

Eunha Kim Ph.D.

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 Department of Immunology, Blavatnik Institute, Harvard Medical School
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EDUCATION

- Sep. 2012 – Aug. 2017 Ph.D., Metabolism Signaling Network Laboratory,
 Department of Biological Sciences, Korea Advanced Institute of
 Science and Technology (KAIST), Daejeon, Republic of Korea
 Advisor: Seyun Kim, Ph.D.
 Dissertation: Characterization of Roles for Inositol Polyphosphate
 Multikinase in the Regulation of Toll-like Receptor Signaling.
- Feb. 2010 – Feb. 2012 M.S., Cell Signaling Laboratory,
 School of Life Science, Handong Global University, Pohang,
 Republic of Korea
 Advisor: Chang-Kee Hyun, Ph.D.
 Dissertation: Inhibition of stearyl-CoA desaturase1 activates AMPK
 and exhibits beneficial metabolic effects *in vitro*.
- Mar. 2005 – Feb. 2010 B.S.,
 School of Life Science, Handong Global University, Pohang,
 Republic of Korea (*Cum Laude*)

RESEARCH EXPERIENCES

- Apr. 2018 – present Postdoctoral fellow, Harvard Medical School, U.S.A. (Advisor: Prof.
 Jun R. Huh)
- Sep. 2017 – Mar. 2018 Postdoctoral researcher, KAIST, Republic of Korea (Advisor: Prof.
 Seyun Kim)
- Sep. 2012 – Aug. 2017 Ph.D. studies, KAIST, Republic of Korea (Advisor: Prof. Seyun Kim)
- Feb. 2012 – Jul. 2012 Research assistant, Yonsei University College of Medicine, Republic
 of Korea (Advisor: Prof. Jae-woo Kim)
- Mar. 2010 – Feb. 2012 M.S. studies, Handong Global University, Republic of Korea (Advisor:
 Prof. Chang-Kee Hyun)
- Sep. 2010 – Feb. 2011 Visiting fellow, University of Wisconsin-Madison, U.S.A. (Advisor:
 Prof. James M. Ntambi)
- Jun. 2009 – Aug. 2009 Visiting fellow, University of Wisconsin-Madison, U.S.A. (Advisor:
 Prof. James M. Ntambi)
- Jul. 2008 Undergraduate student internship, Sungkyunkwan University,
 Republic of Korea (Advisor: Prof. Kyung-Kyu Kim)

HONORS and AWARDS

- 2021 Outstanding Postdoctoral Research Fellow Award, Harvard Medical School/ Harvard
 School of Dental Medicine
- 2021 Outstanding Postdoctoral Research Award, Association of Korean Neuroscientists

	(AKN)
2018 – 2019	Nurturing Next-generation Researcher fellowship, National Research Foundation of Korea
2017	Young investigators' session presentation award, The International Conference of the Korean Society for Molecular and Cellular Biology
2017	KSCB young scientist award, The Korean Society for Cell Biology
2015	Best poster presentation award, Brain Korea 21, KAIST
2014	Outstanding oral presentation award, Brain Korea 21, KAIST
2012 – 2015	Global Ph.D. fellowship, National Research Foundation of Korea
2012	Woo-Duk Yoon Duk-Byung Foundation Scholarship
2010 – 2012	The Kwanjeong Educational Foundation Scholarship
2007 – 2009	Merit-based Scholarship, Handong Global University

PROFESSIONAL SERVICE

2019 – 2020	37 th President, New England Bioscience Society (NEBS Korea)
2018 – 2019	Science Committee, New England Bioscience Society (NEBS Korea)

PUBLICATIONS

- Eunha Kim***, Donggi Paik*, Ricardo N. Ramirez, Delaney G. Biggs, Youngjun Park, Ho-Keun Kwon, Gloria B. Choi[†], Jun R. Huh[†] (2022) Maternal gut bacteria drive intestinal inflammation in offspring with neurodevelopmental disorders by altering the chromatin landscape of CD4⁺ T cells. *Immunity* 55(1):145-158 (*Featured article*) (*equally contributed to this work) ([†] co-corresponding authors)
 - *Highlighted in Preview*: Kristine E. Zengeler & John R. Lukens (2022) Maternal inflammation is hard for offspring to stomach. *Immunity* 55(1):6-8
- Donggi Paik*, Lina Yao*, Yancong Zhang, Sena Bae, Gabriel D. D'Agostino, **Eunha Kim**, Eric A. Franzosa, Julina Avila-Pacheco, Jordan E. Bisanz, Christopher K. Rakowski, Hera Vlamakis, Ramnik J. Xavier, Peter J. Turnbaugh, Randy S. Longman, Michael R. Krout, Clary B. Clish, Curtis Huttenhower, Jun R. Huh[†], A. Sloan Devilin[†] (2021) Human gut bacteria produce Th17-modulating bile acid metabolites. *Nature* *In press* (*equally contributed to this work) ([†] co-corresponding authors)
- Brian T. Kalish*[†], **Eunha Kim***, Benjamin Finander, Erin E. Duffy, Hyunju Kim, Casey K. Gilman, Yeong Shin Yim, Lilin Tong, Randal J. Kaufman, Eric C. Griffith, Gloria B. Choi, Michael E. Greenberg[†], Jun R. Huh[†] (2021) Maternal Immune Activation in Mice Disrupts Proteostasis in the Fetal Brain. *Nature Neuroscience* 24:204-213 (*equally contributed to this work) ([†] co-corresponding authors)
 - *Highlighted in News and Views*: Kristine E. Zengeler & John R. Lukens (2021) Inflammation stresses out brain development. *Nature Neuroscience* 24:155-157
- Hyunki Kim*, Byoung-Ha Yoon*, Chang-Myung Oh*, Joonyub Lee*, Kanghoon Lee, Heein Song, **Eunha Kim**, Kijong Yi, Mi-Young Kim, Hyeongseok Kim, Yong Kyung Kim, Eun-Hye Seo, Haejeong Heo, Hee-jin Kim, Junguee Lee, Jae Myoung Suh, Seung-Hoi Koo, Je Kyung Seong, Seyun Kim, Young Seok Ju, Minho Shong, Mirang Kim[†], Hail Kim[†] (2020) PRMT1 is required for the maintenance of mature β -Cell identity *Diabetes* 69(3):355-368 (*equally contributed to this work) ([†] co-corresponding authors)
- Saiyu Hang*, Donggi Paik*, Lina Yao, **Eunha Kim**, Trinath Jamma, Jingping Lu, Soyoung Ha,

- Brandon N. Nelson, Samantha P. Kelly, Lin Wu, Ye Zheng, Randy S. Longman, Fraydoon Rastinejad, A. Sloan Develin, Michael R. Krout, Michael A. Fischbach[†], Dan R. Littman[†], Jun R. Huh[†] (2020) Bile acid metabolites control Th17 and Treg cell differentiation. **Nature** 576:143-148 (*equally contributed to this work) ([†] co-corresponding authors)
6. **Eunha Kim** and Jun R. Huh (2019) NMD Takes the Immune Road to NDD. **Neuron** 104(4): 625-626 (Invited preview)
 7. Wooseob Kim, **Eunha Kim**, Hyungyu Min, Min Gyu Kim, Verena B. Eisenbeis, Amit K. Dutta, Igor Palvlovic, Henning J. Jessen, Seyun Kim[†], and Rho Hyun Seong[†] (2019) Inositol polyphosphates promote T cell-independent humoral immunity via the regulation of Bruton's tyrosine kinase. **Proceedings of the National Academy of Sciences of the U.S.A.** 116(26): 12952-12957 ([†] co-corresponding authors)
 8. **Eunha Kim**, Jiyeon Beon, Seulgi Lee, Seung Ju Park, Hyoungjoon Ahn, Min Gyu Kim, Jeong Eun Park, Wooseob Kim, Jae-Min Yuk, Suk-Jo Kang, Seung-Hyo Lee, Eun-Kyeong Jo, Rho Hyun Seong[†] and Seyun Kim[†] (2017). Inositol polyphosphate multikinase promotes Toll-like receptor-induced inflammation by stabilizing TRAF6. **Science Advances** 3, e1602296. ([†] co-corresponding authors)
 9. **Eunha Kim**, Hyoungjoon Ahn, Min-Gyu Kim, Haein Lee and Seyun Kim (2017) The expanding significance of inositol polyphosphate multikinase as a signaling hub. **Molecules and Cells** 40(5): 315-321 (Invited review article)
 10. Dong Eon Kim*, Mi-Jin Jang*, Young Ran Kim*, Joo-Young Lee, Eun Byul Cho, **Eunha Kim**, Yeji Kim, Mi Young Kim, Won-il Jeong, Seyun Kim[†], Yong-Mahn Han[†], Seung-Hyo Lee[†] (2017) Prediction of drug-induced immune-mediated hepatotoxicity using hepatocyte-like cells derived from human embryonic stem cells. **Toxicology** 387: 1-9. (*equally contributed to this work) ([†] co-corresponding authors)
 11. **Eunha Kim**, Jiyeon Beon, Seulgi Lee, Jina Park and Seyun Kim (2016) IPMK: A versatile regulator of nuclear signaling events. **Advances in Biological Regulation** 61: 25-32. (Invited review article)
 12. **Eunha Kim***, Richa Tyagi*, Joo-Young Lee, Jina Park, Young-ran Kim, Po Yu Chen, Jiyoung Y. Cha, Solomon H. Snyder[†] and Seyun Kim[†] (2013) Inositol polyphosphate multikinase is a coactivator for serum response factor-dependent induction of immediate early genes. **Proceedings of the National Academy of Sciences of the U.S.A.** 110(49): 19938-19943 (*equally contributed to this work) ([†] co-corresponding authors)
 13. Sun-Woo Kim, Kun-Young Park, Bobae Kim, **Eunha Kim** and Chang-Kee Hyun (2013) *Lactobacillus rhamnosus* GG improves insulin sensitivity and reduces adiposity in high-fat diet-fed mice through enhancement of adiponectin production. **Biochemical and Biophysical Research Communications** 431(2): 258-263.
 14. Yoo Jeong Lee, Eun Hee Ko, Ji Eun Kim, **Eunha Kim**, Hyemin Lee, Hyeonjin Choi, Jung Hwan Yu, Hyo Jung Kim, Je-Kyung Seong, Kyung-Sup Kim and Jae-woo Kim (2012) Nuclear receptor PPAR γ -regulated monoacylglycerol O-acyltransferase 1 (MGAT1) expression is responsible for the lipid accumulation in diet-induced hepatic steatosis. **Proceedings of the National Academy of Sciences of the U.S.A.** 109(34): 13656-13661.
 15. **Eunha Kim**, Jung-Han Lee, James M. Ntambi and Chang-Kee Hyun (2011) Inhibition of stearoyl-

CoA desaturase 1 activates AMPK and exhibits beneficial lipid metabolic effects *in vitro*. **European Journal of Pharmacology** 672(1-3): 38-44.

16. Eun-Do Kim, **Eunha Kim**, Jung-Han Lee and Chang-Kee Hyun (2011) Gly-Ala-Gly-Val-Gly-Tyr, a novel synthetic peptide, improves glucose transport and exerts beneficial lipid metabolic effects in 3T3-L1 adipocytes. **European Journal of Pharmacology** 650(1): 479-485.
17. Chang-Kee Hyun, Eun-Do Kim, Matthew T. Flowers, Xueqing Liu, **Eunha Kim**, Maggie Strable and James M. Ntambi (2010) Adipose-specific deletion of stearoyl-CoA desaturase 1 up-regulates the glucose transporter GLUT1 in adipose tissue. **Biochemical and Biophysical Research Communications** 399(4): 480-486.

PATENT

1. Seyun Kim, **Eunha Kim**, Jiyeon Beon (2017) Pharmaceutical composition for preventing or treating inflammatory diseases comprising inositol polyphosphate multikinase inhibitor as an active ingredient (application number: 10-2017-0001164; country: Republic of Korea; issuing institution: Korea Advanced Institute of Science and Technology).

ORAL PRESENTATIONS

1. **Eunha Kim**, and Jun R. Huh (2022) Neurological and immunological consequences of heightened inflammation during pregnancy in rodent offspring, **Immunology Program, Broad Institute**, U.S.A.
2. **Eunha Kim***, Donggi Paik*, Gloria B. Choi[†] and Jun R. Huh[†] (2021) Maternal gut bacteria drive intestinal inflammation in offspring with neurodevelopmental disorders by altering the chromatin landscape of CD4⁺ T cells. **Department of Immunology, Harvard Medical School**, U.S.A.
3. **Eunha Kim***, Brian Kalish*, Michael E. Greenberg[†] and Jun R. Huh[†] (2021) Maternal Immune Activation in Mice Disrupts Proteostasis in the Fetal Brain. **New England Bioscience Society Korea** U.S.A.
4. **Eunha Kim***, Brian Kalish*, Michael E. Greenberg[†] and Jun R. Huh[†] (2020) Maternal Immune Activation in Mice Disrupts Proteostasis in the Fetal Brain. **Department of Immunology, Harvard Medical School**, U.S.A.
5. **Eunha Kim**, Jiyeon Beon, Seulgi Lee, Seung Ju Park, Hyoungjoon Ahn, Min Gyu Kim, Jeong Eun Park, Wooseob Kim, Jae-Min Yuk, Suk-Jo Kang, Seung-Hyo Lee, Eun-Kyeong Jo, Rho Hyun Seong[†] and Seyun Kim[†] (2018) Inositol polyphosphate multikinase (IPMK) promotes Toll-like receptor-induced inflammation by stabilizing TRAF6. **Brain Korea 21, KAIST**, Republic of Korea
6. **Eunha Kim**, Jiyeon Beon, Seulgi Lee, Seung Ju Park, Hyoungjoon Ahn, Min Gyu Kim, Jeong Eun Park, Wooseob Kim, Jae-Min Yuk, Suk-Jo Kang, Seung-Hyo Lee, Eun-Kyeong Jo, Rho Hyun Seong[†] and Seyun Kim[†] (2017) Identification of a non-catalytic signaling action of inositol polyphosphate multikinase (IPMK) in the regulation of Toll-like receptor-induced inflammation by stabilizing TRAF6. **Korean Society for Molecular and Cellular Biology (KSMCB) annual meeting**, Republic of Korea
7. **Eunha Kim** (2017) Identification of a non-catalytic signaling action of inositol polyphosphate multikinase (IPMK) in the regulation of Toll-like receptor-induced inflammation by stabilizing TRAF6. **Korean Society for Cell Biology (KSCB)**, Republic of Korea

8. **Eunha Kim**, Richa Tyagi, Joo-Young Lee, Jina Park, Young-ran Kim, Po Yu Chen, Jiyoung Y. Cha, Solomon H. Snyder and Seyun Kim (2014) Inositol polyphosphate multikinase is a coactivator for serum response factor-dependent induction of immediate early genes. **Brain Korea 21, KAIST**, Republic of Korea

POSTER PRESENTATIONS

1. **Eunha Kim***, Donggi Paik* and Jun R. Huh[†] (2019) Maternal immune activation drives long-lasting changes in the immunological landscape of their offspring. **Department of Immunology retreat, Harvard Medical School**, U.S.A.
2. **Eunha Kim***, Donggi Paik* and Jun R. Huh[†] (2019) Maternal immune activation drives long-lasting changes in the immunological landscape of their offspring. **Kenneth Rainin Foundation** U.S.A.
3. **Eunha Kim**, Rho Hyun Seong and Seyun Kim (2017) Inositol polyphosphate multikinase promotes Toll-like receptor-induced inflammation by stabilizing TRAF6. **Cold Spring Harbor Laboratory Meetings: Mechanisms of Metabolic Signaling**, NY, U.S.A.
4. **Eunha Kim**, Jeong-Eun Park, Seung-Eun Park and Seyun Kim (2017) Identification of a non-catalytic function for inositol polyphosphate multikinase in the regulation of serum response factor-dependent transcription. **Cold Spring Harbor Laboratory Meetings: Mechanisms of Metabolic Signaling**, NY, U.S.A.
5. **Eunha Kim**, Richa Tyagi, Solomon H. Snyder and Seyun Kim (2016) Inositol polyphosphate multikinase as a novel coactivator for serum response factor in the regulation of immediate gene expression. **Korean Society for Molecular and Cellular Biology (KSMCB) annual meeting**, Seoul, Republic of Korea
6. **Eunha Kim**, Richa Tyagi, Solomon H. Snyder and Seyun Kim (2015) Inositol polyphosphate multikinase as a novel coactivator for serum response factor in the regulation of immediate gene expression. **Keystone Symposia on Molecular and Cellular Biology: Diabetes and Metabolic Dysfunction**, NM, U.S.A.
7. **Eunha Kim** and Seyun Kim (2015) Myeloid inositol polyphosphate multikinase mediates obesity, insulin resistance, and associated inflammation. **Brain Korea 21, KAIST**, Republic of Korea
8. **Eunha Kim**, Richa Tyagi, Joo-Young Lee, Jina Park, Young-ran Kim, Po Yu Chen, Jiyoung Y. Cha, Solomon H. Snyder and Seyun Kim (2013) Probing nuclear functions for IPMK in the regulation of immediate early gene expression. **Korean Society for Molecular and Cellular Biology (KSMCB) annual meeting**, Seoul, Republic of Korea
9. **Eunha Kim**, Jung-Han Lee, Chang-Kee Hyun (2011) Inhibition of stearoyl-CoA desaturase1 activates AMPK and enhances beneficial lipid metabolic effects *in vitro*. **Korean Society for Biochemistry and Molecular Biology (KSBMB) annual meeting**, Seoul, Republic of Korea

TEACHING EXPERIENCES

Teaching Assistant

Spring 2020

Neuroimmunology, Harvard Medical School, U.S.A.

Spring 2013	Cell biology laboratory course, KAIST, South Korea
Spring 2011	Protein purification laboratory course, Handong Global University, South Korea
Spring 2010	Protein purification laboratory course, Handong Global University, South Korea

Mentorship

- Yanyi Sun (January 2022 - Present): Master student at Harvard Medical School, U.S.A.
- Elizabeth Fullwood (July - December 2021): Undergraduate student at Northeastern University, U.S.A.
- Melissa Tran (July 2021): Ph.D. rotation student at Harvard Medical School, U.S.A.
- Delaney G. Biggs (2020): Undergraduate student at Northeastern University, U.S.A.
- Norma Hylton (July, 2019): M.D., Ph.D. rotation student at Harvard Medical School, U.S.A.
- Casey Gilman (June-August, 2019): M.D., student at Escuela de Medicina San Juan Bautista, Puerto Rico