

CURRICULUM VITAE

Seong-Ho Lee

Notarization: I have read the following and certify that this curriculum vitae is a current and accurate statement of my professional record.

Signature: 

Date: January 27 2012

1. Personal Information

Name: Seong-Ho Lee

Current rank: Assistant Professor

Institution/Department: University of Maryland / Nutrition and Food Science

Professional address: 3307 Marie Mount Hall, College Park, MD 20742

Type of appointment

Teaching: 50%

Research: 50%

Extension: 0%

Contact information

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Educational Background

<u>Degree</u>	<u>Year</u>	<u>Institution</u>
B. S.	1991	Korea University, Animal Science
M. S.	1993	Korea University, Animal Nutrition Thesis: Characteristics of nitrate reduction by rumen microorganisms and responses of host animal to prolonged nitrate intake
Ph.D.	1999	Korea University, Animal Nutrition & Physiology <i>Dissertation: Effects of nitrate and vitamin A on thyroid metabolism in animals</i>

Employment Background

Apr 2000- Post-doctoral, Department of Animal Science, Colorado State University, Fort Collins, CO 80523
Research area: *Regulation of lipogenic genes by colostral ultrafiltrate, propionate, and dietary copper*
Advisor: Dr. Kim L. Hossner

Jun 2002- Post-doctoral, Department of Biochemistry, University of Wisconsin,

Madison, WI 53706

Research area: *Molecular function of stearoyl CoA desaturase-1 (SCD1) gene in thermogenesis, obesity, and diabetes.*

Advisor: Dr. James Ntambi

Feb 2004-

Post-doctoral, Department of Pathobiology, University of Tennessee, Knoxville, TN 37996

Research area: *Biological function of NSAID-activated gene-1 in tumorigenesis and apoptosis in colorectal cancer*

Advisor: Dr. Seung J. Baek

Jul 2007-

Research Assistant Professor, Department of Pathobiology, University of Tennessee, Knoxville, TN 37996

Research area: *Molecular mechanism of antitumorigenic activities by phytochemicals and NSAIDs.*

Sep 2011-

Assistant Professor, Department of Nutrition and Food Science, University of Maryland, College Park, MD 20742

Research area: *Chemoprevention and molecular carcinogenesis*

2. Research, Scholarly, and Creative Activities

a. Books or Book chapter

1. Baek SJ, Lee S-H. (2009) Encyclopaedic Handbook of Beer in Health and Disease Prevention. Epicatechin Gallate in Colon Cancer Cells, Elsevier Inc. p871-878.

b. Articles in refereed Journals

1. Lee S-H, Son Y-S. (1993) Characteristics of nitrate reduction by rumen microorganism and responses of host animal to prolonged nitrate intake. *Korean J. Dairy Sci.* 15(4):261-270.
2. Son Y-S, Yu B-W, Han H-C, Lee S-H, Lee C-J, Kim K-S. (1994) A field study on the ruminal pH of lactating cows according to feeding system in Korea. *Korean J. Dairy Sci.* 16(4):326-334.
3. Han H-C, Lee S-H, Son Y-S. (1994) *In situ* and *in vitro* evaluations of some feed proteins heat-treated by different processing methods. *Korean J. Anim. Nutr. Feed* 18(6):491-498.
4. Son Y-S, Kim S-H, Hong S-H, Lee S-H. (1998) Effect of feeding bentonite and granite porphyry on ruminal buffering activity and fermentation pattern. *Korean J. Dairy Sci.* 20(1):21-32.
5. Lee S-H, Hong SH, Son YS. (1999) Studies on the substances modulating nitrate and nitrite reduction by rumen microbes. *Korean J. Anim. Nutr. Feed.* 23(5):411-418.
6. Lee S-H, Kim KD, Ko KS, Son YS. (2000) Retinoic acid level and function of porcine thyroid cells *in vitro*. *Korean J. Anim. Sci. Technol.* 42(2):165-172.
7. Lee S-H, Engle TE, Hossner KL. (2002) Effects of dietary copper on the expression of lipogenic genes and metabolic hormones in steers. *J. Anim. Sci.* 80(7):1999-2005. PMID: 12162670
8. Lee S-H, Hossner KL. (2002) Coordinate regulation of ovine adipose tissue gene expression by propionate. *J. Anim. Sci.* 80(11):2840-2849. PMID: 12462251
9. Lee S-H, Hossner KL. (2002) Effects of bovine colostrum ultrafiltrates on growth and differentiation of 3T3-L1 preadipocytes. *Biotechnol Appl Biochem.* 36:205-212. PMID:

12452804

10. Rahman SM, Dobrzyn A, Dobrzyn P, **Lee S-H**, Miyazaki M, Ntambi JM. (2003) Stearoyl-CoA desaturase 1 deficiency elevates insulin signaling components and downregulates protein-tyrosine phosphatase 1B in muscle. *Proc. Natl. Acad. Sci. USA.* 100(19):11110-11115. PMID: 12960377
11. Miyazaki M, Dobrzyn A, Sampath H, **Lee S-H**, Man WC, Chu K, Peters JM, Gonzalez FJ, Ntambi JM. (2004) Reduced adiposity and liver steatosis by stearoyl-CoA desaturase deficiency are independent of peroxisome proliferator-activated receptor- α . *J. Biol. Chem.* 279(33):35017-35024. PMID: 15180999
12. **Lee S-H**, Dobrzyn A, Dobrzyn P, Rahman SM, Miyazaki M, Ntambi JM. (2004) Lack of stearoyl-CoA desaturase 1 upregulates basal thermogenesis, but causes hypothermia in cold environment. *J. Lipid Res.* 45(9):1674-1682. PMID: 15210843
13. Yamaguchi K, **Lee S-H**, Eling TE, Baek SJ. (2004) Identification of nonsteroidal anti-inflammatory Drug-activated gene (NAG-1) as a novel downstream target of phosphatidylinositol 3-kinase/AKT/GSK-3 β pathway. *J. Biol. Chem.* 279(48): 49617-49623. PMID: 15377673
14. Baek SJ, Kim J-S, Jackson FR, Eling TE, McEntee MF, **Lee S-H**. (2004) Epicatechin gallate-induced expression of NAG-1 is associated with growth inhibition and apoptosis in colon cancer cells. *Carcinogenesis* 25(12):2425-2432. PMID: 15308587
15. Rahman SM, Dobrzyn A, **Lee S-H**, Dobrzyn P, Miyazaki M, Ntambi JM. (2005) Stearoyl-CoA desaturase 1 deficiency increases insulin signaling and glycogen accumulation in brown adipose tissue. *Am. J. Physiol. Endocrinol. Metab.* 288:E381-387. PMID: 15494611
16. Dobrzyn A, Dobrzyn P, **Lee S-H**, Miyazaki M, Cohen P, Asilmaz E, Hardie DH, Friedman JM, Ntambi JM. (2005) Stearoyl-CoA desaturase 1 deficiency reduces ceramide synthesis by down-regulating serine palmitoyltransferase and increasing β -oxidation in skeletal muscle. *Am. J. Physiol. Endocrinol. Metab.* 288:E599-607. PMID: 15562249
17. Baek SJ, Kim J-S, Moore SM, **Lee S-H**, Martinez J, Eling TE. (2005) Cyclooxygenase inhibitors induce the expression of the tumor suppressor gene EGR1, which results in the up-regulation of NAG-1, an anti-tumorigenic protein. *Mol. Pharmacol.* 67(2):356-364. PMID: 15509713
18. **Lee S-H**, Kim J-S, Yamaguchi K, Eling TE, Baek SJ. (2005) Indole-3-carbinol and 3,3'-diindolylmethane induce expression of NAG-1 in a p53 independent manner. *Biochem. Biophys. Res. Commun.* 328:63-69. PMID: 15670751
19. Kim J-H, Yamaguchi K, **Lee S-H**, Tithof, PK, Saylor GS, Yoon J-H, Baek SJ. (2005) Evaluation of polycyclic aromatic hydrocarbons in the activation of early growth response-1 and peroxisome proliferator activated receptors. *Toxicol. Sci.* 85:585-593. PMID: 15716483
20. Yamaguchi K, **Lee S-H**, Kim J-S, Wimalasena J, Kitajima S, Baek SJ. (2006) Activating transcription factor 3 and early growth response-1 are the novel targets of LY294002 in a PI3K independent pathway. *Cancer Res.* 66:2376-2384. PMID: 16489044
21. **Lee S-H**, Yamaguchi K, Kim J-S, Eling TE, Safe S, Park Y, Baek SJ. (2006) Conjugated linoleic acid stimulates an anti-tumorigenic protein NAG-1 in an isomer specific manner. *Carcinogenesis* 27(5):972-981. PMID: 16286461
22. Yamaguchi K, **Lee S-H**, Eling TE, Baek SJ. (2006) A novel peroxisome proliferator-activated receptor γ ligand, MCC-555, induces apoptosis via posttranscriptional regulation of NAG-1 in colorectal cancer cells. *Molecular Cancer Therapeutics* 5(5):1352-1361. PMID: 16731769
23. Baek SJ, Okazaki R, **Lee S-H**, Martinez J, Kim J-S, Yamaguchi K, Mishina Y, Martin WD, Shoieb A, McEntee MF, Eling TE. (2006) Nonsteroidal anti-inflammatory drug activated gene-1 over-expression in transgenic mice suppresses intestinal neoplasia.

- Gastroenterology* 131(5):1553-1560. PMID: 17101328
24. Lim YC*, **Lee S-H***, Song MH, Yamaguchi K, Yoon J-H, Choi EC, Baek SJ. (2006) Growth inhibition and apoptosis by (-)-epicatechin gallate are mediated by cyclin D1 suppression in head and neck squamous carcinoma cells. *Eur J Cancer* 42:3260-3266. PMID: 17045795 *equally contributed
 25. Cho K-N, Sukhthankar M, **Lee S-H**, Yoon J-H, Baek SJ. (2007) Green tea catechin (-)-epicatechin gallate induces tumor suppressor protein ATF3 via EGR-1 activation. *Eur J Cancer* 43:2404-12. PMID: 17764926
 26. **Lee S-H**, Cekanova M, Baek SJ. (2008) Multiple mechanisms are involved in 6-gingerol-induced cell cycle arrest and apoptosis in human colorectal cancer cells. *Molecular Carcinogenesis* 47:197-208. PMID: 18058799
 27. Sukhthankar M, Yamaguchi K, **Lee S-H**, McEntee MF, Eling TE, Hara Y, Baek SJ. (2008) Green tea component suppresses post-translational expression of basic fibroblast growth factor in colorectal cancer. *Gastroenterology* 134:1972-80. PMID: 18549879
 28. **Lee S-H**, Bahn JH, Choi CK, Whitlock NC, English AE, Safe S, Baek SJ. (2008) ESE-1/EGR-1 pathway plays a role in tolfenamic acid-induced apoptosis in colorectal cancer cells. *Molecular Cancer Therapeutics* 7(12):3739-50. PMID: 19074849
 29. Iguchi G, Chrysovergis K, **Lee S-H**, Baek SJ, Langenbach R, Eling TE (2009) A reciprocal relationship exists between non-steroidal anti-inflammatory drug-activated gene-1 (NAG-1) and cyclooxygenase-2. *Cancer Letter* 282(2):152-8. PMID: 19375854
 30. Cekanova M, **Lee S-H**, Donnell RL, Sukhthankar M, Eling TE, Fischer SM, Baek SJ. (2009) Nonsteroidal Anti-inflammatory Drug-Activated Gene-1 Expression Inhibits Urethane-Induced Pulmonary Tumorigenesis in Transgenic Mice. *Cancer Prevention Research* 2(5):450-458. PMID: 19401523
 31. Choi CK, Sukhthankar M, Kim C-H, **Lee S-H**, English A, Kihm K, Baek SJ. (2010) Cell adhesion property affected by cyclooxygenase and lipoxygenase: Opto-electric approach. *Biochem. Biophys. Res. Commun.* 391:1385-9. PMID: 20026301
 32. **Lee S-H**, Krisanapun C, Baek SJ. (2010) NSAID-activated gene-1 as a molecular target for capsaicin-induced apoptosis through a novel molecular mechanism involving GSK3 β , C/EBP β , and ATF3. *Carcinogenesis* 31(4):719-28. PMID: 20110283
 33. Cekanova M, **Lee S-H**, McEntee MF, Baek SJ. (2010) MCC-555-induced NAG-1 expression is mediated in part by KLF4. *Eur. J. Pharmacol.* 637: 30–37. PMID: 20385121
 34. **Lee S-H**, Bahn JH, Whitlock NC, Baek SJ. (2010) Activating transcription factor 2 (ATF2) controls tolfenamic acid-induced ATF3 expression via MAP kinase pathways. *Oncogene* 29: 5182–5192. PMID: 20581861
 35. Zhong Y, Krisanapun C, **Lee S-H**, Nualsanit T, Sams C, Peungvicha P, Baek SJ. (2010) Molecular targets of apigenin in colorectal cancer cells: Involvement of p21, NAG-1 and p53. *Eur J Cancer.* 46:3365-74. PMID: 20709524.
 36. Kim C-H, Bahn JH, **Lee S-H**, Kim G-Y, Jun DS, Lee K-H, Baek SJ (2010) Induction of cell growth arrest by atmospheric non-thermal plasma in colorectal cancer cells. *Journal of Biotechnology* 150:530–538. PMID: 20959125
 37. Whitlock NC, Bahn JH, **Lee S-H**, Eling TE, Baek SJ (2011) Resveratrol-induced Apoptosis is mediated by Early Growth Response-1, Krüppel-like Factor 4, and Activating Transcription Factor 3. *Cancer Prevention Research* 4:116–27. PMID:21205742
 38. Krisanapun C, **Lee S-H**, Peungvicha P, Temsiririrkkul R, Baek SJ. (2011) Antidiabetic Activities of Abutilon indicum (L.) Sweet are Mediated by Enhancement of Adipocyte Differentiation and Activation of the GLUT1 Promoter. *Evidence-based Complementary and Alternative Medicine.* 2011:167684. PMID:21603234

39. **Lee S-H***, Richardson RL, Dashwood RH, Baek SJ. (2011) Capsaicin represses transcriptional activity of β -catenin in human colorectal cancer cells. *Journal of Nutritional Biochemistry* (In press). PMID:21764279 *Corresponding author.
40. Margraves CH, Kihm KD, Yoon SY, Choi CK, **Lee S-H**, Liggett JL, Baek SJ. (2011) Simultaneous measurements of cytoplasmic viscosity and intracellular vesicle sizes for live human brain cancer cells. *Biotechnology & bioengineering* 108: 2504–2508. PMID:21520025
41. Nualsanit T, Rojanapanthu P, Gritsanapan W, **Lee S-H**, Lawson DB and Baek SJ. Damnacanthal, a *Noni* component, exhibits anti-tumorigenic activity in human colorectal cancer cells. *Journal of Nutritional Biochemistry* (In press) PMID:21852088.
42. **Lee S-H**, Min KW, Zhang X. 3,3'-diindolylmethane induces activating transcription factor 3 (ATF3) via ATF4 in human colorectal cancer cells. *Journal of Nutritional Biochemistry* (Under revision).
43. Kang SU, Lee B-S, **Lee S-H**, Baek SJ, Kim C-H. Expression of NSAID activated gene-1 by EGCG in head and neck cancer: Involvement of ATM-dependent p53 expression (Submitted)
44. Kang SU, Shin YS, Hwang HS, Baek SJ, **Lee S-H**, Kim CH. Tolfenamic acid induces apoptosis and growth inhibition in head and neck cancer: Involvement of NAG-1 expression (Submitted)

c. Presentations in Conference

1. Han H-C, **Lee S-H**, Son Y-S. Effect of supplementation of Zn and Mn on nitrogen digestibility and retention in rumen. '94 Annual Meeting of Korean Federation of the Societies in Animal Sciences. 1994
2. **Lee S-H**, Han H-C, Son Y-S. Effect of yeast culture on nitrate reduction and oxidation of blood hemoglobin in rumen. '94 Annual Meeting of Korean Federation of the Societies in Animal Sciences. 1994
3. **Lee S-H**, Kim S-H, Son Y-S. Effect of bentonite and granite porphyry on ruminal buffering activity and fermentation pattern ruminant animal. '95 Korea-China Animal Nutrition Conference. 1995
4. Son Y-S, **Lee S-H**. Investigation of TMR feeding effect on dairy cows. 1995 Korean Society of Dairy Science. 1995
5. **Lee S-H**, Hong S-H, Kim K-D, Son Y-S. Effect of nitrate on thyroid functions of animal. 7th Annual Congress of Korean Federation of the Societies in Animal Sciences. 1997
6. Hong S-H, **Lee S-H**, Son Y-S. Effect of feeding bentonite and granite porphyry on the ruminal buffering activity and fermentation pattern. The 8th World Conference on Animal Production, 1998
7. **Lee S-H**, Kim K-D, Son Y-S. A study on antithyroid effects of nitrate in rat thyroid cells. The 8th World Conference on Animal Production, 1998
8. Yamaguchi K, **Lee S-H**, Eling TE, Baek SJ. Phosphatidylinositol 3-kinase/AKT/glycogen synthase kinase-3 β pathway downregulates anti-tumorigenic protein NAG-1 in human colorectal cancer cells. 96th Annual Meeting of American Association for Cancer Research, 2005
9. **Lee S-H**, Yamaguchi K, Kim J-S, Eling TE, Park Y, Baek SJ. Conjugated linoleic acid stimulates an anti-tumorigenic protein NAG-1 in an isomer specific manner. 96th Annual Meeting of American Association for Cancer Research, 2005
10. Yamaguchi K, **Lee S-H**, Kim J-S, Wimalasena J, Kitajima S, Baek SJ. Involvement of activating transcription factor 3 and early growth response-1 in LY294002-induced apoptosis in human colorectal cancer cells. 97th Annual Meeting of American Association for Cancer Research, 2006
11. **Lee S-H**, Kim J-S, Yamaguchi K, Eling TE, Baek SJ 3-3'-diindolylmethane, a major acid

- condensation product of indole-3-carbinol, induce expression of NAG-1 and ATF3 in colorectal cancer cells. 97th Annual Meeting of American Association for Cancer Research, 2006
12. Park Y, **Lee S-H**, Storkson JM, Liu W, Pariza MW. Conjugated Linoleic and Conjugated nonadecadienoic Acids (CLA & CNA) inhibit adipocytic differentiation of mouse bone marrow stem cells. *FASEB J.*/19:A58. 98th Annual Meeting of American Society for Biochemistry and Molecular Biology, 2006
 13. Kim J-S, **Lee S-H**, Baek SJ. Seo E-W, Eling TE. Caffeic acid phenethyl ester up-regulates non-steroidal anti-inflammatory drug activated gene via activating transcription factor 3. 98th Annual Meeting of American Association for Cancer Research, 2007
 14. Yamaguchi K, **Lee S-H**, Eling TE, Baek SJ. AU-rich sequences in the 3'-untranslated region of *NAG-1* determine the RNA stability and PPAR γ ligand MCC-555-induced *NAG-1* expression. 98th Annual Meeting of American Association for Cancer Research, 2007
 15. **Lee S-H**, Cekanova M, Baek SJ. 6-gingerol induces cell cycle arrest and apoptosis through multiple mechanisms in human colorectal cancer cells. 98th Annual Meeting of American Association for Cancer Research, 2007
 16. Margraves CH, Choi CK, Kihm KD, English A, **Lee S-H**, Cekanova M, Baek SJ. Quantitative imaging of nanoparticles and intracellular vesicle trafficking using total internal reflection fluorescent microscopy (TIRFM). Proceedings of the ASME 2007 Summer Bioengineering Conference (SBC2007), 2007
 17. **Lee S-H**, Whitlock NC, Choi CK, English AE, Safe SH, Baek SJ. Tolfenamic Acid Increases EGR-1 Expression through a PKC/ERK Dependent Pathway in Human Colorectal Cancer Cells. Annual Meeting of American Society for Biochemistry and Molecular Biology, 2008
 18. **Lee S-H**, Krisanapun C, Baek SJ. Capsaicin activates anti-tumorigenic protein NAG-1 through PKC-, GSK3 beta, and C/EBP beta-mediated pathway. 100th Annual Meeting of American Association for Cancer Research, 2009
 19. Krisanapun C, **Lee S-H**, Perez-Albela L, Sams C, Peunvicha P, Baek SJ. Anti-proliferative activity of apigenin in colorectal and breast cancer cells. 100th Annual Meeting of American Association for Cancer Research, 2009
 20. Park Y, Rhee S, Terk M, Park Y, Kim BH, Han K, **Lee S-H**. Conjugated linoleic acid (CLA) improves osteogenesis in murine mesenchymal bone marrow stem cells. Annual Meeting of Food Expo, 2009
 21. Sun X, Baek SJ, **Lee S-H**, Zemel M. NAG-1 promotes a lean phenotype by stimulating mitochondrial biogenesis and fatty acid oxidation. The Obesity Society's Annual Scientific Meeting, 2009.
 22. **Lee S-H**, Krisanapun C, Baek SJ. NSAID-activated gene-1 as a molecular target for capsaicin-induced apoptosis through a novel molecular mechanism involving GSK3beta, C/EBPbeta, and ATF3. Annual Meeting of American Society for Biochemistry and Molecular Biology 2010.
 23. Wong JY, Park Y, **Lee S-H**, Baek SJ, Park Y. Trans-10,cis-12 CLA suppresses osteosarcoma cells via phosphoinositide 3-kinase pathway. Annual Meeting of American Society for Biochemistry and Molecular Biology 2010.
 24. **Lee S-H**, Richardson RL, Baek SJ. Capsaicin represses transcriptional activity of β -catenin in human colorectal cancer cells. 102th Annual Meeting of American Association for Cancer Research, 2011
 25. **Lee S-H**, Bahn JH, Whitlock NC, Baek SJ. Activating transcription factor 2 (ATF2) controls tolfenamic acid-induced ATF3 expression via MAP kinase pathways. 102th Annual Meeting of American Association for Cancer Research, 2011

d. Grants and Contracts

7/2009-6/2012 \$150,000 NCI/NIH (R03)
Principle Investigator (PI)
Combinational anti-cancer effects of capsaicin and 3,3'-diindolylmethane in colorectal cancer

7/2011-6/2015 \$720,000 American Cancer Society (RSG)
Principle Investigator (PI)
Prevention of colorectal cancer by tolfenamic acid:
Mechanistic studies

e. Fellowships, Honors, Prizes and Awards

Fellowship

1999-2001 Korea Science and Engineering Foundation Post-doctoral Fellowship

Awards

2008 ASBMB Experimental Biology 2008 Travel Award. San Diego, CA
2009 Award of Excellence 2009, Comparative & Experimental Medicine Symposium at University of Tennessee
2010 Award of Excellence 2010, Comparative & Experimental Medicine and Public Health Research Symposium at University of Tennessee

f. Editorships, Editorial Boards, and Reviewing Activities for Journals and Other Learned Publications

Reviewer (ad-hoc)

- International Journal of Cancer (IJC) (1)
- Cancer Letter (2)
- Biochimica et Biophysica Acta (BBA) (1)
- Journal of Medicinal Food (JMF) (1)
- Critical Reviews in Food Science and Nutrition (1)
- Osteoporosis International (1)
- Molecules (1)
- Food Science and Biotechnology (6)
- NeuroSignals (1)
- Yonsei Medical Journal (1)
- Food and Chemical Toxicology (1)
- Journal of Nutritional Biochemistry (1)

3. Mentoring and Advising

a. Advising: Research Direction

Undergraduate

Zhiyuan Lou (Oct 2011-present)

Charlene (Xiaojing) Jiang (Oct 2011-present)

Internship training

Yong Kyu Shin (Feb 2012-present)

Post-doctoral

Dr. Jin Boo Jeong (Jan 2012-present)

4. Service

Departmental

1. PhD Degree Committee: Tsung-Yu (Ryan) Wu (Nov 2011-Present)

2. Curriculum Committee for Nutrition (2012)

College

1. AGNR Open House Day poster judge (Oct 2011)

2. Shorb Lecture Committee (2012)

University

1. Human Study Review Committee (2012)