

# Sahib Zada, Ph.D.

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## PROFESSIONAL SUMMARY

A researcher skilled in field of cancer research, emphasizes autophagy and apoptosis in tumor microenvironment, cancer signals crosstalk, neurosciences, diabetes and arthritis with techniques, skill, passion and enthusiasm to advance in the field of Biochemistry/Molecular biology and immunology in cancer, neurosciences, diabetes and arthritis treatment. Acquired Postdoc research training from the prestigious Columbia University, Medical Center, New York USA and Ph.D research training from the prestigious Gyeongsang National University School of Medicine and Institute of Health Sciences, Jinju People Republic of Korea.

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## EMPLOYMENT HISTORY

### Postdoctoral Research Scientist

October 2021 – Continue

Columbia University, Medical Center, New York USA.

Worked on various projects, designed and executed for the autophagy and apoptosis in regulation of tumor microenvironment and its therapeutics implications.

Instructed Master and Ph.D. students of Cancer Biology and Immunology Laboratory, College of Dental Medicine, Columbia University Irving Medical Center, New York, NY, USA in research and techniques in field of autophagy, cancer biology, cell biology, biochemistry, molecular biology, immunology and manuscripts writing.

### Postdoctoral Research scholar

May 2021 – October 2021

Rutgers Cancer Institute of New Jersey| Rutgers,  
State University of New Jersey, New Brunswick, New Jersey USA

### Post-doctorate/Senior Scientist

March 2019 – March 2021

Gyeongsang National University School of Medicine and Institute of Health Sciences| Jinju,  
Republic of Korea.

Worked on various projects, designed and executed for the autophagy dependent regulation of cancer, cancer therapeutics, neuroscience, diabetes, and arthritis, data analysis and manuscripts writing.

Instructed Master and Ph.D. students of Biochemistry lab in research and techniques in field of autophagy, cancer biology, cell biology, biochemistry, molecular biology and manuscripts writing.

### PhD candidate/ Teaching Assistant

March 2014 – February 2019

Gyeongsang National University School of Medicine and Institute of Health Sciences| Jinju,  
Republic of Korea.

Worked on various projects, designed, and executed for the autophagy dependent regulation of cancer, neuroscience, diabetes, and arthritis, data analysis and manuscripts writing.

Instructed Master and Ph.D. students of Biochemistry lab in research techniques and research execution in field of autophagy, cancer biology, cell biology, biochemistry and molecular biology.

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## EDUCATION

Ph. D., Convergence Medical Sciences (Biochemistry/Molecular Biology) Gyeongsang National University School of Medicine and Institute of Health Sciences  Jinju, Republic of Korea.	2019
Master of Philosophy, Biochemistry & Molecular Biology Quaid-i-Azam University  Islamabad, Pakistan.	2013
BS (Hons). Biotechnology University of Malakand  Khyber Pakhtunkhwa, Pakistan.	2011

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## SKILLS

### Biochemistry/Molecular Biology, Cell Biology and Cancer Biology/Immunology.

Cell culture, Cloning, CRISPR Cas9, Guide RNA, Mutations, Site Directed Mutation, making Knock out mouse, Antibodies development, Transfection (Stable and Transient), Making stable cell lines, Microscopy (Electron Microscopy, Confocal Microscopy, fluorescence Microscopy), RNA seq, Total metabolomics, Total proteomic, Flow cytometry, Cell viability assays, Co-Immuno-precipitation (Co-IP), Chromatin Immuno-precipitation (Chip) assay (DNA/RNA) Real time PCR, Immunocytochemistry(IC)/Immunohistochemistry(IH), Western blotting, ELISA, Autophagy assays, Luciferase assay, Drugs sensitivity, Drugs resistance, 3D Organoid formation, Exosomes Isolation, Exosomes loading, Single cells Isolation, Murine Bone Macrophages monocytes isolation and differentiation into macrophages, T cells Isolation, T cells activation, T cells killing assays, Cytokines assay, Chemokine's assay, Cell proliferation assays, Apoptosis assays, Cells invasion assay, Cells migration assay, Drugs activities assay, Microbiological assays and antibiotics sensitivity tests.

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## ACHIEVEMENTS

09/07/2021	Distinguish nominated scientist, People who brighten up Korea by Biology Research Information Center (BRIC) Dream
2014-2019	MRC Korean Scholarship for Ph.D. Studies
2014-2019	NRF Korean Scholarship for Ph.D. Studies
2017-2018	Brain Korea (BK21Plus)
2011-2013	Merit-based Scholarship Quaid-i-Azam University Islamabad Pakistan
2008-2011	USAID Scholarship University of Malakand Khyber Pakhtunkhwa, Pakistan

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## PUBLICATIONS

1. **Sahib Zada**, Trang Minh Pham;, Jin Seok Hwang; Deok Ryong kim# Chlorogenic acid enhances Lapachone-induced apoptosis through the inhibition of autophagy via PKA activation: a novel combination cancer therapy: *Trends in Cancer*. 2024. (Submitted).

2. **Sahib Zada**, Trang Minh Pham;, Jin Seok Hwang, Mahmoud Ahmed, Trang Huyen Lai, Omar Elashkar; Deok Ryong kim#. Autophagy-mediated degradation of NOTCH1 intracellular domain controls the epithelial to mesenchymal transition and cancer metastasis. *Cell & Bioscience*. (2022) 12:17, 1-15.

<https://doi.org/10.1186/s13578-022-00752-3>

3. Ahmed M, Lai TH, Pham TM, **Zada S**, Elashkar O, Hwang JS, et al. (2022) Hierarchical regulation of autophagy during adipocyte differentiation. *PLoS ONE* 17(1): e0250865. <https://doi.org/10.1371/journal.pone.0250865>
4. **Sahib Zada**, Trang Minh Pham;, Jin Seok Hwang, Mahmoud Ahmed, Trang Huyen Lai, Omar Elashkar; Deok Ryong kim#. Chlorogenic Acid Protect Chondrocytes Cells against Oxidative Stress via activation of cytoprotective Autophagy. *Life Sciences*. 2021. 285, 119968. <https://doi.org/10.1016/j.lfs.2021.119968>
5. **Sahib Zada**, Jin Seok Hwang, Mahmoud Ahmed, Trang Huyen Lai, Trang Minh Pham, Omar Elashkar; Deok Ryong kim#. Cross talk between autophagy and oncogenic signaling pathways and implications for cancer therapy. *BBA - Reviews on Cancer*. 2021, 1876, 188565, 1-19. <https://doi.org/10.1016/j.bbcan.2021.188565>
6. Trang Huyen Lai, Mahmoud Ahmed, Jin Seok Hwang, **Sahib Zada**, Trang Minh Pham, Omar Elashkar, Deok Ryong Kim\*. Transcriptional Repression of Raf Kinase Inhibitory Protein Gene by Metadherin During Cancer Progression. *Int. J. Mol. Sci.* 2021, 22, 3052. <https://doi.org/10.3390/ijms 22063052>.
7. Dong-Yeong Lee, Young-Jin Park, Myung-Geun Song, Deok Ryong Kim, **Sahib Zada\*** and Dong-Hee Kim\*. Cytoprotective effects of delphinidin for human chondrocytes against oxidative stress through activation of autophagy. *Antioxidants*. 2020, 9, 83. 1-17. [doi:10.3390/antiox9010083](https://doi.org/10.3390/antiox9010083) (Co-correspondence\*).
8. Mahmoud Ahmed, Trang Huyen Lai, Jin Seok Hwang, **Sahib Zada**, Trang Minh Pham, and Deok Ryong Kim#. Transcriptional regulation of autophagy genes via stage-specific activation of CEBPB and PPARG: a systematic study using public gene expression and transcription factor binding datasets. *Cells*. 2019, 8, 1321; 1-18. [doi:10.3390/cells8111321](https://doi.org/10.3390/cells8111321).
9. **Sahib Zada**, Jin Seok Hwang, Mahmoud Ahmed, Trang Lai, and Deok Ryong Kim# Beta-lapachone-induced apoptosis via PKA activation in NQO1-overexpressing MDA-MD-231 cells. *Oncology Reports*. 2019. 42 (4), 1621-1630. [DOI:10.3892/or.2019.7243](https://doi.org/10.3892/or.2019.7243).
10. Huynh Quoc Nguyen\*, **Sahib Zada\*** (equally contributed ),Trang Huyen Lai, Trang Min Pham, Mahmoud Ahmed, Jin Seok, Hwang & Deok Ryong Kim#. Calpain-dependent Beclin1 cleavage stimulates senescence-associated cell death in HT22 hippocampal cells under the oxidative stress conditions. *Neuroscience Letters*. 2019. 701 106–111. [DOI: 10.1016/j.neulet.2019.02.036](https://doi.org/10.1016/j.neulet.2019.02.036).
11. **Sahib Zada**, Jin Seok Hwang, Mahmoud Ahmed, Trang Lai, Trang Minh Pham and Deok Ryong Kim# Control of the Epithelial-to-Mesenchymal Transition and Cancer Metastasis by Autophagy-Dependent SNAI1 Degradation. *Cells*. 2019. 8, 129, 1-14. [doi:10.3390/cells8020129](https://doi.org/10.3390/cells8020129).
12. Mahmoud Ahmed, Trang Lai, Jin Seok Hwang, **Sahib Zada**, Trang Min Pham Miyong Yun, Deok Ryong Kim#. Functional Linkage of RKIP to Epithelial to Mesenchymal transition and autophagy during the development of cancer. *Cancers*. 2018, 10, 273, 1-18. [doi: 10.3390/cancers10080273](https://doi.org/10.3390/cancers10080273).
13. Mahmoud Ahmed, Jin Seok Hwang, Trang Huyen Lai, **Sahib Zada**, Huynh Quoc Nguyen, Trang Min Pham, Miyong Yun, Deok Ryong Kim#. Co-Expression Network Analysis of AMPK and Autophagy Gene Products during Adipocyte Differentiation. *Int. J. Mol. Sci.* 2018, 19 (6) 1-25. <https://doi.org/10.3390/ijms19061808>.

14. Mahmoud Ahmed, Huynh Quoc Nguyen, Jin Seok Hwang, **Sahib Zada**, Trang Huyen Lai, Sang Soo Kang, and Deok Ryong Kim#. Systematic characterization of autophagy-related genes during the adipocyte differentiation using public-access data. *Oncotarget*. 2018 9(21):15526-15541. [doi: 10.18632/oncotarget.24506](https://doi.org/10.18632/oncotarget.24506).
  15. Hae Sook Noh, Young-Sool Hah, **Sahib Zada**, Ji Hye Ha, Gyujin Sim, Jin Seok Hwang, Trang Huyen Lai, Huynh Quoc Nguyen, Jae-Yong Park, Hyun Joon Kim, June-Ho Byun, Jong Ryeal Hahm, Kee Ryeon Kang & Deok Ryong Kim#. PEBP1, a RAF kinase inhibitory protein, negatively regulates starvation-induced autophagy by direct interaction with LC3. *Autophagy*. 2016 12(11):2183-2196. [doi: 10.1080/15548627.2016.1219013](https://doi.org/10.1080/15548627.2016.1219013).
  16. Hae Sook Noh\*, Young-Sool Hah\*, Ji Hye Ha, Min Young Kang, **Sahib Zada**, Sun Young Rha, Sang Soo Kang, Hyun Joon Kim, Jae-Yong Park, June-Ho Byun, Jong Ryeal Hahm, Jeong Kyu Shin, Sang-Ho Jeong, Young-Joon Lee, Deok Ryong Kim#. Regulation of the epithelial to mesenchymal transition and metastasis by Raf kinase inhibitory protein-dependent Notch1 activity. *Oncotarget*. 2016. 7 (4) 4632-4646. [doi: 10.18632/oncotarget.6728](https://doi.org/10.18632/oncotarget.6728)
  17. **Sahib Zada**, Hae Sook Noh, Seon Mi Baek, Ji Hye Ha, Jong Ryeal Hahm and Deok Ryong Kim#. Depletion of p18/LAMTOR1 promotes cell survival via activation of p27kip1-dependent autophagy under starvation. *Cell Biol Int*. 2015. 39(11):1242-50. [doi: 10.1002/cbin.10497](https://doi.org/10.1002/cbin.10497).
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## PATENTS

1. Dong-Yeong Lee, Sahib Zada\* Deok Ryong Kim, and Dong-Hee Kim.\* Pharmaceutical composition and health functional food for preventing or treating osteoarthritis. Corporate management number: 20OPo6008PCT, Application number and filing date: [PCT/KR2020/011701](https://www.patent.gov.kr/apply/patent/patentDetail.do?patentNo=PCT/KR2020/011701) (Submitted in LEECHAE Intellectual Property).
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## ABSTRACTS

1. P-35-071. The role of autophagy in the epithelial to mesenchymal transition and cancer metastasis. S. Zada, J. S. Hwang, D. R. Kim\*. 44th FEBS Congress, Krakow, Poland, 6th-11th July 2019. FEBS Open Bio 9 (Suppl. 1) (2019) 65-431 DOI: 10.1002/2211-5463.12675.
2. P-46. Autophagy-dependent SNAI1 degradation during cancer progression. Sahib Zada, Jin Seok Hwang, Mahmoud Ahmed, Trang Lai, Trang Min Pham and Deok Ryong Kim\*. The 30th Korean Society for Molecular and Cellular Biology (KSMCB) Winter Conference Jan 16-18 2019, YongPyong Resort, Gwangwon-do, Korea.
3. P-244. Autophagy-dependent SNAI1 degradation regulates the epithelial to mesenchymal transition and metastasis in cancer cells. Sahib Zada, Jin Seok Hwang, Mahmoud Ahmed, Trang Lai, Trang Min Pham and Deok Ryong Kim\*. The 26th Federation meeting of Korean Basic Medical scientists. 29th of June 2018 Seoul National University school of Medicine.
4. P-138. Autophagy-dependent degradation of Snail and Notch1 intracellular domain (NICD) regulates the EMT process and metastasis. Sahib Zada, Jin Seok Hwang, Huynh Quoc Nguyen, Mahmoud Ahmed, Trang Lai, and Deok Ryong Kim\*. "The 8th International Symposium on Autophagy" co-hosted by "The 15th JBS Bio-Frontier Symposium" May 29 - June 1, 2017 Nara Kasugano International Forum IRAKA Nara, JAPAN.

5. P-62. RKIP regulates autophagy through LC3 interaction in starved cancer cells. Sahib Zada, Jin Seok Hwang, Huynh Nguyen, Trang Lai and Deok Ryong Kim\*. 2016 Spring International Conference of Korean Society for Gerontology. The 15th Korea-Japan Gerontologist Joint Meeting, June 15-17, 2016 Hotel Laonzena, Convention Hall Daegu, Korea.
6. L-70. Chlorogenic acid enhances beta-lapachone-induced apoptosis by inhibiting ROS-dependent autophagy via PKA activation in MDA-MB-231 (NQO1+/+) cells. Sahib Zada, Jin Seok Hwang, Huynh Nguyen, Trang Lai and Deok Ryong Kim\*. Korean Society for Biochemical Molecular Biology (KSBMB). 2016.05.18-20. Coex, Seoul, Korea.
7. P-44. Co-regulation of RKIP and autophagy genes by VEZF1 and ERCC6 in prostate cancer. Mahmoud Ahmed, Jin Seok Hwang, Trang Lai, Trang Min Pham Sahib Zada and Deok Ryong Kim\*. The 30th Korean Society for Molecular and Cellular Biology (KSMCB) Winter Conference. 16-19 Jan 2019. Yongsong Resort, Gwangwon-do, Korea.
8. L-217. Activation of Autophagy during the epithelial -to- mesenchymal transition is necessary for cancer migration and invasion. Jin Seok Hwang, Sahib Zada, Huynh Nguyen, Trang Lai, Mahmoud Ahmed, Deok Ryong Kim\*. Korean Society for Biochemistry and Molecular Biology (KSBMB) International Conference 2107, May 17 (Wed)-19 (Fri), 2017 BEXCO (Exhibition Center 2) Busan, Korea.
9. L-218. Identification of astrocyte elevated gene-1 as a binding Protein of a RAF Kinase inhibitory protein. Trang Lai, Sahib Zada, Huynh Nguyen, Mahmoud Ahmed, Jin Seok Hwang, Deok Ryong Kim\*. Korean Society for Biochemistry and Molecular Biology (KSBMB) International Conference 2107, May 17(Wed)- 19 (Fri), 2017 BEXCO (Exhibition Center 2) Busan, Korea.
10. P-2004 Modulation of autophagy by Raf kinase inhibitory protein during the epithelial to mesenchymal transition and cancer metastasis. Sahib Zada, Jin Seok Hwang, Hae Sook Noh Huynh Nguyen, Trang Lai and Deok Ryong Kim\*. "The 8th International Symposium on Autophagy" co-hosted by "The 15th JBS Bio-Frontier Symposium" May 29 - June 1, 2017 Nara Kasugano International Forum IRAKA Nara, JAPAN.
11. P-137. Regulation of oxidative stress response by PEBP1-dependent autophagy. Nguyen Quoc Huynh, Trang Huyen Lai, Sahib Zada, Mahmoud Ahmed, Deok Ryong Kim\*. "The 8th International Symposium on Autophagy" co-hosted by "The 15th JBS Bio-Frontier Symposium" May 29 - June 1, 2017 Nara Kasugano International Forum IRAKA Nara, JAPAN.
12. G-22 Regulation of KEAP1-NRF2 pathway by PEBP1-dependent autophagy under oxidative stress. Quoc Huynh Nguyen, Trang Lai, Sahib Zada, Jin Seok Hwang, Mahmoud Ahmed and Deok Ryong Kim\*. 2017 International Conference Korean Society for Molecular and Cellular Biology. Sep 12-14, Coex, Seoul, Korea.
13. D-16. miRCancer: a database for microRNA gene/protein expression correlation in cancer. Mahmoud Ahmed, Sahib Zada, and Deok Ryong Kim\*. 2017 International Conference Korean Society for Molecular and Cellular Biology. Sep 12-14, Coex, Seoul, Korea.
14. P-136. Characterization of autophagy gene sets in differentiating adipocytes. Mahmoud Ahmed, Huynh Quoc Nguyen, Jin Seok Hwang, Sahib Zada, Deok Ryong Kim\*. The 8th International Symposium on Autophagy. The 8th International Symposium on Autophagy co-hosted by "The 15th JBS Bio-Frontier Symposium" May 29 - June 1, 2017, Nara Kasugano International Forum IRAKA Nara, JAPAN.

15. P-72. Mahmoud Ahmed, Sahib Zada, Huynh Nguyen, Deok Ryong Kim. Computational study of transcriptional regulation of autophagy in differentiating adipocytes. The 28th Korean Society for Molecular and Cellular Biology (KSMCB). 2017.01.18(Wed)-20 (Fri) Winter Conference, Yeonpyeong Resort, Gwangwon-do, Korea.
  16. P-73. Interaction between Metadhedrin and a RAF Kinase Inhibitory Protein: its implication in regulation of autophagy. Trang Lai, Sahib Zada, Huynh Nguyen, and Deok Ryong Kim.\* The 28th Korean Society for Molecular and Cellular Biology (KSMCB). 2017.01.18(Wed)-20(Fri) Winter Conference, Yeonpyeong Resort, Gwangwon-do, Korea.
  17. P-74. The role of autophagy in TGFbeta1-induced epithelial-to-mesenchymal transition. Jin Seok Hwang, Sahib Zada, Huynh Nguyen, and Deok Ryong Kim\* The 28th Korean Society for Molecular and Cellular Biology (KSMCB). 2017.01.18(Wed)-20(Fri) Winter Conference, Yeonpyeong Resort, Gwangwon-do, Korea.
  18. K-15. Regulation of accumulation of lipid droplets in 3T3-L1pre-adipocytes overexpressing LC3 through the RKIP-dependent ERK activation. Mahmoud Ahmed, Trang Lai, Sahib Zada, Huynh Nguyen, Jin Seok Hwang, and Deok Ryong Kim\*. 2016 International Conference of the Korean Society for Molecular and Cellular Biology Korea (KSMCB). October 12-14, 2016 / Coex, Seoul, Korea.
  19. N-59. ULK1-dependent regulation of autophagy in RKIP-overexpressing cancer cells under nutrient deficiency. Jin Seok Hwang, Sahib Zada, Huynh Nguyen, Trang Lai and Deok Ryong Kim\*. International Conference of The Korean Society for Biochemistry and Molecular Biology (KSBMB). 2016.05.18-20. Coex, Seoul, Korea.
  20. C-59 Raf kinase inhibitory protein regulates starvation induced autophagy in a ERK independent manner. Hae Sook Noh, Sahib Zada, and Deok Ryong Kim\*. International Conference of the Korean Society for Molecular and Cellular Biology. September 21-23, 2015. COEX, Seoul, Korea.
  21. D-71. RKIP can regulate to epithelial to mesenchymal transition by modulating the Notch 1 activity. Hae Sook Noh, Sahib Zada, and Deok Ryong Kim\* The 26th International Conference of the Korean Society for Molecular and Cellular Biology (KSMCB). October 21-23, 2014, COEX, Seoul, Korea.
  22. P-231. Calpain-dependent Beclin1 cleavage stimulates senescence-associated cell death in HT22 hippocampal cells under the oxidative stress conditions. Jin Seok Hwang, Huynh Nguyen, Sahib Zada, Mahmoud Ahmed, Trang Lai, Trang Min Pham and Deok Ryong Kim\*. The 26th Federation meeting of Korean Basic Medical scientists. 29th of June 2018 Seoul National University school of Medicine.
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### **Research Projects in Progress**

1. Crosstalk between autophagy and apoptosis and their therapeutic applications.
2. Role of autophagy in regulation of cancer EMT and metastasis through key protein degradation.
3. Starvation induced autophagy regulates cancer EMT and metastasis related mRNAs through ARE and 3`UTR interactions with RNA binding proteins dependent manner.
4. Searching for alternative ways to inhibits cancer therapeutics resistant with modulation of autophagy.
5. RKIP regulates cancer EMT and metastasis via autophagy.
6. Role AMPK and ULK1 kinases in cancer on basis of RKIP.



7. Regulation of diabetes by starvation induced autophagy through IDE dependent manner.
  8. Regulation of Cancer EMT and metastasis by autophagy through p53 dependent degradation.
  9. Starvation induced autophagy and its role in regulation Stem cells differentiation.
  10. Role of autophagy in regulation of Arthritis.
  11. Modulation of autophagy in combine drugs therapy in resistance.
  12. Role of Caspase-8 in regulation of cancer immunology with specific emphases on autophagy and apoptosis.
  13. Role of Exosomes in drugs delivery with specific emphases on autophagy.
  14. Crosstalk between autophagy and apoptosis in cancer therapeutics.
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### **Scientific Journal Reviewer**

Cell Death & Disease, Cancers, Molecular Neurobiology, Cells, International Journal of Molecular Sciences, Biomedicines, Cosmetics, BMC Cancer, Artificial Cells, Nanomedicine and Biotechnology, BMC Ophthalmology, BMC Pharmacology and Toxicology, BMC Musculoskeletal Disorders, BMC Veterinary Research, Frontiers in Nutrition.

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### **REFERENCES**

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#### **Dr. Imran Ullah**

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