

Curriculum Vitae (Chung-Der Hsiao)

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Brief Autobiography :

Chung-Der Hsiao is associate professor of Chung Yuan Christian University for Department of Bioscience Technology. He completed the undergraduate and graduate education in National Taiwan University. For postdoctoral training, he joined Dr. Pung-Pung Hwang's group at ICOB, Academia Sinica, and worked on fish physiology and bioinformatics. By 2007, Chung-Der was recruited by Chung Yuan Christian University and established his own laboratory, where he used state-of-the-art transgenic methods to generate many zebrafish disease models like apoptosis, obesity, skin cancer and aging. From 2012, Chung-Der was invited by GeneTex International Corp, Zgenebio Biotech and Taikong Corp as research consultant to initiate several cooperation projects on developing zebrafish antibodies, TALEN/CRISPR genome editing tools, transgenic fish as well as Next Generation Sequencing technologies. From 2013, Chung-Der was promoted as associate professor of Chung Yuan Christian University. Chung-Der is author of over 60 high impact journal articles. He is frequently invited to talk at international and local conferences across a diverse range of fields, and has also spoken to school, student and public audiences. His research has strong application potentials and several patents have been issued regarding to use zebrafish as a human disease models.

Present Appointment :

1. Associate Professor, Chung Yuan Christian University
2. Head of Zebrafish core facility and drug screen platform
3. Research consultant of Zgenebio Biotech INC.
4. Research consultant of Taikong Group Corp.
5. Research consultant of GeneTex International Corp.
6. Research consultant of WeThinkbio Biotech INC.

Career Highlight:

1. Development of new genome editing tools of TALEN and CRISPR to manipulate fish genome
2. Development of Zebrafish model for human diseases (Obesity, aging and genetic disorders)
3. Development of Zebrafish model suitable to perform high throughput drug screening
4. Development of bioinformatic pipeline to annotate aquatic animal's transcriptome
5. Development of new tools for decoding and annotating small genome

Academic Background:

1. Assistant Professor, Chung Yuan Christian University (2007/8-2013/7)
2. Visiting scientist, GRC, Academia Sinica (2009/7-2009/12)
3. Postdoc fellow, IMCB, Singapore (2006/3-2006/12)
4. Postdoc fellow, ICOB, Academia Sinica (2003/10-2007/7)
5. Postdoc fellow, IMB, Academia Sinica (2003/1-2003/9)

Honor and Awards:

1. Obese zebrafish model has been highlighted by Disease Models & Mechanisms (2012)
2. Visiting Scientist Research Grant, Genome Research Center, Academia Sinica (2009)
3. Distinguished Postdoctoral Fellowship, Academia Sinica (2004-2006)
4. Chien-Tien Hsu's Award Presentation, The Chinese Society of Cell and Molecular Biology (2001)

Professional Affiliation / Membership:

1. The Chinese Society of Cell and Molecular Biology
2. The Society of Chinese Natural Medicine
3. The Ichthyological Society of Taiwan
4. Taiwan Fisheries Society
5. Taiwan Marine Biotechnology Society

Journal reviewer/editor:

Journal of Next Generation Sequencing & Applications, Neuropeptides, PLoS One, Hereditas (Beijing), Journal of Ocean University of China, Expert Opinion on Drug Discovery, Journal of Diabetes and Endocrinology, PLoS Computational Biology and Gene Express Patterns

Publications List (2011-2015):

2015 (26 papers)

- Shen KN, Chang CW, Lin ZH, Chan YF, Tsai SY, Chen CH, **Hsiao CD***. Complete mitogenomes of Cocos lemonpeel angelfish (*Centropyge flavissima*) and Eibl's angelfish (*Centropyge eibli*) (Teleostei: Pomacanthidae). Mitochondrial DNA (In press)
- Shen KN, Chang CW, Chan YF, Lin ZH, Tsai SY, Chen CH, **Hsiao CD***. Complete mitogenomes of Woodhead's angelfish (*Centropyge woodheadi*) and Herald's angelfish (*Centropyge heraldi*) (Teleostei: Pomacanthidae). Mitochondrial DNA (In press)
- Lin DS*, **Hsiao CD**, Lee AY, Ho CS, Liu HL, Wang TJ, Jian YR, Hsu JC, Huang ZD, Lee TH, Chiang MF*. Mitigation of Cerebellar Neuropathy in Globoid Cell Leukodystrophy Mice by AAV-Mediated Gene Therapy. *Gene*. (In press)
- Hsiao CD**, Shen KN, Chan YF, Lin ZH, Tsai SY, Chen CH, Chang CW*. Complete mitogenomes of Spotbreast angelfish (*Genicanthus melanospilos*) and Blackstriped angelfish (*Genicanthus lamarck*) (Teleostei: Pomacanthidae). Mitochondrial DNA (In press)
- Shen KN, Chang CW, Lin ZH, Chan YF, Tsai SY, Chen CH, **Hsiao CD***. Complete mitogenomes of Whitetail angelfish (*Centropyge flavicauda*) and Orangeback angelfish (*Centropyge acanthops*) (Teleostei: Pomacanthidae). Mitochondrial DNA (In press)
- Shen KN, Chang CW, Tsai SY, Lin ZH, Chan YF, Chen CH, **Hsiao CD***. Complete mitogenomes of Barred angelfish (*Paracentropyge multifasciata*) and Purplemask angelfish (*Paracentropyge venusta*) (Teleostei: Pomacanthidae). Mitochondrial DNA (In press)
- Yao CJ, Chen CH, **Hsiao CD***. The complete mitogenome of Ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*) (Chordata: Ziphiidae). Mitochondrial DNA (In press)
- Shen KN, Chang CW, Chen CH, **Hsiao CD***. Complete mitogenomes of King angelfish (*Holacanthus passer*) and Queen angelfish (*Holacanthus ciliaris*) (Teleostei: Pomacanthidae) Mitochondrial DNA (In press)
- Shen KN, Chen CH, **Hsiao CD***. Complete mitogenomes of Guinean angelfish (*Holacanthus africanus*) and Rock beauty (*Holacanthus tricolor*) (Teleostei: Pomacanthidae) Mitochondrial DNA (In press)
- Shen KN, Chang CW, Chen CH, **Hsiao CD***. Complete mitogenomes of Multicolor angelfish (*Centropyge multicolor*) and Yellowhead angelfish (*Centropyge jocularis*) (Teleostei: Pomacanthidae) Mitochondrial DNA (In press)
- Shen KN, Chang CW, Chen CH, **Hsiao CD***. Complete mitogenomes of Armitage angelfish (*Apolemichthys armitagei*) and Griffisi angelfish (*Apolemichthys griffisi*) (Teleostei: Pomacanthidae) Mitochondrial DNA (In press)
- Loh KH, Shao KT, Chen CH, Chen HM, YH Then, Loo PL, Lim PE, Chong VC, Shen KN*, **Hsiao CD***. Next generation sequencing yields the complete mitogenome of two moray eels of *Gymnothorax formosus* and *Scuticaria tigrina* (Anguilliformes: Muraenidae) Mitochondrial DNA (In press)
- Hsiao CD**, Shen KN, Tsai SY, Wu SC, Chen CH, Chang CW*. The complete mitogenome of Japanese shallow angelfish (*Genicanthus semifasciatus*) and Ornate angelfish (*Genicanthus bellus*) (Teleostei: Pomacanthidae) Mitochondrial DNA (In press)
- Shen KN, Chang CW, Tsai SY, Wu SC, Lin ZH, Chan YF, Chen CH, **Hsiao CD***, P Borsa. Next generation sequencing yields the complete mitogenome of Leopard whipray (*Himantura leoparda*) and Blue-spotted stingray (*Neotrygon kuhlii*) (Chondrichthyes: Dasyatidae) Mitochondrial DNA (In press)
- Hsiao CD**, Shen KN, Ching TY, Wang YH, Ye JJ, Tsai SY, Wu SC, Chen CH, Wang CH*. The complete mitochondrial genome of the cryptic "lineage A" big-fin reef squid, *Sepioteuthis lessoniana* (Cephalopoda: Loliginidae) in Indo-West Pacific. Mitochondrial DNA (In press)
- Loh KH, Shao KT, Chen HM, Chen CH, Loo PL, Then YH, Lim PE, Chong VC, Shen KN*, **Hsiao**

CD*. Next generation sequencing yields the complete mitochondrial genome of the longfang moray, *Enchelynassa canina* (Anguilliformes: Muraenidae). Mitochondrial DNA (In press)

Loh KH, Shao KT, Chen HM, Chen CH, Chong VH, Loo PL, Shen KN*, **Hsiao CD***. Next generation sequencing yields the complete mitochondrial genome of the Zebra moray, *Gymnomuraena zebra* (Anguilliformes: Muraenidae). Mitochondrial DNA (In press)

Shen KN, Tsai SY, Chen CH, **Hsiao CD***, Durand JD. Next generation sequencing yields the complete mitochondrial genome of the largescale mullet, *Liza macrolepis* (Teleostei: Mugilidae). Mitochondrial DNA (In press)

Shen KN, Chen CH, **Hsiao CD***, Durand JD. Next generation sequencing yields the complete mitochondrial genome of the flathead mullet, *Mugil cephalus* cryptic species in East Australia (Teleostei: Mugilidae). Mitochondrial DNA (In press)

Shen KN, Chang CW, Chen CH, **Hsiao CD***. Next generation sequencing yields the complete mitochondrial genome of the Regal angelfish, *Pygoplites diacanthus* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Shen KN, Chang CW, Chen CH, Chassaing A, **Hsiao CD***. Next generation sequencing yields the complete mitochondrial genome of the Japanese angelfish, *Centropyge interrupta* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Shen KN, Chang CW, Loh KH, Chen CH, **Hsiao CD***. Next generation sequencing yields the complete mitochondrial genome of the Clarion angelfish, *Holacanthus clarionensis* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Shen KN, Chang CW, Chen CH, **Hsiao CD***. The complete mitochondrial genome of the Tiger angelfish, *Apolectichthys kingi* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Shen KN, Loh KH, Chen CH, **Hsiao CD***. The complete mitochondrial genome of the Blue-face angelfish, *Pomacanthus xanthometapon* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Hsiao CD, Shen KN, Chen CH, Chang CW*. The complete mitochondrial genome of the Vermiculated angelfish (*Chaetodontoplus mesoleucus*) (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Ye JJ, Shen KN, Chen CH, **Hsiao CD**, Chang CW*. The complete mitochondrial genome of the Emperor angelfish, *Pomacanthus imperator* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

2014 (11 papers)

Shen KN, Chang CW, Chen CH, **Hsiao CD***. The complete mitochondrial genome of the Spectacled angelfish, *Chaetodontoplus conspicillatus* (Perciformes: Pomacanthidae). Mitochondrial DNA (In press)

Shen KN, Chen CH, **Hsiao CD***. Next generation sequencing yields the complete mitochondrial genome of the Hornlip mullet, *Plicomugil labiosus* (Teleostei: Mugilidae). Mitochondrial DNA (In press)

Shen KN, Yen TC, Chen CH, Ye JJ, **Hsiao CD***. The complete mitochondrial genome of the cryptic "lineage B" big-fin reef squid, *Sepioteuthis lessoniana* (Cephalopoda: Loliginidae) in Indo-West Pacific. Mitochondrial DNA (In press).

Shen KN, Yen TC, Chen CH, Li HY, Chen PL, **Hsiao CD***. Next generation sequencing yields the complete mitochondrial genome of the flathead mullet, *Mugil cephalus* cryptic species NWP2 (Teleostei: Mugilidae). Mitochondrial DNA (In press).

Chang TY, Huang TS, Wang HW, Chang SJ, Lo HH, Chiu YL, Wang YL, **Hsiao CD**, Tsai CH, Chan CH, You RI, Wu CH, Tsai TN, Cheng SM, Cheng CC*. miRNome traits analysis on endothelial lineage cells discloses biomarker potential circulating microRNAs which affect progenitor activities. *BMC Genomics*. 15: 802.

Huang SY, Feng CW, Hung HC, Chakraborty C, Chen CH, Chen WF, Jean YH, Wang HM, Sung CS,

Sun YM, Wu CY, Liu W, **Hsiao CD**, Wen ZH*. A novel zebrafish model to provide mechanistic insights into the inflammatory events in carrageenan-induced abdominal edema. *PLoS One* 9:e104414.

Chen CH, Lin DS, Cheng CW, Lin CJ, Lo YK, Yen CC, Lee YL*, **Hsiao CD***. Cdc6 cooperates with c-Myc to promote genome instability and EMT in zebrafish. *Oncotarget* 5:6300-6311.

Lim KH*, Lin HC, Chen GS, Chiang YH, **Hsiao CD**, Kuo YY. CALR Mutations in Myeloproliferative Neoplasms. *International Journal of Gerontology* 8:105.

Feng CW, Wen ZH, Huang SY, Hung HC, Chen CH, Yang SN, Chen NF, Wang HM, **Hsiao CD**, Chen WF. Effects of 6-Hydroxydopamine Exposure on Motor Activity and Biochemical Expression in Zebrafish (*Danio Rerio*) Larvae. *Zebrafish* 11:227-239.

Yen CC*, **Hsiao CD**, Chen WM, Wen YS, Lin YC, Chang TW, Yao FY, Hung SC, Wang JY, Chiu JH, Wang HW, Lin CH, Chen TH, Chen PC, Liu CL, Tzeng CH, Fletcher JA. Cytotoxic effects of 15d-PGJ2 against osteosarcoma through ROS-mediated AKT and cell cycle inhibition. *Oncotarget*. 5:716-725.

Lin DS*, Chuang TP, Chiang MF, Ho CS, **Hsiao CD**, Huang YW, Wu TY, Wu JY, Chen YT, Chen TC, Li LH. De novo MECP2 duplication derived from paternal germ line result in dysmorphism and developmental delay. *Gene*. 533: 78-85.

2013 (5 papers)

Chen SY, Shih HY, Lin SJ, **Hsiao CD**, Li ZC, Cheng YC*. Etv5a regulates the proliferation of ventral mesoderm cells and the formation of hemato-vascular derivatives. *J Cell Sci*. 126: 5626-5634.

Lin CY, Huang CC, Wang WD, **Hsiao CD**, Cheng CF, Wu YT, Lu YF, Hwang SP*. Low temperature mitigates cardia bifida in zebrafish embryos. *PLoS One*. 8:e69788.

Shih DF, **Hsiao CD**, Min MY, Lai SL, Yang CW, Lee WT*, Lee SJ*. Aromatic L-Amino Acid Decarboxylase (AADC) Is Crucial for Brain Development and Motor Functions. *PLoS One*. 8:e71741.

Lin DS*, Chiang MF, Ho CS, **Hsiao CD**, Lin CY, Wang NL, Chuang CK, Huang YW, Chang PC, Liu HL. Low-frequency enzyme replacement therapy in late-onset pompe disease. *Muscle Nerve* 47:612-613.

Hsiao CD*. Memorial Article on Chi-Bin Chien. *Hereditas (Beijing)*, 35:519-521. (Invited review article)

2012 (3 papers)

Chen CF, Chen CP, **Hsiao CD***. Zebrafish research in Taiwan. *Hereditas (Beijing)*. In press. (Invited review article)

Chu CY, Chen CF, Rajendran R. Samuel, Shen CN, Chen TH, Yen CC, Chuang CK, Lin DS, **Hsiao CD***. Overexpression of Akt1 enhances adipogenesis and leads to lipoma formation in zebrafish. *PLoS One*. 7:e36474.

Chen YC, Chen YC, Lin WD, **Hsiao CD**, Chiu HW, Ho JM*. Bio301: a web-based EST annotation pipeline that facilitates functional comparison studies. *ISRN Bioinformatics (In press)*.

2011 (6 papers)

Huang SH, **Hsiao CD**, Lin DS, Chow CY, Chang CJ, Liao I*. Imaging of Zebrafish In Vivo with Second-Harmonic Generation Reveals Shortened Sarcomeres Associated with Myopathy Induced by Statin. *PLoS One*. 6:e24764.

Lin YS, Tsai SC, Lin HC, **Hsiao CD**, Wu SM*. Changes of glycogen metabolism in the gills and hepatic tissue of tilapia (*Oreochromis mossambicus*) during short-term Cd exposure. *Comp Biochem Physiol C Toxicol Pharmacol*. 154:296-304.

Liu DW, Hsu CH, Tsai SM, **Hsiao CD**, Wang WP*. A Variant of Fibroblast Growth Factor Receptor

2 (Fgfr2) Regulates Left-Right Asymmetry in Zebrafish. PLoS One. 6:e21793.

Chen CF, Chu CY, Chen TH, Lee SJ, Shen CN, **Hsiao CD***. Establishment of a transgenic zebrafish line for superficial skin ablation and functional validation of apoptosis modulators in vivo. PLoS One. 6:e20654.

Lin DS*, **Hsiao CD**, Liao I, Lin SP, Chiang MF, Chuang CK, Wang TJ, Wu TY, Jian YR, Huang SF, Liu HL. CNS-targeted AAV5 gene transfer results in global dispersal of vector and prevention of morphological and function deterioration in CNS of globoid cell leukodystrophy mouse model. Mol Genet Metab. 103:367-377.

Yeh CM, Liu YC, Chang CJ, Lai SL, **Hsiao CD**, Lee SJ*. Ptenb mediates gastrulation cell movements via Cdc42/AKT1 in zebrafish. PLoS One. 6:e18702.