

CURRICULUM VITAE

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Department of Biomedical Science, CHA University
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ACADEMIC EMPLOYMENT

| | |
|------------------------------|--|
| July. 1, 2014 – present | Research Professor Department of Biomedical Science, CHA University, Korea |
| Sep. 1, 2009 – Jun. 30, 2014 | Research Assistant Professor Severance Integrative Research Institute for Cerebral & Cardiovascular Diseases, Yonsei University Health System, Korea |
| Jul. 1, 2007 – Aug. 12, 2009 | Postdoctoral Associate Department of Biochemistry and Molecular Biology, Baylor College of Medicine, USA |
| Jan. 1, 2007 – Jun. 30, 2007 | Postdoctoral Associate Department of Pharmacology, Baylor College of Medicine, USA |
| Jan. 1, 2004 – Dec. 31, 2006 | Postdoctoral Fellow Department of Neuro-Oncology, The University of Texas MD Anderson Cancer Center, USA |
| Jan. 6, 2003 – Dec. 31, 2003 | Postdoctoral Fellow Department of Thoracic/Head and Neck Medical Oncology, The University of Texas MD Anderson Cancer Center, USA |
| Sep. 1, 2000 – Nov. 30, 2002 | Research Associate (Post Doc.) Division of Molecular Life Sciences and Center for Cell Signaling Research, Ewha Womans University, Korea |
| Apr. 1, 1998 - Jan. 31, 2000 | Researcher Institute of Environment and Life Science Hallym University, Korea |
| May 1995 – April 1996 | Assistant |

Research Institute of Genetic Engineering
Pusan National University, Korea

EDUCATION

1989-1993 **B.S.** Molecular Biology
Pusan National University, Pusan, Korea

1993-1995 **M.S.** Molecular Biology
Pusan National University, Pusan, Korea
Advisor: Kyu-Won Kim, Ph.D.
Thesis Title: Identification of angiogenic components
from Aloe vera

1995-2000 **Ph.D.** Molecular Biology
Pusan National University, Pusan, Korea
Advisor: Kyu-Won Kim, Ph.D., Young-Geun Kwon, Ph.D.
Dissertation Title: Angiogenic action and signaling mechanism of
sphingosine-1-phosphate in human umbilical vein endothelial cells

SCHOLARSHIPS AND AWARDS

1993 Award for graduating with top honors

1995 - 1996 Scholarship student of Seouam Foundation

RESEARCH AREA OF SPECIALTY

Angiogenesis or Vascular Biology
Tumor Biology
Cellular or Molecular Mechanism of Human Diseases Related with Vessels

RESEARCH GRANT

Title: Development of germ cells from induced pluripotent stem cells
Role: Cooperative PI
Source: National Research Foundation of Korea, Ministry of Education, Science and Technology
Funding date: Closed (2009. 9. 1. – 2012. 8. 31.)

Title: A Protein-protein Interaction Network for Telomere Maintenance Using Bimolecular
Fluorescence Complementation Array Screening System (2010-0004950)
Role: PI
Source: National Research Foundation of Korea, the Ministry of Education, Science and
Technology
Funding date: Closed (2010. 5. 1. – 2013. 4. 30.)

Title: Protective role of sirtuin 6 against endothelial dysfunction and senescence
(2013R1A1A3011197)
Role: PI
Source: Basic Science Research Program through the National Research Foundation of Korea
(NRF) funded by the Ministry of Science, ICT and Future Planning

Funding date: closed (2013. 6. 1. – 2016. 5. 31.)

Title: Role of chromatin remodeling factor CFP1 in vasculogenesis and angiogenesis (2015R1D1A1A01059619)

Role: PI

Source: Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education

Funding date: open (2015. 11. 1. – 2018. 10. 31.)

PUBLICATIONS

1. Jang H*, **Lee OH***, Lee Y, Yoon H, Chang EM, Park M, Lee JW, Hong K, Kim JO, Kim NK, Ko JJ, Lee DR, Yoon TK, Lee WS, Choi Y. Melatonin prevents cisplatin-induced primordial follicle loss via suppression of PTEN/AKT/FOXO3a pathway activation in the mouse ovary. *J Pineal Res.* 60(3):336-47. doi: 10.1111/jpi.12316. (2016). (*, authors equally contributed).
2. Park M, Lee Y, Jang H, **Lee OH**, Park SW, Kim JH, Hong K, Song H, Park SP, Park YY, Ko JJ, Choi Y. SOHLH2 is essential for synaptonemal complex formation during spermatogenesis in early postnatal mouse testes. *Sci Rep.* doi: 10.1038/srep20980. (2016)
3. Nam HS, Kwon I, Lee BH, Kim H, Kim J, An S, **Lee OH**, Lee PH, Kim HO, Namgoong H, Kim YD, Heo JH. Effects of Mesenchymal Stem Cell Treatment on the Expression of Matrix Metalloproteinases and Angiogenesis during Ischemic Stroke Recovery. *PLoS One.* 10(12):e0144218 (2015).
4. **Lee OH**, Lee J, Lee KH, Woo YM, Kang J, Yoon H, Bae S, Songyang Z, Oh SH, Choi Y. Role of the focal adhesion protein TRIM15 in colon cancer development. *Biochim Biophys Acta.* 1853(2):409-421 (2015).
5. Cha JH, Wee HJ, Seo JH, Ahn BJ, Park JH, Yang JM, Lee SW, **Lee OH**, Lee HJ, Gelman IH, Arai K, Lo EH, Kim KW. Prompt meningeal reconstruction mediated by oxygen-sensitive AKAP12 scaffolding protein after central nervous system injury. *Nat Commun.* 5:4952 doi: 10.1038/ncomms5952 (2014).
6. Lee SK, Yang SH, Kwon I, **Lee OH***, Heo JH*. Role of tumour necrosis factor receptor-1 and nuclear factor- κ B in production of TNF- α -induced pro-inflammatory microparticles in endothelial cells. *Thromb Haemost.* 112 (3): 580-588 (2014). (*, co-corresponding author).
7. Cha JH, Wee HJ, Seo JH, Ahn BJ, Park JH, Yang JM, Lee SW, Kim EH, **Lee OH**, Heo JH, Lee HJ, Gelman IH, Arai K, Lo EH, Kim KW. AKAP12 Mediates Barrier Functions of Fibrotic Scars during CNS Repair. *PLoS One.* 9(4): e94695 (2014).
8. Bae YH, Ryu JH, Park HJ, Kim KR, Wee HJ, **Lee OH**, Jang HO, Bae MK, Kim KW, Bae SK. Mutant p53-Notch1 Signaling Axis Is Involved in Curcumin-Induced Apoptosis of Breast Cancer Cells. *Korean J Physiol Pharmacol.* 17(4):291-297 (2013).

9. **Lee OH**, Kim J, Kim JM, Lee H, Kim EH, Bae SK, Choi Y, Nam HS, Heo JH. Decreased expression of sirtuin 6 is associated with release of high mobility group box-1 after cerebral ischemia. Biochem Biophys Res Commun. 438(2): 388-394 (2013)
10. Kim J, Song TJ, Yang SH, **Lee OH**, Nam HS, Kim YD, Kim EH, Lee HS, Nam CM, Heo JH. Plasma osteoprotegerin levels increase with the severity of cerebral artery atherosclerosis. Clin Biochem. 46 (12): 1036-1040 (2013)
11. Song TJ, Kim J, Yang SH, Park JH, Lee HS, Nam CM, **Lee OH**, Kim YD, Nam HS, Heo JH. Association of plasma osteoprotegerin levels with stroke severity and functional outcome in acute ischaemic stroke patients. Biomarkers. 17(8):738-44 (2012)
12. Oh SH*, Kim WY*, **Lee OH*** and Lee HY. Insulin-like growth factor binding protein-3 suppresses VEGF expression and inhibits head and neck squamous cancer cell tumor angiogenesis. Cancer Sci. 103(7):1259-66 (2012) (*, authors equally contributed)
13. Son M, Park I, **Lee OH**, Rhee I, Park C, Yun Y. LIME mediates immunological synapse formation through activation of VAV. Mol Cells. 33:407-14 (2012)
14. Oh SH, Kang JH, Woo JK, **Lee OH**, Kim ES, Lee HY. A multiplicity of anti-invasive effects of the farnesyl transferase inhibitor in human head and neck cancer. Int J Cancer. 131:537-547 (2012)
15. Kim JH, Choi DS, **Lee OH**, Oh SH, Lippman SM, and Lee HY. Antiangiogenic antitumor activities of IGFBP-3 are mediated by IGF-independent suppression of Erk1/2 activation and Egr-1-mediated transcriptional events. Blood. 118: 2622-2631 (2011)
16. Jun KY, Lee EY, Jung MJ, **Lee OH**, Lee ES, Park Choo HY, Na Y, Kwon Y. Synthesis, biological evaluation, and molecular docking study of 3-(3'-heteroatom substituted-2'-hydroxy-1'-propyloxy) xanthone analogues as novel topoisomerase IIa catalytic inhibitor. Eur J Med Chem. 46:1964-1971 (2011)
17. Park SY, Lee YH, Choi KC, Seong AR, Choi HK, **Lee OH**, Hwang HJ, Yoon HG. Grape seed extract regulates androgen receptor-mediated transcription in prostate cancer cells through potent anti-histone acetyltransferase activity. J Med Food 14:9-16 (2011)
18. **Lee OH**, Kim H, He Q, Baek HH, Yang D, Chen LY, Liang J, Chae HK, Safari A, Liu D and Songyang Z. Genome-wide YFP fluorescence complementation screen identifies new regulators for telomere signaling in human cells. Mol Cell Proteomics. 10:M110.001628 (2011)
19. Liu D, Martin V, Fueyo J, **Lee OH**, Xu J, Cortes-Santiago N, Alonso MM, Aldape K, Colman H and Gomez-Manzano C. Tie2/TEK modulates the interaction of glioma and brain tumor stem cells with endothelial cells and promotes an invasive phenotype. Oncotarget. 1: 700-709 (2010)
20. Choi M*, **Lee OH***, Jeon S, Park M, Lee DR, Ko JJ, Yoon TK, Rajkovic A, and Choi Y. The oocyte-specific transcription factor, Nobox, regulates the expression of Pad6, a peptidylarginine deiminase in the oocyte. FEBS Lett. 584: 3629-3634 (2010) (*, authors equally contributed)

21. Choi Y, Jeon S, Choi M, Lee MH, Park M, Lee DR, Jun KY, Kwon Y, **Lee OH**, Song SH, Kim JY, Lee KA, Yoon TK, Rajkovic A, and Shim SH. Mutations in SOHLH1 Gene Associate with Non-obstructive Azoospermia. Hum Mutat. 31: 788-793 (2010)
22. Kim HC, Choi KC, Choi HK, Kang HB, Kim MJ, Lee YH, **Lee OH**, Lee J, Kim YJ, Jun W, Jeong JW, and Yoon HG. HDAC3 selectively represses CREB3-mediated transcription and migration of metastatic breast cancer cells. Cell Mol Life Sci. 67: 3499-3510 (2010)
23. Yoo JY, Choi KC, Kang H, Kim YJ, Lee J, Jun WJ, Kim MJ, Lee YH, **Lee OH**, and Yoon HG. Histone deacetylase 3 is selectively involved in L3MBTL2-mediated transcriptional repression. FEBS Lett. 584: 2225-2230 (2010)
24. Choi Y, Lee H, Heo JH, and **Lee OH**. Telomere dysfunction and cancer. Cancer Prevention Research. 15: 28-33 (2010)
25. Martin V, Xu J, Pabbisetty SK, Alonso MM, Liu D, **Lee OH**, Gumin J, Bhat KP, Colman H, Lang FF, Fueyo J, and Gomez-Manzano C. Tie2-Mediated Multidrug Resistance in Malignant Gliomas is Associated with Upregulation of ABC Transporters. Oncogene. 28: 2358-2363 (2009)
26. Kim H*, **Lee OH***, Xin H*, Chen LY, Qin J, Chae HK, Safari A, Liu D, and Songyang Z. TRF2 functions as a protein hub and mediates diverse cellular responses by recognizing specific peptide motifs. Nat Struct Mol Biol 16: 372-379 (2009) (*, authors equally contributed).
27. Xie YB, **Lee OH**, Nedumaran B, Seong HA, Lee KM, Ha H, Lee IK, Yun Y, Choi HS SMILE, a new orphan nuclear receptor SHP interacting protein, regulates SHP-repressed estrogen receptor transactivation. Biochem J 2008, 416:463-473.
28. **Lee OH**, Xu J, Fueyo J, Alonso MM, Liu D, Martin V, Jiang H, Piao, Y, Liu TJ and Gomez-Manzano C. Angiopoietin-2 decreases vascular endothelial growth factor expression by modulating HIF-1 α levels in gliomas. Oncogene 2008, 27:1310-1314. 7.216
29. **Lee OH**, Jain AK, Papusha V, and Jaiswal, AK. An auto-regulatory loop between stress sensors INrf2 and Nrf2 controls their cellular abundance. J Biol Chem 2007, 282:36412-36420.
30. **Lee OH**, Fueyo J, Xu J, Fuller GN, Alonso MM, Piao Y, Lang FF, Bekele NB, Yung WKA, and Gomez-Manzano C. Expression levels of the receptor tyrosine kinase Tie2 modulate integrin α 1-mediated cell adhesion and are associated with glioma progression. Mol Cancer Res 2006, 4: 915-926.
31. Oh SH*, **Lee OH***, Schroeder CP, Oh YW, Ke S, Cha HJ, Park RW, Onn A, Herbst RS, Li C, and Lee HY. Antimetastatic activity of IGFBP-3 in lung cancer is mediated by IGF-independent uPA inhibition. Mol Cancer Ther, 2006, 5: 2685-2695 (*, authors equally contributed).
32. Jiang H, Olson MV, Medrano DR, **Lee OH**, Xu J, Piao Y, Alonso MM, Gomez-Manzano C, Hung M-C, Yung WKA, and Fueyo J. A novel CRM1-dependent nuclear export signal in adenoviral E1A that is regulated by phosphorylation. FASEB J 2006, 20: 2603-2605.

33. **Lee OH**, Fueyo J, Xu J, Yung WKA, Lemoine MG, Lang FF, Bekele BN, Zhou X, Alonso MA, Aldape KD, Fuller GN, Gomez-Manzano C. Sustained angiopoietin-2 expression disrupts vessel formation and inhibits glioma growth. Neoplasia, 2006, 9: 419-428.
34. Alonso MM, Fueyo J, Shay JW, Aldape KD, Jiang H, **Lee OH**, Johnson DG, Xu J, Kondo Y, Kanzawa T, Kyo S, Bekele BN, Zhou X, Nigro J, McDonald M, Yung WKA, Gomez-Manzano C. E2F1 and telomerase expression in glioblastomas: mechanistic linkage and prognostic significance. J Natl Cancer Inst, 2005, 97:1589-1600.
35. Jiang H, Alemaby R, Gomez-Manzano C, Medrano DR, Lemoine MG, Olson MV, Alonso MM, **Lee OH**, Conrad CC, Yung WK, Fueyo J. Downmodulation of E1A protein expression as a novel strategy to design cancer-selective adenoviruses. Neoplasia, 2005, 7:723-729.
36. Lee YM, Bae MH, **Lee OH**, Moon EJ, Moon CK, Kim WH, Kim KW. Synergistic induction of in vivo angiogenesis by the combination of insulin-like growth factor-II and epidermal growth factor. Oncol Rep, 2004, 12:843-848.
37. Hur EM, Son M, **Lee OH**, Choi YB, Park C, Lee H and Yun Y. LIME, a novel transmembrane adaptor protein, associates with p56lck and mediates T cell activation. J Exp Med, 2003, 198: 1463-1473.
38. Bae MH, Bae SK, **Lee OH**, Kwon YW, Kim MB, Oh CK, Jang HS, Kwon KS, and Kim KW. Regulation of angiogenic activity of insulin-like growth factor II (IGF-II) in chick chorioallantoic membrane. Journal of Korean Association of Cancer Prevention, 2002, 7: 19-26.
39. **Lee OH**, Bae SK, Bae MH, Lee YM, Moon EJ, Cha HJ, Kwon YG and Kim KW. Identification of angiogenic properties of insulin-like growth factor II in in vitro angiogenesis models. British J Cancer, 2000, 82: 385-391.
40. **Lee OH**, Lee DJ, Kim YM, Kim YS, Kwon HJ, Kim KW, and Kwon YG. Sphingosine 1-phosphate stimulates tyrosine phosphorylation of focal adhesion kinase and chemotactic motility of endothelial cells via the G_i protein-linked phospholipase C pathway. Biochem Biophys Res Commun, 2000, 268: 47-53.
41. Kim YM, Jang JW, **Lee OH**, Yeon J, Choi EY, Kim KW, Lee ST, and Kwon YG. Endostatin inhibits endothelial and tumor cellular invasion by blocking the catalytic activities of membrane-type 1 matrix metalloproteinase (MT1-MMP) and matrix metalloproteinase-2 (MMP-2). Cancer Res, 2000, 60: 5410-5413.
42. **Lee OH**, Kim KW, and Kwon YG. Shingosine 1-phosphate-induced angiogenesis involves Src protein kinases activated by phospholipase C-Ca²⁺ signaling in human endothelial cells. Journal of Korean Association of Cancer Prevention, 1999, 4: 173-179 (Written in English).
43. **Lee OH**, Kim YM, Lee YM, Moon EJ, Lee DJ, Kim JH, Kim KW, and Kwon YG. Sphingosine 1-phosphate induces angiogenesis: its angiogenic action and signaling mechanism in human umbilical vein endothelial cells. Biochem Biophys Res Commun, 1999, 264: 743-750.

44. Bae SK, Bae MH, Ahn MY, Son MJ, Lee YM, Bae M-K, **Lee O-H**, Park BC, and Kim K-W. Egr-1 mediates transcriptional activation of IGF-II gene in response to hypoxia. Cancer Res, 1999, 59: 5989-5994.
45. Moon EJ, Lee YM, **Lee OH**, Lee MJ, Lee SK, Chung MH, Park Yi, Sung CK, Choi JS and Kim KW. A novel angiogenic factor derived from *Aloe vera* gel :beta-sitosterol, a plant sterol. Angiogenesis, 1999, 3: 117-123.
46. Bae SK, Baek JH, Lee YM, **Lee OH**, and Kim KW. Hypoxia-induced apoptosis in human hepatocellular carcinoma cells: A possible involvement of the 6-TG-sensitive protein kinase(s)-dependent signaling pathway. Cancer Lett, 1998, 126: 97-104.
47. Kim KW, Bae SK, **Lee OH**, Bae MH, Lee MJ and Park BC. Insulin-like growth factor II (IGF-II) induced by hypoxia may contribute to angiogenesis of human hepatocellular carcinoma. Cancer Res, 1998, 15: 348-351.
48. Bae MH, Bae SK, **Lee OH**, Lee MJ, Park BC and Kim KW. Insulin-like growth factor II (IGF-II) secreted from HepG2 human hepatocellular carcinoma cell shows angiogenic activity. Cancer Lett, 1998, 128: 41-46.
49. Lee MJ, **Lee OH**, Yoon SH, Lee SK, Chung MH, Park Yi, Sung CK, Choi JS and Kim KW. *In vitro* angiogenic activity of *Aloe vera* gel on calf pulmonary artery endothelial (CPAE) cells. Arch Pharm Res, 1998, 21: 260-265.
50. Cha HJ, Bae SK, Lee HY, **Lee OH**, Sato H, Seiki M, Park BC and Kim KW. Anti-invasive activity of ursolic acid correlates with the reduced expression of matrix metalloproteinase-9 (MMP-9) in HT1080 human fibrosarcoma cells. Cancer Res, 1996, 56: 2281-2284.
51. **Lee OH**, Kim JS, Shim KH, Kim KW and Chung HY. Effect of human milk on the angiogenesis and endothelial cell growth. Kor J Life Science, 1995, 5: 117-120.
52. Sohn KH, **Lee OH**, Lee YN, Chung HY, Lee J-J, and Kim K-W. Anti-angiogenic activity of ursolic acid. YakHak Hoeji, 1993, 5: 532-537.

LECTURES

Invited speaker. "Telomere Interactome: a molecular niche for telomere signaling in human cells" Oral Cancer Research Institute, Yonsei University College of Dentistry, Seoul, Korea, May, 2010.

Invited speaker. "Role of sirtuins in brain ischemia" 3rd SIRIC-NCVC Joint Symposium, Seoul, Korea, November 11, 2011.

Invited speaker. "The Dual Function of TRIM as Telomere Binding Factor in Nucleus and Focal Adhesion Component in Cytoplasm" Yaksan Symposium. July 14, 2011.

Invited speaker. "Tripartite motif-containing protein 15 (TRIM15), a novel component of focal adhesions that suppresses cellular motility" School of Life Science, Sun Yat-sen University, Guangzhou,

China. June 11, 2013.

Invited speaker. "Role of sirtuins in vascular diseases" Seoul Brain Barrier Symposium. Seoul, Korea. December 5, 2013.

CONFERENCE PRESENTATIONS AND PROCEEDINGS

2013. 9. 13. Lee OH, Kim J, Kim JM, Lee H, Kim EH, Bae SK, Choi Y, Nam HS, Heo JH. "Sirtuin 6 expression and its association with release of high mobility group box-1 after cerebral ischemia" 2013 SIRIC Symposium, Seoul, Korea.

2013. 9. 13. Lee OH, Woo YM1, Kim JM, Lee SK, Heo JH. "Sirtuin 6 Prevents Endothelial Cell Senescence via Forkhead Box Protein" 2013 SIRIC Symposium, Seoul, Korea.

2013. 9.13. Lee SK, Yang SH, Lee OH, Heo JH. "TNF- α induces endothelial cell-derived microparticles as major bioactive cargos through the activation of TNFR1" 2013 SIRIC Symposium, Seoul, Korea.

2013. 10. 9. Woo YM, Kim JM, Lee SK, Heo JH, Lee OH. "Sirtuin 6 is an anti-senescence factor in endothelial cells" International Conference of the Korean Society for Molecular and Cellular Biology. Seoul, Korea.

2014. 04. 14. Lee OH, Woo YM1, Kim JM, Lee SK, Heo JH. "Sirtuin 6 Inhibits Cellular Senescence Via Forkhead Box Protein in Human Endothelial Cells." The 18th International Vascular Biology Meeting. Kyoto, Japan.

REFEREE AND REVIEWER EXPERIENCES

2013. 8. 29. Reviewer for BMB Reports

2014. 3. 3. Reviewer for NeuroReport

MEMBERSHIP IN PROFESSIONAL ASSOCIATION

Member, KSBMB (Korean Society for Biochemistry and Molecular Biology)

Member, KSMCB (Korean Society for Molecular and Cellular Biology)

SERVICE ACTIVITIES

Committee activity