

Siming ZHAO

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Education

The Hong Kong Polytechnic University

Hong Kong

BSc (Hons) in Applied Biology and Biotechnology

(Sep 2016-May 2020)

with First Class Honours

GPA: 3.92/4.0 | Major GPA: 3.99/4.0

Relevant Coursework: Human Physiology, Microbiology, DNA Technology, Biochemical Technology, Biochemistry, Metabolism and Diseases, Bioinformatics

Final Year Project: Study the role of CBX2 (Chromobox Homolog 2) in the pathogenesis of Hepatocellular Carcinoma (HCC) | Dr. Ko's Lab
(Sep 2019 -May 2020)

CBX2 is a compartment of PRC1 which may play a role in the maintenance of cancer stem cells in HCC through epigenetic regulation. I mainly work on the following:

- Overexpression of CBX2 in primary human hepatocytes and other HCC cell lines by stable transfection
- Functional Assays of different cell lines after the overexpression *in vitro*
- Western blot to investigate the expression level in different cell lines

Georgia Institute of Technology

Atlanta, USA

Non-degree/Exchange

(Jan 2019-May 2019)

GPA: 4.0/4.0

Relevant Coursework: Cell Molecular Biology, Protein Biology, Immunology & immunochemistry, Cell Molecular Biology Lab

Research/Work Experience

Dr Nie's Lab, Georgia Institute of Technology (Rotation)

Atlanta, USA

(Jan 2021 – May 2021)

Project: To study the role of DBN1 in neural crest cell migration. Drebrin encoded by DBN1 is an actin-binding protein that may have some regulatory effects on cytoskeleton dynamics, leading to mediating cell migration.

I mainly practiced laboratory skills and did literature review in my first semester

- Microinjection of different RNAs into *Xenopus Laevis* Embryos
- Cryosectioning
- Immunofluorescence staining

**Dr. Chen's Lab, Schepens Eye Research Institute,
Department of Ophthalmology, Harvard Medical School**

Boston, USA

(May 2019 – August 2019)

Project: Understand the pathogenesis and mechanisms underlying neuron loss in glaucoma with a goal of developing a novel therapy through the induction of immunotolerance

Glaucoma is associated with continuous neuron loss, which is found relevant to the autoimmunity. Therefore, we are trying to induce the specific immunotolerance to HSP, our target protein to see if it can alleviate the deterioration of glaucoma on mouse model. I focused on:

- Flow cytometry to define T cell subtypes from lymph nodes and retinas of glaucomatous mice with/without the induction of specific immunotolerance
- Immunofluorescence staining to study the loss of retina ganglion cells
- Data analysis of electroretinography, tissue dissection etc

Dr Ko's Lab, The Hong Kong Polytechnic University

*Hong Kong
(Sep 2017-Jul 2020)*

I worked as a student assistant in Dr. Ko's lab and learned basic laboratory skills. I also helped some PhD students and was involved in their projects such as the investigation of CTCF (CCCTC-binding factor) in carcinogenesis. After that I decided to stay in Dr. Ko's lab as a final year student and study function of CBX2 gene in hepatocellular carcinoma.

Experimental Skills

Cell Culture, Western Blot, Electrophoresis, Extraction of DNA/RNA/Protein, PCR/qPCR, Cloning, Tissue dissection, Sectioning, Immunofluorescence staining, Fluorescence microscopy, Proliferation Assay, Phagocytosis Assay, Transfection, Griess Assay, Flow cytometry etc.

Awards and Scholarships

Dean's Honours List	2016/2017, 2018/2019&2019/2020
The Hong Kong Polytechnic University Scholarship	2018/2019 & 2019/2020
HKSAR Government Scholarship Fund -- Reaching Out Award	2018/2019
Commercial Ratio 50 th Anniversary Scholarship	2016/2017 & 2017/2018
Department of Applied Biology & Chemical Technology Scholarship for Hall Residents	2016/2017
Service-Learning Scholarship	2017/2018

Extra-curriculum Activities

Voluntary tutor -- Teaching migrant workers' children (2017)	<i>Shanghai, China</i>
Teaching Trip – Zhenfeng No.1 Middle School (2017)	<i>Guizhou, China</i>
Sub-committee member of HeartFire Education Service (Sep 2016-May 2017)	<i>Hong Kong</i>
MC of Talent Quest (2018);The Opening Ceremony of Safety Weeks (2017).	<i>Hong Kong</i>
Trainee Ambassador of International Student Ambassador Scheme (2016/2017)	<i>Hong Kong</i>
Student representative, The University Grants Committee Meeting (2018)	<i>Hong Kong</i>
Student Helper, Institute of Entrepreneurship, PolyU (2018).	<i>Hong Kong</i>