



## Kun-Che Chang

Postdoctoral Research Fellow, Ophthalmology

 NIH Biosketch available Online

### Bio

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#### BIO

Kun-Che (Gary) Chang was born in Kaohsiung, Taiwan. He obtained his B.S. in Life Science from National Dong Hwa University (Taiwan) in 2006 and his M.S. in Biotechnology from National Tsing Hua University (Taiwan) in 2008. After worked at National Taiwan University for 1 year, he transited to University of Minnesota, Dept. of Pharmacology as a research assistant from 2010 to 2011. He joined the Toxicology PhD program at University of Colorado and was mentored by Dr. J. Mark Petrash at Dept. of Ophthalmology. He obtained his PhD degree in 2015. His PhD thesis focuses on prevention of ocular inflammation. He joined Dr. Jeffrey Goldberg's lab's for his post-doctoral training at Dept. of Ophthalmology, Stanford University in 2016.

#### HONORS AND AWARDS

- Ruth L. Kirschstein National Research Service Award Individual Postdoctoral Fellowship (F32), National Eye Institute (2018-present)
- JNS Travel Award, The 41th Annual Meeting of the Japan Neuroscience Society (2018)
- NEI-T32 awardee, Stanford Vision Research Training Program (2018-2019)
- ARVO Travel Grant, The 2018 annual meeting of the Association for Research in Vision and Ophthalmology (2018)
- Harold C. Heim Awards for Excellence in Graduate Research, University of Colorado Denver, Skaggs School of Pharmacy and Pharmaceutical Sciences (2015)
- Award for best poster of vision sciences class, University of Colorado Denver Anschutz Medical Campus 29th Annual Student Research Forum (2014)
- Trainee Award, The 17th International Workshop on the Enzymology and Molecular Biology of Carbonyl Metabolism (2014)
- Award for School of Medicine Class of 2017 Poster Choice, University of Colorado Denver Anschutz Medical Campus 28th Annual Student Research Forum (2013)
- C. Werner and Kitty Hirs Research Award, Graduate School at Anschutz Medical Campus, University of Colorado (2013, 2014, 2015)
- MWSOT Student Travel Award, The 30th Annual Regional Meeting of the Mountain West Society of Toxicology (2012)
- Book Aroma Award, National Dong Hwa University (2003, 2004)

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of Colorado Denver (2015)
- Master of Science, National Tsinghua University (2008)
- Bachelor of Science, National Dong Hwa University (2006)

#### STANFORD ADVISORS

- Jeffrey Goldberg, Postdoctoral Faculty Sponsor
- Jeffrey Goldberg, Postdoctoral Research Mentor

## LINKS

- Google Scholar: [https://scholar.google.com/citations?sortby=pubdate&hl=en&user=ysi6rAEAAAAJ&view\\_op=list\\_works](https://scholar.google.com/citations?sortby=pubdate&hl=en&user=ysi6rAEAAAAJ&view_op=list_works)

## Publications

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### PUBLICATIONS

- **Opposing Effects of Growth and Differentiation Factors in Cell-Fate Specification.** *Current biology : CB*  
Chang, K. C., Sun, C., Cameron, E. G., Madaan, A., Wu, S., Xia, X., Zhang, X., Tenerelli, K., Nahmou, M., Knasel, C. M., Russano, K. R., Hertz, J., Goldberg, et al  
2019
- **Role of aldose reductase in diabetes-induced retinal microglia activation.** *Chemico-biological interactions*  
Chang, K. C., Shieh, B., Petrash, J. M.  
2019
- **MTP18 is a Novel Regulator of Mitochondrial Fission in CNS Neuron Development, Axonal Growth, and Injury Responses.** *Scientific reports*  
Kreymerman, A., Buickians, D. N., Nahmou, M. M., Tran, T., Galvao, J., Wang, Y., Sun, N., Bazik, L., Huynh, S. K., Cho, I. J., Boczek, T., Chang, K. C., Kunzevitzky, et al  
2019; 9 (1): 10669
- **Magnetic Human Corneal Endothelial Cell Transplant: Delivery, Retention, and Short-Term Efficacy.** *Investigative ophthalmology & visual science*  
Xia, X., Atkins, M., Dalal, R., Kuzmenko, O., Chang, K. C., Sun, C. B., Benatti, C. A., Rak, D. J., Nahmou, M., Kunzevitzky, N. J., Goldberg, J. L.  
2019; 60 (7): 2438–48
- **Retinal Cell Fate Specification.** *Trends in neurosciences*  
Wu, S., Chang, K. C., Goldberg, J. L.  
2018; 41 (4): 165–67
- **Aldo-Keto Reductases: Multifunctional Proteins as Therapeutic Targets in Diabetes and Inflammatory Disease.** *Advances in experimental medicine and biology*  
Chang, K. C., Petrash, J. M.  
2018; 1032: 173–202
- **Induced Pluripotent Stem Cells Promote Retinal Ganglion Cell Survival After Transplant.** *Investigative ophthalmology & visual science*  
Wu, S., Chang, K. C., Nahmou, M., Goldberg, J. L.  
2018; 59 (3): 1571–76
- **Novel Regulatory Mechanisms for the SoxC Transcriptional Network Required for Visual Pathway Development** *JOURNAL OF NEUROSCIENCE*  
Chang, K., Hertz, J., Zhang, X., Jin, X., Shaw, P., Derosa, B. A., Li, J. Y., Venugopalan, P., Valenzuela, D. A., Patel, R. D., Russano, K. R., Alshamekh, S. A., Sun, et al  
2017; 37 (19): 4967-4981
- **Influence of aldose reductase on epithelial-to-mesenchymal transition signaling in lens epithelial cells.** *Chemico-biological interactions*  
Chang, K. C., Shieh, B., Petrash, J. M.  
2017
- **SoxC transcription factors in retinal development and regeneration.** *Neural regeneration research*  
Chang, K. C., Hertz, J.  
2017; 12 (7): 1048–51
- **Characterization of Emodin as a Therapeutic Agent for Diabetic Cataract** *JOURNAL OF NATURAL PRODUCTS*  
Chang, K., Li, L., Sanborn, T. M., Shieh, B., Lenhart, P., Ammar, D., LaBarbera, D. V., Petrash, J. M.  
2016; 79 (5): 1439-1444
- **Aldose reductase mediates retinal microglia activation** *BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS*  
Chang, K., Shieh, B., Petrash, J. M.  
2016; 473 (2): 565-571

- **Aldose Reductase Mediates Transforming Growth Factor beta 2 (TGF-beta 2)-Induced Migration and Epithelial-To-Mesenchymal Transition of Lens-Derived Epithelial Cells** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*  
Chang, K., Petrash, J. M.  
2015; 56 (8): 4198-4210
- **Aldose reductase expression as a risk factor for cataract** *CHEMICO-BIOLOGICAL INTERACTIONS*  
Snow, A., Shieh, B., Chang, K., Pal, A., Lenhart, P., Ammar, D., Ruzycki, P., Palla, S., Reddy, G. B., Petrash, J. M.  
2015; 234: 247-253
- **Aldose reductase inhibition alleviates hyperglycemic effects on human retinal pigment epithelial cells** *CHEMICO-BIOLOGICAL INTERACTIONS*  
Chang, K., Snow, A., LaBarbera, D. V., Petrash, J. M.  
2015; 234: 254-260
- **Aldose Reductase Inhibition Prevents Endotoxin-Induced Inflammatory Responses in Retinal Microglia** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*  
Chang, K., Ponder, J., LaBarbera, D. V., Petrash, J. M.  
2014; 55 (5): 2853-2861
- **Design of an Amide N-Glycoside Derivative of beta-Glucogallin: A Stable, Potent, and Specific Inhibitor of Aldose Reductase** *JOURNAL OF MEDICINAL CHEMISTRY*  
Li, L., Chang, K., Zhou, Y., Shieh, B., Ponder, J., Abraham, A. D., Ali, H., Snow, A., Petrash, J. M., LaBarbera, D. V.  
2014; 57 (1): 71-77
- **Beta-glucogallin reduces the expression of lipopolysaccharide-induced inflammatory markers by inhibition of aldose reductase in murine macrophages and ocular tissues** *CHEMICO-BIOLOGICAL INTERACTIONS*  
Chang, K., Laffin, B., Ponder, J., Enzoely, A., Nemeth, J., LaBarbera, D. V., Petrash, J. M.  
2013; 202 (1-3): 283-287
- **Eicosapentaenoic acid and docosahexaenoic acid inhibit macrophage-induced gastric cancer cell migration by attenuating the expression of matrix metalloproteinase 10** *JOURNAL OF NUTRITIONAL BIOCHEMISTRY*  
Wu, M., Tsai, Y., Hua, K., Chang, K., Kuo, M., Lin, M.  
2012; 23 (11): 1434-1439
- **Cholesterol regulation of receptor-interacting protein 140 via microRNA-33 in inflammatory cytokine production** *FASEB JOURNAL*  
Ho, P., Chang, K., Chuang, Y., Wei, L.  
2011; 25 (5): 1758-1766
- **Serum vascular endothelial growth factor-D levels correlate with cervical lymph node metastases in papillary thyroid carcinoma** *GROWTH FACTORS*  
Lai, C., Chen, K., Hung, C., Kuo, S., Chang, Y., Lin, M., Chang, K., Wu, M.  
2011; 29 (2-3): 57-62
- **Gefitinib-induced epidermal growth factor receptor-independent keratinocyte apoptosis is mediated by the JNK activation pathway** *BRITISH JOURNAL OF DERMATOLOGY*  
Lu, P., Kuo, T., Chang, K., Chang, C., Chu, C.  
2011; 164 (1): 38-46
- **TNF-alpha Mediates Eosinophil Cationic Protein-induced Apoptosis in BEAS-2B Cells** *BMC CELL BIOLOGY*  
Chang, K., Lo, C., Fan, T., Chang, M. D., Shu, C., Chang, C., Chung, C., Fang, S., Chao, C., Tsai, J., Lai, Y.  
2010; 11
- **Control Mechanisms of Differential Translation of Hsp90 Isoforms in 9L Rat Gliosarcoma Cells** *JOURNAL OF CELLULAR BIOCHEMISTRY*  
Lo, C., Chang, Y., Chao, C., Chang, M. D., Chang, K., Lai, Y.  
2009; 107 (3): 418-427
- **Concerted actions of multiple transcription elements confer differential Transactivation of HSP90 isoforms in geldanamycin-treated 9L rat gliosarcoma cells** *JOURNAL OF CELLULAR BIOCHEMISTRY*  
Chao, C., Sun, F., Wang, C., Lo, C., Chang, Y., Chang, K., Chang, M. D., Lai, Y.  
2008; 104 (4): 1286-1296