

CURRICULUM VITAE

Name and Address Kuk-Wha Lee MD PhD FAAP
11780 Pecan Way
Loma Linda, CA 92354
Ph: (909) 799-1510
E-mail: kukwhalee@mednet.ucla.edu

Present Position Assistant Professor, Pediatric Endocrinology
Training Program Director
Mattel Children's Hospital at UCLA
David Geffen School of Medicine at UCLA
10833 Le Conte Ave., MDCC 22-315
Los Angeles, CA 90095
Ph: (310) 825-6244
FAX: (310) 206-5843
July 2004-present

Personal

Date of Birth	September 11, 1968
Place of Birth	Seoul, Korea
Citizenship	USA
Marital Status	Married
Spouse	Daniel J. Won, MD
Dependent	Timothy DOB 5/94 Mitchell DOB 10/96

Religion Seventh-Day Adventist

Education

B.S. Chemistry	Southwestern Adventist College Keene, TX May 1988 Minors: Biology, Physics, Mathematics
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Note: PhD/MD via Medical Scientist Training Program 1988-1996

Ph.D. Microbiology	Loma Linda University Loma Linda, CA March 1995
Thesis title	“Transcriptional regulation of insulin-like growth factor binding protein-4 (IGFBP-4) by protein kinase A and protein kinase C regulatory mechanisms in human bone cells”
M.D.	Loma Linda University School of Medicine Loma Linda, CA May 1996
Residency	Pediatrics Loma Linda University Children’s Hospital July 1997-June 2000
Fellowship	Pediatric Endocrinology Mattel Children’s Hospital at UCLA July 2000-June 2003
Previous Position	Clinical Instructor, Pediatric Endocrinology Mattel Children’s Hospital at UCLA July 2002-June 2004
Board	American Board of Pediatrics October 2000
Subboard	Pediatric Endocrinology August 2005
Current Position	Assistant Professor in Residence July 2004 Training Program Director August 2007
Research Experience	Synthesis and NMR analysis of Lithium organometallic compounds Karen Hansen, Ph.D. North Texas State University June 1985-August 1985

Molecular Genetics of *hsdR* and *hsdM* Restriction-Modification systems in *E.coli* K12

Junichi Ryu, Ph.D.
Loma Linda University
June 1986-August 1986

Sequencing the mHA gene (Bacterial Chemotaxis)

Barry Taylor, Ph.D.
Loma Linda University
June 1987-December 1988

Transcriptional Regulation of the human Insulin-like growth factor binding protein (IGFBP-4) gene

Donna D. Strong
Division of Mineral Metbolism
Jerry Pettis VA MedicalCenter
Loma Linda, CA
June 1989-March 1996

Functional Interactions Between RXR, Nur77, and IGFBP-3 in the Regulation of Cellular Growth and Apoptosis in human carcinoma

Pinchas Cohen, MD
Pediatric Endocrinology
Mattel Children's Hosp at UCLA
Los Angeles, CA
July 2000-June 2003

Examination

NBME, Part I	June 1991
USMLE, Part II	March 1996
USMLE, Part III	December 1997
American Board of Pediatrics	October 2000
American Board of Pediatrics Subboard Endocrinology	August 2005

Medical License

California A065975

Honors

Magna cum laude
Who's Who in American Colleges and Univ.
Minority Fellowship in Chemical Res, NTSU

Summer Fellowship in Biomed Research, LLU
Medical Scientist Training Prog Scholarship
UCLA Department of Pediatrics Res Award

Current Funding

Giannini Foundation Fellow
2001-2003

UCLA CHCRC-K12 Award
2004-2006

UCLA/UCSD DERC P & F
2004-2005

UCLA Stein-Oppenheimer Endowment Award
2004-2005

Lawson Wilkins Pediatric Endocrine Society
Genentech Clinical Scholar
2004-2006

Leadership

American Medical Student Association
President, Loma Linda Chapter (1990-1991)

Memberships

American Academy of Pediatrics
Amer. Assoc. for the Advancement of Science
Endocrine Society
Lawson Wilkins Pediatric Endocrine Society
American Diabetes Association
Society for Pediatric Research

Honors and Awards

1986	Minority Summer Fellowship in Chemical Research, NTSU
1987	Summer Fellowship in Biomedical Research, LLU
1988	Magna cum laude
1989	Who's who in American Colleges and Universities
1990	Medical Scientist Training Program Scholarship
1992	American Medical Student Association, President
2001	Giannini Family (Bank of America) Foundation Fellow
2003	UCLA Department of Pediatrics Fellows Award for Basic Research
2004	Stein-Oppenheimer Award

2004 LWPES/Genentech Clinical Scholar
2005 UCLA / UCSD DERC Developmental Award
2006 UCLA Prostate Cancer SPORE Career Development Award
2007 Phase One Foundation Clinical Scientist Development Award

Publications (peer reviewed)

1. Mohan S, Strong DD, Hilliker S, Malpe R, **Lee K**, Farley J, Baylink DJ. 1993. Dibutyl cyclic adenosine monophosphate differentially regulates cell proliferation in low and high alkaline phosphatase SaOS-2 human osteosarcoma cells: Evidence for mediation by the insulin-like growth factor-II system. *J Cell Phys*. 156:462-468.
2. Qin X, Morales S, **Lee KW**, Boonyaratanakornkit V, Baylink DJ, Mohan S, Strong DD. Structural and functional analysis of the 5' flanking region of the human insulin-like growth factor binding protein (IGFBP)-4 gene. *Biochimica et Biophysica Acta* . 1350:136-140.
3. Wetterau LA, Moore MG, **Lee KW**, Shim ML, Cohen P. 1999. Novel aspects of the insulin-like growth factor binding proteins. *Mol Genet Metab* 68:161-81.
4. **Lee KW**, Sherwin T, Won D. 1999. An alternate technique to close neurosurgical incisions using octylcyanoacrylate adhesive. *Pediatric Neurosurgery* 31:110-114.
5. **Lee KW**, McCleary M, Zuppan CW, Won D. 2000. Langerhans cells histiocytosis presenting as an intracranial epidural hematoma. *Pediatric Radiology* 30:326-328.
6. **Lee KW**, Cohen P. 2001. Individualizing GH therapy in children. *Hormone Research* 56(Suppl 1): 29-34.
7. Rajah R, **Lee KW**, Cohen P. 2002. Insulin-like Growth Factor Binding Protein-3 (IGFBP-3) mediates TNF- α Induced Apoptosis: Role of Bcl-2 Phosphorylation. *Cell Growth and Differ* 13:163-71.
8. **Lee KW**, Cohen P. 2002. Nuclear Effects: Unexpected Intracellular Actions of Insulin-like Growth Binding Protein-(IGFBP-3). *J Endocrinology* 175:33-40.
9. Ikonen M, Liu B, Hashimoto Y, Niikura T, **Lee KW**, Nishimoto I, Cohen P. 2003. Interaction between the Alzheimer's survival peptide humanin and insulin-like growth factor-binding protein 3 regulates cell survival and apoptosis. *Proc Natl Acad Sciences USA* 100:13042-13047.
10. Ali O, Cohen P, **Lee KW**. 2003. Epidemiology and Biology of Insulin-like Growth Factor Binding Protein-3 (IGFBP-3) as an anti-cancer molecule. *Horm Metab Res* 35: 726-733.

11. **Lee KW**, Lee PDK. 2004. Growth Hormone Deficiency (GHD): A New Association in Peters' Plus Syndrome (PPS). *Am J Hum Genet* 124A: 388-391.
12. **Lee KW**, Liu B, Ma L, Li H, Bang P, Koeffler HP, Cohen P. 2004. Cellular Internalization of Insulin-like Growth Factor Binding Protein-3: DISTINCT ENDOCYTIC PATHWAYS FACILITATE RE-UPTAKE AND NUCLEAR LOCALIZATION. *J. Biol. Chem.* 279: 469-476.
13. **Lee KW**, Ma L, Yan X, Liu B, Zhang XK, Cohen P. 2005. Rapid apoptosis induction by IGFBP-3 involves an IGF -independent nucleo-mitochondrial translocation of RXR α /Nur77. *J Biol Chem.* 280:16942-8.
14. Ralli M, Cohan P, **Lee KW**. 2005. Successful I-131 Therapy of Pediatric Well-Differentiated Thyroid Cancer Using Recombinant Human Thyrotropin. *J Endo Invest.* 28: 270-273.
15. Liu B, **Lee KW**, Li H, Ma L, Chandraratna RA, Cohen P. 2005. Combination therapy of Insulin-like Growth Factor Binding Protein-3 (IGFBP-3) and RXR ligands synergize on prostate cancer cell apoptosis *in vitro* and *in vivo*. *Clin Cancer Res* 11:4851-6.
16. Cobb LJ, Liu B, **Lee KW**, Cohen P. 2006. Phosphorylation by DNA-PK is functionally critical for apoptosis induction by IGFBP-3. *Cancer Res.* 66(22):10878-10884.
17. Liu B, **Lee KW**, Anzo M, Zhang B, Zi X, Tao Y, Shiri L, Pollak M, Lin S, Cohen P. 2007. IGFBP-3 inhibition of prostate cancer progression involves suppression of angiogenesis. 26:1811-9. *Oncogene*.
18. Kim HS, Ali O, Shim M, **Lee KW**, Vuguin P, Muzumdar R, Barzilai N, Cohen P. 2007. Insulin-like Growth Factor Binding Protein-3 induces insulin resistance *in vitro* and *in vivo*. *Pediatric Res.* 61:159-164.
19. **Lee KW**, Ma L, Cobb L, Paharkova-Vatchkova V, Liu B, Milbrandt J, Cohen P. 2007. Contribution of the Orphan Nuclear Receptor Nur77 to the Apoptotic Action of IGFBP-3. *Carcinogenesis* 28:1653-1658.
20. Hernandez MI, **Lee KW**. 2007. Neonatal Graves Disease Caused by Transplacental Antibodies. *NeoReviews* 9:e

21. Chang Hoftman A, Hernandez MI, **Lee KW**, Stiehm ER. 2008. Newborn Illnesses Caused by Transplacental Antibodies. *Adv Pediatr* 55: 271-304.
22. Yamada PM, **Lee KW**. 2009. Perspectives in Mammalian IGFBP-3 Biology: Local vs. Systemic Action. *Am J Physiol Cell Physiol*. 296:C954-76
23. Hoang PT, Park P, Cobb LJ, Paharkova-Vatchkova V, Hakimi M, Cohen P, **Lee KW**. 2008. The neurosurvival factor Humanin inhibits beta cell apoptosis via Stat3 activation and delays and ameliorates diabetes in NOD mice. *Metabolism*. 2010 Mar;59(3):343-9. PMID: 19800083.
24. Jia Y, **Lee KW**, Swerdloff RS, Hwang D, Cobb LJ, Hikim AS, Lue YH, Cohen P, and Wang C. The interaction of insulin-like growth factor binding protein-3 and bax in mitochondria promotes male germ cell apoptosis. *Journal of Biological Chemistry*. 2010 Jan 15;285(3):1726-32. PMID: 19887447
25. Lue Y, Swerdloff R, Liu Q, Mehta H, Sinha Hikim A, **Lee KW**, Jia Y, Hwang D, Cobb LJ, Cohen P, Wang C. Opposing Roles of Insulin-Like Growth Factor Binding Protein 3 and Humanin in the Regulation of Testicular Germ Cell Apoptosis. *Endocrinology*. 2010 Jan;151(1):350-7. Epub 2009 Dec 1. PMID: 19952275
26. Paharkova-Vatchkova, V, **Lee KW**. 2010. Nuclear Export and Mitochondrial and ER-targeting of IGFBP-3 regulates its apoptotic properties. 2010 Mar 8;17(2):293-302. *Endocrine-Related Cancer*. PMID: 20228135.
27. Yamada PM, Mehta HH, Hwang D, Roos KP, Hevener AL, **Lee KW**. 2010. Evidence of a Role for Insulin-Like Growth Factor Binding Protein (IGFBP)-3 in Metabolic Regulation. *Endocrinology*. 2010 Oct 6;. [Epub ahead of print] PMID: 20926583

Manuscripts in Preparation

1. Paharkova-Vatchkova V, Liu JL, Wang C, **Lee KW**. A BH3-only domain in IGFBP-3 mediates Bax binding and activation.
2. Yamada PM, Mehta HH, Paharkova-Vatchkova V, Lee A, **Lee KW**. Endoplasmic Reticulum Interactions with Grp78 via a BH3-only domain in IGFBP-3 impair insulin-stimulated glucose transport in 3T3L1-adipocytes.

Book Chapters

Chang Hoftman A, Hernandez MI, Lee KW, Steihn ER. 2008. In Press. Newborn illnesses caused by transplacental antibodies. *Advances in Pediatrics*.

Lee, KW. Thyroid Cancer in Children. 2008. In Press. In *Manual of Endocrinology and Metabolism*, 4th ed. Ed. N. Lavin. Lipincott, Philadelphia.

Oral Presentations

Lee, K., Rice, K., Kinsley, K., and B.L. Taylor. 1989. Sequencing the mHA Gene (Bacterial Chemotaxis). Presented at the American Society of Microbiology, Atlanta, GA, June 1989.

Lifshutz, J., Lee, K.-W., Perkin, R., Won, D. A modified cranial reduction using circumferential barrel stave wedge osteotomies. The section on Pediatric Neurological Surgery of AAN/CNS. Atlanta, GA. December 1999.

Won, D.J., Lee, K.-W., Sherwin, T. An alternate technique to close neurosurgical incisions using octylcyanoacrylate adhesive. The section on Pediatric Neurological Surgery of AANS/CNS. Atlanta, GA. December 1999.

Lee KW, Ma L, Mascarhenas D, Cohen P. Insulin-like Groth Factor Binding Protein-3 (IGFBP-3) Induces Colon Cancer Cell Death by a p53-related mechanism involving Nuclear Interactions. Society for Pediatric Research/Lawson Wilkins Pediatric Endocrine Society. Baltimore, MD. May 2002.

Lee KW, Ma L, Li H, Liu BR, Peehl D, Zhang X-K, Cohen P. Insulin-like Growth Factor Binding Protein-3 (IGFBP-3) Induces Rapid Nucleo-Mitochondrial Translocation of the Orphan Nuclear Receptor TR3 Leading to Cell Death in Prostate Cancer Cells. The Endocrine Society. San Francisco, CA. June 2002

Lee KW, Ma L, Liu B, Peehl DM, Zhang X-k, Cohen P. A Novel, Rapid, Non-Transcriptional Mechanism of Insulin-like Growth Factor Binding Protein-3 – Induced Apoptosis. First Joint Symposium GH-IGF Society. Boston, MA. October 2002.

Ikonen M, Liu B, Hashimoto Y, Ma L, Lee KW, Nishimoto I, Cohen P. The Novel Anti-Apoptotic Peptide Humanin Binds to IGFBP-3 and Inhibits IGFBP-3-Induced Apoptosis. First Joint Symposium GH-IGF Society. Boston, MA. October 2002.

Lee KW, Ma L, Liu B, Peehl DM, Zhang X-k, Cohen P. Insulin-like Growth

Factor Binding Protein-3 (IGFBP-3) Induces Apoptosis via Rapid RXR-dependent TR3 Mitochondrial Targeting in Cancer Cells. Pediatric Academic Societies'/Lawson Wilkins Pediatric Endocrine Society Annual Meeting. Seattle, WA. May 2003.

Lee, KW, Ma L, Liu B, Peehl DM, Zhang XK, Cohen P. Requirement for the nuclear receptor Nur77 in the apoptotic actions of IGFBP-3 *in vitro* and *in vivo*. Second International GH-IGF Symposium. Cairns, Australia. April 2004.

Lee, KW, Ma L, Liu B, Peehl DM, Zhang XK, Cohen P. Insulin-like Growth Factor Binding Protein-3 (IGFBP-3) translocates RXR α /Nur77 heterodimers to mitochondria and synergizes with Nur77 effects in prostate cancer *in vitro* and *in vivo*. Child Health Research Centers Annual Retreat. Ann Arbor, MI. October 2004

Lee KW. Insulin-like Growth Factor Binding Protein-3 as a Cancer Therapy. Endocrine Society, Oral Symposium. San Diego, CA June 2005.

Park, P and Lee KW. Humanin, a potential beta cell survival factor. Endocrine Society, Oral Presentation. Boston, MA . June 2006

Park, P and Lee KW. The Neuro-Survival Peptide, Humanin, Protects β Cells from Apoptosis *in vitro* and Improves Glucose Tolerance in the NOD Model *in vivo*. Oral Presentation, Third International Congress of the GRS and IGF Society Meeting, Kobe, Japan. November 2006

Lee KW. Delay of Diabetes by Humanin in the NOD mouse. Invited Oral Symposium. Korean Endocrine Society. Seoul, Korea. April 2007.

Yamada P, Lee KW. Novel Insights into Metabolism Utilizing IGFBP-3 KO mice. GRS/IGF 4th International Congress. Genova, Italy. September 2008.

Lee KW. Contribution of the Growth Hormone/Insulin-Like Growth Factor Axis in the Pathophysiology of Hepatic Steatosis. JOINT SYMPOSIUM Southern California Research Center for ALPD and Cirrhosis *and* UCSD Diabetes and Endocrinology Research Center. Los Angeles, CA. December 2009.

Lee KW. Characterization of a putative "BH3-like" domain establishes IGFBP-3 as a unique intrinsic pathway activator that integrates cell survival and death signals in the mitochondrial regulatory network. The Fifth International Congress of the GRS and IGF Society. New York, NY. October 2010.

Poster presentations

Lee, K.-W., Mohan, S., Baylink, D.J. and D.D. Strong. 1992. Transcriptional regulation of the human insulin-like growth factor binding protein-

4 gene. Oral presentation at the 2nd Annual MD-PhD Student Association Meeting, Aspen, CO, April 1992.

Lee, K., Sherwin, T., Won, D. J. An alternate technique to close neurosurgical incisions using octylcyanoacrylate adhesive. Loma Linda University School of Medicine Alumni Post Graduate Convention. Loma Linda, CA. March 2000.

Lee KW, Liu BR, Chen HW, Cohen P. IGFBP-3 Induces Apoptosis by Interaction with RXR and Inducing Nucleocytoplasmic Translocation of TR3 to Mitochondria. Introduction to Molecular and Cellular Research, The Endocrine Society, Miami, FL, March 2001.

Ma L, Mascarhenas D, Cohen P, Lee KW. Insulin-like Groth Factor Binding Protein-3 (IGFBP-3) Induces Colon Cancer Cell Death by a p53-related mechanism involving Nuclear Interactions. American Association for Cancer Research. April 2002.

Stiehm ER, Lee KW, Hernandez MI, Hoftman AC. Historical Perspective: Newborn illnesses caused by Transplacental Antibodies. Soceity for Pediatric Research, Honolulu, HI. April 2008.

Hoang PT, Cobb LJ, Cohen P, Lee KW. Humanin Protects beta cells from cytokine-induced apoptosis via ERK and Stat3 activation. Endocrine Society Annual Meeting, San Francisco, CA. June 2008.

Mehta HH, Dwang DL, Sohn JJ, Lue YH, Wang C, Said J, Cohen P, Lee KW. IGFBP-3 is Essential of Prostate Apoptosis Induced by Androgen Deprivation. Endocrine Society Annual Meeting, San Francisco, CA. June 2008.

Yamada PM, Mehta HH, Hwang DL, Cohen P, Lee KW. Genetic Deletion of IGFBP-3 Alters Diet-induced Obesity Associated Inflammatory Markers *in vivo*. Endocrine Society Annual Meeting, San Francisco, CA. June 2008.

Paharkova-Vatchkova V, Lee KW. Identification of a Nuclear Export Sequence (NES) within IGFBP-3 and its Contribution to Apoptosis. Endocrine Society Annual Meeting, San Francisco, CA. June 2008.

Joshi A, Yamada PM, Scherer PE, Lee KW. IGFBP-3 Interacts with Adiponectin and Modulates Reponse to Diet-induced Obesity. Endocrine Society Annual Meeting, San Francisco, CA. June 2008.

Yamada P, Mehta H, Hevenar A, Hwang D, Cohen P, Lee KW. Hepatic Steatosis in IGFBP-3 Knockout Mice. Gordon Research Conference on Insulin-Like Growth Factors In Physiology & Disease. Ventura, CA. March 2009

Yamada P, Mehta H, Hevenar A, Hwang D, Cohen P, Lee KW. Insulin Sensitivity and Metabolic Alterations in IGFBP-3 deficient Mice. Lawson Wilkins Pediatric Endocrinology / European Society for Pediatric Endocrinology Joint Meeting. New York, NY. September 2009.