

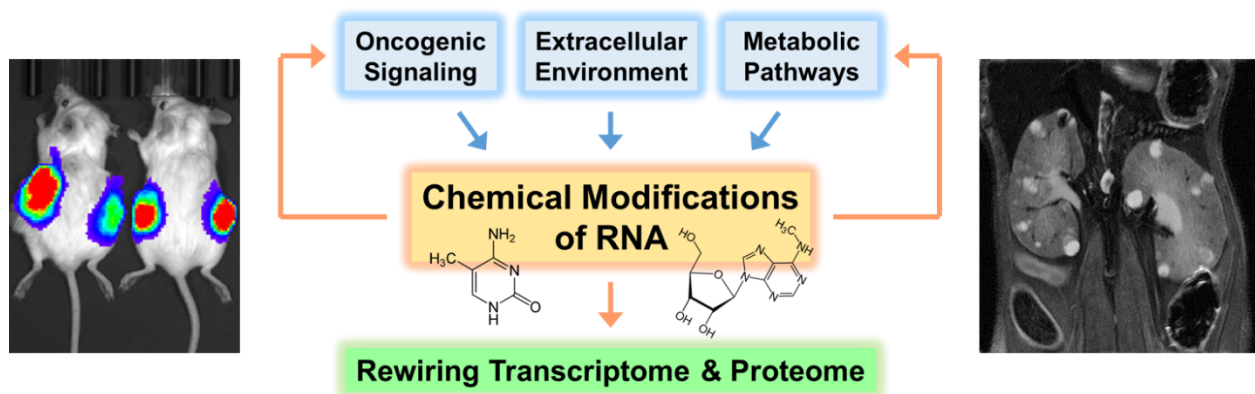
## Postdoctoral positions available in RNA metabolism lab

Gina Lee's lab at University of California, Irvine is looking for postdoctoral candidates who will study RNA metabolism. The Lee lab uses molecular biological and mass spectrometry approaches to study signal transduction and metabolic networks that rewire RNA biogenesis in physiological and pathological conditions including cancer. Please visit our website: <https://sites.uci.edu/ginalee/>.

Our current focus is to identify oncogenic signaling and metabolic pathways that control chemical modifications of RNA; and to reveal how the RNA epitranscriptomic landscapes influence transcriptome and proteome that govern cell growth, survival and differentiation. Successful candidates are expected to have one of the below expertise:

1. Molecular biology and biochemistry
2. RNA biology and bioinformatics
3. Cancer metabolism
4. Mouse models of cancer

Please send your letter of interest, CV/resume and contact information for three references to [ginalee@uci.edu](mailto:ginalee@uci.edu).



**Gina Lee, PhD**  
**Assistant Professor**  
**UC Irvine School of Medicine**  
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## Research

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RNA processing and quality control are pivotal nodes of gene expression control during cell fate decision and disease development. However, little is known about how this process is regulated by upstream signaling networks. My scientific focus is to reveal how signal transduction and metabolic pathways control RNA biogenesis in the context of human cancer. Our previous works revealed that the mitogen and nutrient-dependent, oncogenic mTORC1 signaling pathway promotes glutaminolysis and lipid synthesis by enhancing RNA translation and splicing of key metabolic enzymes, thereby supporting tumor growth. We currently study another important, yet poorly understood RNA processing, the chemical modification of RNA. We investigate 1) how oncogenic signaling and metabolic pathways control chemical modifications of RNA; and 2) how the epitranscriptomic landscapes influence the global transcriptome and proteome to govern cell growth, survival and differentiation. We will uncover new, exciting links between signal transduction, cellular metabolism, and the epitranscriptomic landscape of cells and organisms, inspiring novel therapeutic avenues for human diseases.

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## Education and Positions

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<b>2020-</b>	Assistant Professor, Dept. of Microbiology and Molecular Genetics and Chao Family Comprehensive Cancer Center, UC Irvine School of Medicine
<b>2018-2019</b>	Instructor, Dept. of Pharmacology and Meyer Cancer Center, Weill Cornell Medicine, Cornell University
<b>2012-2017</b>	Postdoctoral Fellow, Harvard Medical School and Weill Cornell Medicine
<b>2006-2011</b>	PhD, Korea Advanced Institute of Science and Technology (KAIST) and Seoul National University
<b>2002-2005</b>	BS, Dept. of Biological Science, KAIST

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## Fellowships and Grants

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<b>2014-2017</b>	Postdoctoral Fellowship, Lymphangi leiomyomatosis (LAM) Foundation, USA
<b>2013-2015</b>	Postdoctoral Fellowship, Tuberous Sclerosis Complex (TSC) Alliance, USA
<b>2012-2013</b>	Postdoctoral Fellowship, National Research Foundation, Korea
<b>2006-2010</b>	Excellent Graduate Scholarship, KAIST
<b>2002-2005</b>	Superior Academic Performance Scholarship, KAIST

## Awards and Honors

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- 2019** Invited Talk, New England Bioscience Society, MA, USA
- 2019** Selected Oral Presentation, FASEB: Protein Kinase and Phosphorylation, CA, USA
- 2019** Breakout Prize for Junior Investigators, NY, USA
- 2019** Invited Talk, Starr Cancer Consortium, Annual Symposium, NY, USA
- 2018** Travel Grant Award, International Conference of Korean Society for Molecular and Cellular Biology, Korea
- 2017** Selected Oral Presentation, Keystone Symposia: PI3K Pathway in Cancer, NM, USA
- 2016-2019** Co-leader, Tri-Institute Cancer Metabolism Meeting (Memorial Sloan Kettering Cancer Center, Rockefeller University, Weill Cornell Medicine), NY, USA
- 2016** Scientific Review Panel, TSC Alliance Research Grant, MD, USA
- 2015** Invited Talk, International TSC Conference, UK
- 2012-2014** Conference Organizing Committee, New England Bioscience Society, MA, USA
- 2011** Travel Grant Award, Asia-Pacific Drosophila Research Conference, Taiwan
- 2010** Best Poster Award, FASEB Conference, AMPK: Central Regulatory System in Metabolism & Growth, Japan
- 2007** Chair Fund Recipient, Gordon Research Conference, Cancer Models & Mechanisms, Switzerland

## Publications

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Park JH, **Lee G**, Blenis J. Structural insights into the activation of mTORC1 on the lysosomal surface. **Trends Biochem Sci.** (2020) (preview)

Zheng Y, Lin TY, **Lee G**, Paddock MN, Momb J, Cheng Z, Li Q, Fei DL, Stein BD, Ramsamooj S, Zhang G, Blenis J, Cantley LC. Mitochondrial one-carbon pathway supports cytosolic folate integrity in cancer cells. **Cell** (2018) 175:1546-1560.

Krishnamoorthy GP, Davidson N, Leach SD, Lowe SW, Zhao Z, **Lee G**, Landa I, Nagarajah J, Saqcena M, Singh K, Wendel HG, Dogan S, Tamarapu PP, Blenis J, Ghossein RA, Knauf JA, Rättsch G, Fagin JA. EIF1AX and RAS mutations cooperate to drive thyroid tumorigenesis through ATF4 and c-MYC. **Cancer Discovery** (2018) doi: 10.1158/2159-8290.CD-18-0606.

He L, Gomes AP\*, Wang X\*, Yoon SO\*, **Lee G**, Nagiec M, Cho S, Chavez A, Islam T, Yu Y, Asara JM, Couvillon A, Kim BY, Blenis J. mTORC1 promotes metabolic reprogramming by suppression of Foxk1 phosphorylation. **Mol. Cell** (2018) 70:949-960. \*co-second author

Jang C, Hui S, Lu W, Cowan AJ, Morscher RJ, **Lee G**, Liu W, Tesz GJ, Birnbaum MJ, Rabinowitz JD. The small intestine converts dietary fructose into glucose and organic acids. **Cell Metabolism** (2018) 27:351-361.

**Lee G**, Zheng Y\*, Cho S\*, Jang C, England C, Dempsey JM, Yu Y, Liu X, He L, Cavaliere PM, Chavez A, Zhang E, Isik M, Couvillon A, Dephoure NE, Blackwell TK, Yu JJ, Rabinowitz JD, Cantley LC, Blenis

J. Post-transcriptional regulation of de novo lipogenesis by mTORC1-S6K1-SRPK2 signaling. **Cell** (2017) 171:1545-1558. \*co-second author

Commentary: "SRPK2 acts downstream of mTORC1 to promote de novo lipogenesis" **Cancer Discovery** (2018).

"Intron splicing for lipid biosynthesis" **Science Signaling** (2018).

Wada S, Neinast M, Jang C, Ibrahim YH, **Lee G**, Babu A, Li J, Hoshino A, Rowe GC, Rhee J, Martina JA, Puertollano R, Blenis J, Morley M, Baur JA, Seale P, Arany Z. The tumor suppressor FLCN mediates an alternate mTOR pathway to regulate browning of adipose tissue. **Genes Dev.** (2016) 30:2551-2564.

Lai SS, Zhao DD, Cao P, Lu K, Luo OY, Chen WB, Liu J, Jiang EZ, Yu ZH, **Lee G**, Li J, Yu DC, Xu XJ, Zhu MS, Gao X, Li CJ, Xue B. PP2A $\alpha$  positively regulates mice liver regeneration termination through AKT/GSK3 $\beta$ /Cyclin D1 pathway. **J. Hepatology** (2016) 64:352-360.

Csibi A\*, **Lee G**\*, Yoon SO, Tong H, Ilter D, Elia I, Fendt SM, Roberts TM, Blenis J. The mTORC1/S6K1 pathway regulates glutamine metabolism through the eIF4B dependent control of c-Myc translation. **Curr. Biol.** (2014) 24: 2274-2280. \*co-first author

**Lee G**, Blenis J. Akt-ivation of RNA Splicing. **Mol. Cell** (2014) 53:519-520.

Kim H, Lee JM\*, **Lee G**\*, Bhin J\*, Oh SK, Kim K, Pyo KE, Lee JS, Yim HY, Kim KI, Hwang D, Chung J, Baek SH. DNA damage-induced ROR $\alpha$  is crucial for p53 stabilization and increased apoptosis. **Mol. Cell** (2011) 44:797-810. \*co-second author

**Lee G**, Liang C, Park G, Jang C, Jung JU\*, Chung J\*. UVRAG is required for organ rotation by regulating Notch endocytosis in Drosophila. **Dev. Biol.** (2011) 356:588-597. \*co-corresponding author

Sun D\*, **Lee G**\*, Lee JH\*, Kim H, Rhee H, Park S, Kim K, Kim Y, Kim BY, Hong J, Park C, Choy HE, Kim JH, Jeon YH, Chung J. A metazoan ortholog of SpoT hydrolyzes ppGpp and functions in starvation responses. **Nat. Struct. Mol. Biol.** (2010) 17:1188-1194. \*co-first author

Park J, **Lee G**, Chung J. The PINK1-Parkin pathway is involved in the regulation of mitochondrial remodeling process. **Biochem. Biophys. Res. Commun.** (2009) 378:518-523.

Hyun S\*, Lee JH\*, Jin H\*, Nam JW, Namkoong B, **Lee G**, Chung J, Kim VN. Conserved MicroRNA miR-8/miR-200 and its target USH/FOG2 control growth by regulating PI3K. **Cell** (2009) 139:1096-1108. \*co-first author

Jang C, **Lee G**, Chung J. LKB1 induces apical trafficking of Silnoo, a monocarboxylate transporter, in Drosophila melanogaster. **J. Cell Biol.** (2008) 183:11-17.

Lee SB, Kim S, Lee J, Park J, **Lee G**, Kim Y, Kim JM, Chung J. ATG1, an autophagy regulator, inhibits cell growth by negatively regulating S6 kinase. **EMBO Report** (2007) 8:360-365.

**Lee G**, Chung J. Discrete functions of rictor and raptor in cell growth regulation in Drosophila. **Biochem. Biophys. Res. Commun.** (2007) 357:1154-1159.