng, H.** Plant-based diet may be healthiest choice. *The Grand Forks Herald*, North Dakota, 2004.
96. **Zeng, H.** Diet, lifestyle play role in preventing cancer. *The Grand Forks Herald*, North Dakota, 2005.
97. **Zeng, H.** Food offers powerhouse of protection. *The Grand Forks Herald*, North Dakota, 2007.
98. **Zeng, H.** Selenium-enriched food fights cancer. *The Grand Forks Herald*, North Dakota, 2008.
99. **Zeng, H.** Nutrition, obesity and colon cancer risk. *The Grand Forks Herald*, North Dakota, 2009.
100. **Zeng, H.** Everyday veggies contain promising anticancer agent. *The Grand Forks Herald*, North Dakota, 2010.
101. **Zeng, H.** A healthy body weight reduces cancer risk. *The Grand Forks Herald*, North Dakota, 2012.
102. **Zeng, H.** Selenium and regulation of cell cycle and apoptosis. In Vladimir Uversky, Robert H. Kretsinger, Eugene A. Permyakov (eds.) Encyclopedia of Metalloproteins. Springer-Verlag, New York. pp.1908-13. 2013.
103. **Zeng, H.** A healthy diet: good in more than one way. *The Grand Forks Herald*, North Dakota, 2013.
104. **Zeng, H.** Eat Fiber, fight colorectal cancer. *The Grand Forks Herald*, North Dakota, 2014.

105. Claycombe, K.J., **Zeng, H.**, Combs, G.F. Dietary Effects on Adipocyte Metabolism and Epigenetics. In Ho Emily (eds.) Role of Nutrition & Metabolism on Epigenetic Regulation, Cat#: K21334 – Nutrition and Epigenetics, CRC book. on behalf of Taylor & Francis Group 2014.