OMB No. 0925-0001 and 0925-0002 (Rev. 10/15 Approved Through 10/31/2018)

BIOGRAPHICAL SKETCH

NAME: Chang, Kun-Che POSITION TITLE: Postdoctoral Researcher

EDUCATION/TRAINING

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| INSTITUTION AND LOCATION | DEGREE | START  DATE  MM/YYYY | END DATE  MM/YYYY | FIELD OF STUDY |
| National Dong Hwa University | B.S. | 09/2002 | 06/2006 | Life Sciences |
| National Tsing Hua University | M.S. | 09/2006 | 01/2008 | Biotechnology |
| University of Colorado Denver | Ph.D. | 09/2011 | 12/2015 | Toxicology/  Ophthalmology |
| Stanford University (Postdoc) | n/a | 07/2016 | Present | Ophthalmology/  Neurosciences/  Stem cell biology |

# A. Personal Statement

I have been dedicated to science since the year I joined a research lab as a summer intern student at Notional Dong Hwa University in Taiwan in 2003. As a graduate student for my master’s degree, I published a work regarding to eosinophil cationic proteins in airway model in Dr. Yiu-Kay Lai’s lab. In 2012, I joined Dr. J. Mark Petrash’s lab working on the effects of aldose reductase on ocular diseases as a predoctoral student. I uncovered the mechanism of aldose reductase in a variety of ocular diseases. During my graduate career, I received several internal and external research awards. After obtaining my PhD, I continue to build my research career on ophthalmology, neurosciences and stem cell biology as a postdoctoral researcher at Stanford University. My mentor Dr. Jeffrey Goldberg and co-mentor Dr. Marius Wernig are experts in the neurosciences and stem cell biology fields. The proposed research with their mentoring will provide me with novel conceptual and technical training in developmental biology, neuroregeneration and stem cell therapy. In addition, the proposed training includes career development activities and workshops-e.g. grant writing, public presentation, lab management and scientific communication with faculties on campus, which are all designed to enhance my capabilities of being an independent investigator. Overall, in my past scientific career, I have been productive in research by myself and with cooperation. In terms of my career goals, I aspire to be an academic researcher and hope to one day direct my own research program focused on developing strategies to treat neurodegenerative disease.

**B. Honors**

* **Book Aroma Award**, National Dong Hwa University, (2003, 2004)
* **MWSOT Student Travel Award**, The 30th Annual Regional Meeting of the Mountain West Society of Toxicology (2012)
* **C. Werner and Kitty Hirs Research Award** for Ph.D. student travel to national meetings, Graduate School at Anschutz Medical Campus, University of Colorado (2013, 2014, 2015)
* **Award for School of Medicine Class of 2017 Poster Choice – Pharmacy** **Student,** University of Colorado Denver Anschutz Medical Campus 28th Annual Student Research Forum (2013)
* **Trainee Award,** The 17th International Workshop on the Enzymology and Molecular Biology of Carbonyl Metabolism (2014)
* **Award for best poster of vision sciences class,** University of Colorado Denver Anschutz Medical Campus 29th Annual Student Research Forum (2014)
* **Harold C. Heim Awards for Excellence in Graduate Research,** University ofColorado Denver Anschutz Medical Campus, Skaggs School of Pharmacy and Pharmaceutical Sciences (2015)

**C. Publications (Since 2013~)**

1. **Chang KC**, Laffin B, Ponder J, Enzsoly A, Nemeth J, Labarbera DV, Petrash JM\* “Beta-glucogallin reduces the expression of lipopolysaccharide -induced inflammatory markers by inhibition of aldose reductase in murine macrophages and ocular tissues” ***Chem Biol Interact.*** 2013, 202(1-3):283-7
2. Li L, **Chang KC**, Zhou Y, Shieh B, Ponder J, Abraham AD, Ali H, Snow A, Petrash JM, Labarbera DV\* “Design of an Amide N-glycoside Derivative of β-Glucogallin: A Stable, Potent, and Specific Inhibitor of Aldose Reductase” ***J Med Chem.*** 2013, 57(1):71-7
3. **Chang KC**, Ponder J, Labarbera DV, Petrash JM\* “Aldose Reductase Inhibition Prevents Endotoxin-Induced Inflammatory Responses in Retinal Microglia” ***Invest Ophthalmol Vis Sci.*** 2014, 55(5):2853-61
4. Snow A, Shieh B, **Chang KC**, Pal A, Lenhart P, Ammar D, Ruzycki P, Palla S, Reddy GB, Petrash JM\* “[Aldose reductase expression as a risk factor for cataract](http://www.sciencedirect.com/science/article/pii/S0009279714004025)” ***Chem Biol Interact.*** 2015,234: 247-253
5. **Chang KC**, Snow A, Labarbera DV, Petrash JM\* “Aldose Reductase Inhibition Alleviates Hyperglycemic Effects on Retinal Pigment Epithelial Cells” ***Chem Biol Interact.*** 2015, 234: 254-260
6. **Chang KC** and Petrash JM\* “Aldose Reductase Mediates Transforming Growth Factor beta 2 (TGF-beta 2)-induced Migration and Epithelial-to- Mesenchymal Transition of Lens-Derived Epithelial Cells” ***Invest Ophthalmol Vis Sci.*** 2015,56(8):4198-4210
7. **Chang KC,** Shieh B, Petrash JM\* “Aldose reductase mediates retinal microglia activation” ***Biochem Biophys Res Commun.*** 2016, 473(2):565-571
8. **Chang KC**, Li L, Sanborn TM, Shieh B, Lenhart P, Ammar D, LaBarbera DV, Petrash JM\* “Characterization of Emodin as a Therapeutic Agent for Diabetic Cataract” ***J Nat Prod.*** 2016, 79(5):1439-1444
9. **Chang KC**\*, Hertz JY, Zhang X, Jin XL, Shaw P, Derosa BA, Li JY, Venugopalan P, Valenzuela DA, Patel RD, Russano KR, Alshamekh SA, Sun C, Tenerelli K, Li C, Velmeshev D, Cheng Y, Boyce TM, Dreyfuss A, Uddin MS, Muller KJ, Dykxhoorn DM and Goldberg JL “Novel regulatory mechanisms for the SoxC transcriptional network required for visual pathway development” ***J Neurosci.*** 2017, 37(19):4967-4981
10. **Chang KC**, Shieh B, Petrash JM\* “Influence of Aldose Reductase on Epithelial-to-Mesenchymal Transition Signaling in Lens Epithelial Cells” ***Chem Biol Interact.*** 2017, Epub ahead of print
11. **Chang KC\*** and Hertz J\* “SoxC transcription factors in retinal development and regeneration” ***Neural Regen Res.*** 2017,Accepted.Complete

List of Published Work in MyNCBI:

<https://www.ncbi.nlm.nih.gov/myncbi/browse/collection/51347894/?sort=date&direction=descending>