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Education:

1997-2000: Postdoc, Osaka University Graduate School of Medicine, Osaka, Japan
1993-1997: Postdoc, Kyoto University, Kyoto, Japan
1989-1993: PhD, Graduate School of Chinese Academy of Agriculture Science, Beijing, China
1989-1992: Graduate School of Medicine Chiba University, Chiba, Japan

Positions:

2008-present: Assistant Professor of Ophthalmology, and Neuroscience, Neuroscience Center, LSU Health Sciences Center, New Orleans, LA
2007-2008: Associate Research Professor in Ophthalmology, Jules Stein Eye Institute (JSEI), David Geffen School of Medicine at UCLA, CA
2004-2007: Assistant Research Professor in Ophthalmology, JSEI, UCLA School of Medicine, CA
2001-2004: Visiting Assistant Research Ophthalmologist, JSEI, UCLA School of Medicine, CA
2000-2001: Education and Science Instructor, Gunma University School of Medicine, Japan

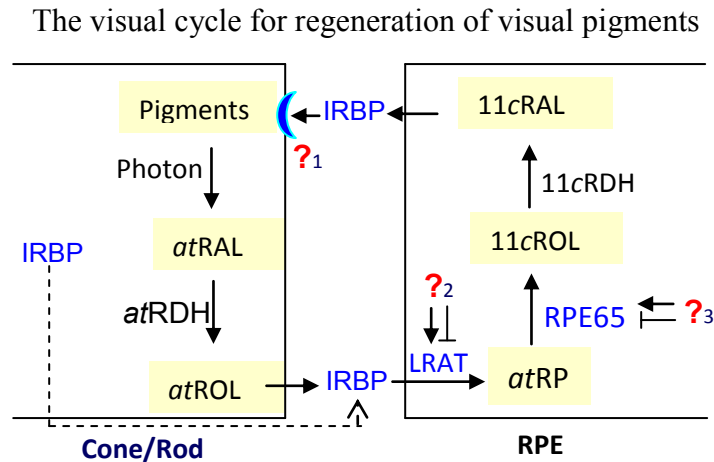
Awards/Recognitions/Lectures:

2005: Goho Life Science International Foundation Award
2004: CAAS-Sponsored Second-Class Outstanding Scientist
1997-2000: Japan Science and Technology Agency Scholarship
1992-1994: Education Ministry of Japan-Sponsored Overseas Fellowship

Current Research:

Absorption of photon by the visual pigment induces photo-isomerization of its 11-*cis*-retinaldehyde (11-*cis*-Ral) to all-*trans*-Ral, activating phototransduction that converts light energy to electrical energy and neural signal in photoreceptors. Since 11-*cis*-Ral is the universal chromophore responsible sensing light, sustained vision requires continuous regeneration of 11-*cis*-Ral via a series of enzymatic reaction called the visual cycle. In vertebrate eyes, this visual cycle is the main biochemical pathway that regenerates 11-*cis*-Ral chromophore. Dysfunction in any proteins involved in the visual cycle causes severe retinal diseases such as early onset childhood blindness known as Leber's congenital amaurosis and photoreceptor dystrophy. Studying the molecular mechanisms by which the activities of the visual cycle enzymes are regulated is important not only for basic vision science but also clinical ophthalmology. We

are currently focusing on the identification and characterization of proteins that regulate the visual cycle. By using expression cloning and yeast two hybrid screening, we have isolated several candidates that regulate visual cycle enzymes. We use molecular biology, proteomics, cell culture and gene knockout approaches to study the function of these candidates in the visual pigment regeneration and photoreceptor degeneration. We are also exploring the molecular mechanism by which interphotoreceptor retinoid-binding protein (IRBP) regulates retinal cell survival and cone-mediated daylight vision.



Keywords:

Biochemistry and molecular biology of the visual cycle
Molecular mechanism of photoreceptor degeneration

Key Recent Papers:

1. **Jin, M.**, Li, S., Nusinowitz, S., Lloyd, M., Hu, J., Radu, R., Bok, D. and Travis, GH. The role of interphotoreceptor retinoid-binding protein on the translocation of visual retinoids and function of cone photoreceptors. *J Neurosci* (2009) 29:1486-1495
2. **Jin, M.**, Yuan, Q., Li, S., and Travis, GH: Role of LRAT on the retinoid isomerase activity and association of Rpe65 with membrane. *J Biol Chem* (2007) 282:20915-24.
3. **Jin, M.**, Ishida, M., Katoh-Fukui, Y., Higashinakagawa, T., and Arimatsu, Y: Reduced pain sensitivity in mice lacking latexin, an inhibitor for metalloproteinases. *Brain Res* (2006) 1075:117-22.
4. Kaschula, CH., **Jin, M.**, Desmond-Smith, NS, Li, S., and Travis, GH: Acyl CoA: retinol acyl transferase activity is present in bovine retinal pigment epithelium. *Exp Eye Res* (2006) 82:111-21.
5. **Jin, M.**, Li, S., Moghrabi, WN, Sun, H., and Travis, GH: RPE65 is the retinoid isomerase in bovine retinal pigment epithelium. *Cell* (2005) 122:449-59.
6. **Jin, M.**, Tanaka, S., Sekino, Y., Ren, Y., Yamazaki, H., Kawai-Hirai, R., Kojima, N., and Shirao, T: A novel, brain-specific mouse drebrin: cDNA cloning, chromosomal mapping, genomic structure, expression, and functional characterization. *Genomics* (2002) 79: 686-92.
7. **Jin, M.**, Sawamoto, K., Ito, M., and Okano, H: The interaction between the Drosophila secreted protein Argos and the EGF-receptor inhibits dimerization of the receptor and binding of secreted Spitz to the receptor. *Mol Cell Biol* (2000) 20:2098-107.
8. Uratani, Y., Takiguchi, K., Sato, M., **Jin, M.**, and Arimatsu, Y: Latexin, a carboxypeptidase A inhibitor, is expressed in rat peritoneal mast cells and is associated with granular structures distinct from secretory granules and lysosomes. *Biochem J* (2000) 346:817-26.

9. Miyasaka, N., Hatanaka, Y., **Jin, M.**, and Arimatsu, Y: Genomic organization and regulatory elements of the rat latexin gene, which is expressed in a cell type-specific manner in both central and peripheral nervous systems. *Mol Brain Res.* (1999) 69:62-72.
10. Chen, J., Ido, E., **Jin, M.**, Kuwata, T., Igarashi, T., Mizuno, A., Koyanagi, Y., and Hayami, M: Replication of human immunodeficiency virus type 1, simian immunodeficiency virus strain mac and chimeric HIV/SIVmac viruses having *env* genes derived from macrophage-tropic viruses: an indication of different mechanisms of macrophage-tropism in human and monkey cells *J Gen Virol* (1998) 79:741-45.
11. **Jin, M.**, Uratani, Y. and Arimatsu, Y: Mapping to mouse Chromosome 3 of the gene encoding Latexin (*Lxn*) expressed in neocortical neurons in a region-specific manner. *Genomics* (1997) 39:419-22.
12. **Jin, M.**, Ido, E., Kuwata, T., Igarashi, T., Cichutek, K., Kurth, R., Miura, T., Enose, Y., Chen, J., and Hayami, M. (1996) Replication and cytopathogenicity of human immunodeficiency virus type 1 (HIV-1)/simian immunodeficiency virus agm3 chimeric viruses in human and monkey cells: the 5' half of the HIV-1 genome is responsible for virus cytopathogenicity. *J Gen Virol* 77:2427-2431.