

Chien-Ling HUANG
(Assistant Professor)



[Last update: 13 August 2019]

QUALIFICATIONS: PD Fellow (CGU/Taiwan; UCC/Ireland), 2009-2015
PhD (Biomedical Sciences), Chang Gung University (CGU), 2009
MSc (Medical Biotechnology), CGU, 2004
BSc (Medical Biotechnology and Laboratory Science), CGU, 2002
Licensed Medical Technologist (Taiwan), 2002

BRIEF OUTLINE OF EXPERIENCE AND POSTS HELD:

Jan. 2015-present	Assistant Professor , Department of Health Technology and Informatics (HTI), The Hong Kong Polytechnic University (PolyU), Hong Kong
Jan. 2018-present	Associate Research Fellow , The Hong Kong Polytechnic University Shenzhen Research Institute (PolyU SZRI)
Sep. 2015-present	Deputy Programme Leader of BSc in Medical Laboratory Science, HTI, PolyU
2014-2015	Senior Post-Doctoral Researcher , Centre for Research in Vascular Biology (CRVB), University College Cork (UCC), Cork, Ireland
2011-2014	Post-Doctoral Researcher , CRVB, UCC, Cork, Ireland
2009-2011	Post-Doctoral Fellow , CGU, Tao-Yuan, Taiwan

RESEARCH INTERESTS:

Haematology & Molecular diagnostics: non-coding RNAs in blood malignancy; high-throughput sequencing (i.e. scRNA-seq and clinical WGS)

Stem cell technology & Gene regulation: stem cell differentiation and reprogramming; gene regulation in complex diseases (i.e. vascular disease and myopia)

SERVICE TO PROFESSIONAL & SCIENTIFIC BODIES, CONSULTANCY, MEMBERSHIP OF PROFESSIONAL & LEARNED SOCIETIES:

Research

Editor, *Journal of Natural Science, Biology and Medicine*

Editorial Board Member, *Asia-Pacific Journal of Blood Types and Genes*

Member, International Society on Thrombosis and Haemostasis (ISTH)

Teaching & Management

Deputy Programme Leader, BSc in Medical Laboratory Science (HTI/PolyU) (2015-present)

Member, Committee on General University Requirements, Academic Planning and Regulations Committee (PolyU) (2019-present)

Subject Leader, Molecular Diagnosis of Human Disease (HTI44002) (2015-present)

Subject Lecturer, Haematology & Transfusion Science (HTI34010/HTI34011/HTI5613) (2015-present)

Visiting Lecturer/Thesis Supervisor, DHSc in Medical Laboratory Science (FHSS/PolyU) (2018-present)

Deputy Enrollment Officer, BSc in Medical Laboratory Science (HTI/PolyU) (2015-2019)

Elective Member, Departmental Management Committee (DMC) (HTI/PolyU) (2016-2018)

AWARDS:

Funded Projects and Grants Received- (Total amount of grants >HK\$8.5 million)

1. **Health and Medical Research Fund**, 2019 (Principal Investigator) (>HK\$1.2 million)
Project title: Evaluating the diagnostic yield of using low-pass whole-genome sequencing to identify chromosome abnormalities in paediatric patients with developmental defects
2. **Griffith U and PolyU Collaborative Research Grants**, 2019 (Principal Investigator)
Project title: Establish Human Pluripotent Stem Cell-derived Bone Marrow-on-a-chip for Studying the Molecular Insights of Myeloproliferative Neoplasms (MPNs)
3. **Collaborative PhD Training Programme with Southern University of Science and Technology (SUSTech)**, 2019 (Chief Supervisor of the 4-year PhD studentship; the total stipend will be supported by SUSTech and lead to PolyU PhD degree)
4. **National Natural Science Foundation of China (NSFC; Young Scientists Fund)**, 2017 (Principal Investigator) *Project title: Regulation of Smooth Muscle Progenitor Cell-derived Vascular Tissues by Myocardin-mediated Long Non-coding RNA and Its Implications for Bio-engineering*
5. **Griffith U and PolyU Collaborative Research Grants**, 2017 (Principal Investigator)
Project title: Direct photoreceptor differentiation of human mesenchymal stem cells by manipulating miRNA-lncRNA-mRNA triplet
6. **Central Research Grant**, PolyU, 2017 (Principal Investigator)
Project title: Exploring the Role of JAK2-mediated LncRNAs in Myeloproliferative Neoplasms
7. **Griffith U and PolyU Collaborative Research Grants**, 2016 (Principal Investigator of PolyU)
Project title: New pro-angiogenic factors for tissue bioengineering: SDF-1-CXCR4
8. **Strategic Development Special Project** (Translational Medical Project), PolyU, 2016 (Co-Investigator)
9. **Central Research Grant**, PolyU, 2016 (Co-Investigator)
10. **Large Equipment Fund**, AoEC, PolyU, 2015 (Team Leader)
Project title: BioFlux System (Live-cell Functional Analysis under Mechanical Shear Flow)
11. **Government of Ireland Fellowship Grant**, 2014 (Irish Research Council, GOIPD/2014/10) (Principal Investigator) *Project title: Molecular Regulation of Platelets-Bound Vascular Progenitor Cells in Heart Repair*
12. **ATVB Travel Award for Young Investigators**, American Heart Association (AHA) 2014 (Awardee with Best Poster Thesis)
Project title: Synthetic Modified RNA Driven Delivery of Insulin-like Growth Factor-1 Promotes Early Cardiomyocyte Survival Post-acute Myocardial Infarction

13. **Travel Grant of National Science Council**, 2010 (Principal Investigator, NSC-99-2914-I-182-003-A1)
Project title: *Identification of A Novel Tumor Necrosis Factor Receptor-Associated Factor 6-Binding Partner That is A Potential Lysine-63 Linked Ubiquitination Substrate*
14. **Travel Grant of National Science Council**, 2007 (Principal Investigator, NSC-96-2922-I-182-005)
Project title: *Platelet Protein Disabled-2 is Required for Embryonic Stem Cell-Derived Mesoderm Formation and Megakaryocytic Differentiation*
15. **Student Research Grant of National Science Council**, 2001 (Principal Investigator, NSC-90-2815-C-182-009-B)
Project title: *The Effects of DHEA on G6PD Activity Inhibition and Cell Growth Retardation*

Teaching Projects

1. **Teaching Development Grant**, Smaller-Scale Project (July 2017 - present; Co-Principal Investigator)
Project title: *Developing a Repository of Digitised Virtual Slides to Promote Active Learning in Haematology Diagnostics via Flipped Practical Approach*
2. **Teaching Development Grant**, Internationalising the Student Learning Experience Project (Sept 2016 - Dec 2016; Principal Investigator)
3. **Large Equipment Fund for Teaching**, Establishing Platelet/Whole Blood Optical Lumi-Aggregometer (April 2016 - Oct 2016; Principal Investigator)

Conference Awards-

- 2014 ATVB Travel Award for Young Investigators, American Heart Association Scientific Sessions 2014, USA
- 2011 Young Investigator Awards of the 23rd Congress of the International Society on Thrombosis and Haemostasis (ISTH2011), Japan
- 2006 Outstanding Thesis Awards of the 14th Annual Meeting of the Chinese Society of Cell and Molecular Biology, Taiwan
- 2006 Outstanding Poster Thesis Awards of the 21st Joint Annual Conference of Biomedical Science, Taipei, Taiwan

PEER-REVIEWED PUBLICATIONS:

SCI Journal Paper	Impact factor	Best ranking
1. Wong NK, Huang CL* , Islam R, Yip SP*. Long non-coding RNAs in hematological malignancies: Translating basic techniques into diagnostic and therapeutic strategies. <i>J Hematol Oncol.</i> 11:131, 2018. (*Corresponding authors) [My contribution: Study design, securing funds, intellectual input and critical review/revision of manuscript.]	8.731 (2018)	5/73 (6.8%)
2. Yau MY, Lu X, Huang CL , Wong CM. Long non-coding RNAs in obesity-induced cancer. <i>Non-Coding RNA</i> 4(3), 2018. [<i>New SCI Journal</i>] [My contribution: Intellectual input and critical review of manuscript.]	-	-
3. Turner EC [#] , Huang CL [#] , Sawhney N, Govindarajan K, Clover AJ, Martin K, Browne TC, Whelan D, Kumar AH, Mackrill JJ, Wang S, Schmeckpeper J, Stocca A, Pierce WG, Leblond AL, Cai L,	5.614 (2018)	17/162 (10.5%)

O'Sullivan DM, Buneker CK, Choi J, MacSharry J, Ikeda Y, Russell SJ, Caplice NM. A novel selectable Islet 1 positive progenitor cell reprogrammed to expandable and functional smooth muscle cells. *Stem Cells* 34:1354-68, 2016. (**#Co-first authors**)

[My contribution: Study design, perform experiments, intellectual input, draft and critical review/revision of manuscript.]

4. **Huang CL**, Leblond AL, Turner EC, Kumar AH, Martin K, Whelan D, O'Sullivan DM, Caplice NM. Synthetic chemically modified mRNA-based delivery of cytoprotective factor promotes early cardiomyocyte survival post-acute myocardial infarction. *Mol Pharm.* 12:991-6, 2015. **4.396** 39/267 (2018) **(14.6%)**

[My contribution: Study design, perform experiments, intellectual input, draft and critical review/revision of manuscript.]
5. Ali MT, Martin K, Kumar AH, Cavallin E, Pierrou S, Gleeson BM, McPheat WL, Turner EC, **Huang CL**, Khider W, Vaughan C, Caplice NM. A novel CX3CR1 antagonist eluting stent reduces stenosis by targeting inflammation. *Biomaterials* 69:22-9, 2015. **10.273** 1/32 (2018) **(3.1%)**

[My contribution: Study design, perform experiments, intellectual input and critical review/revision of manuscript.]
6. Tsai HJ[#], **Huang CL**[#], Huang DY, Lin CC, Cooper JA, Cheng JC, and Tseng C-P. Disabled-2 is required for efficient haemostasis and platelet activation by thrombin in mouse. *Arterioscler Thromb Vasc Biol.* 34:2404-12, 2014. (**#Co-first authors**) **6.618** 4/65 (2018) **(6.2%)**

[My contribution: Study design, perform experiments, intellectual input, draft and critical review/revision of manuscript.]
7. Kumar AH, Martin K, Doyle B, **Huang CL**, Krishnan G, Ali MT, Skelding KA, Wang S, Gleeson BM, Jahangeer S, Ritman EL, Russell SJ, Caplice NM. Intravascular cell-delivery device for therapeutic VEGF-induced angiogenesis in chronic vascular occlusion. *Biomaterials* 35:9012-22, 2014. **10.273** 1/32 (2018) **(3.1%)**

[My contribution: Study design, perform experiments, intellectual input and critical review/revision of manuscript.]
8. Martin K, **Huang CL**, Caplice NM. Regenerative approaches to post-myocardial infarction heart failure. *Curr Pharm Des.* 20:1930-40, 2014. **4.868** 18/205 (2018) **(8.8%)**

[My contribution: Study design, intellectual input, draft and critical review/revision of manuscript.]
9. Turner EC, **Huang CL**, Govindarajan K, Caplice NM. Identification of a Klf4-dependent upstream repressor region mediating transcriptional regulation of the myocardin gene in human smooth muscle cells. *Biochim Biophys Acta. - Gene Regulatory Mechanisms* 1829:1191-201, 2013. **4.599** 8/72 (2018) **(11.1%)**

[My contribution: Study design, perform experiments, intellectual input and critical review/revision of manuscript.]

10. Hung WS*, **Huang CL***, Fan JT*, Huang DY, Yeh CF, Cheng JC, **4.739** 55/298
Tseng C-P. The endocytic adaptor protein Disabled-2 is required (2018) **(18.5%)**
for cellular uptake of fibrinogen. *Biochim Biophys Acta. –
Molecular Cell Research* 1823:1778-88, 2012. (***Co-first
authors**)
[My contribution: Study design, perform experiments, intellectual input, draft and
critical review/revision of manuscript.]
11. **Huang CL**, Cheng JC, Kitajima K, Nakano T, Yeh CF, Chong KY, **4.522** 11/81
Tseng C-P. Disabled-2 is required for mesoderm differentiation (2018) **(13.6%)**
of murine embryonic stem cells. *J Cell Physiol.* 225:92-105,
2010.
[My contribution: Study design, perform experiments, intellectual input, draft and
critical review/revision of manuscript.]
12. Tseng WL, **Huang CL**, Chong KY, Liao CH, Stern A, Cheng JC, **7.014** 31/298
Tseng C-P. Reelin is a platelet protein and functions as a positive (2018) **(10.4%)**
regulator of platelet spreading on fibrinogen. *Cell Mol Life Sci.*
67:641-53, 2010.
[My contribution: Study design, perform experiments, intellectual input, draft and
critical review/revision of manuscript.]
13. **Huang CL**, Cheng JC, Stern A, Hsieh JT, Liao CH, Tseng C-P. **4.517** 65/193
Disabled-2 is a novel integrin α IIb-binding protein that (2018) **(33.7%)**
negatively regulates platelet-fibrinogen interactions and platelet
aggregation. *J Cell Sci.* 119:4420-30, 2006.
[My contribution: Study design, perform experiments, intellectual input, draft and
critical review/revision of manuscript.]
14. Cheng JC, **Huang CL**, Lin CC, Chen CC, Chang YC, Chang SS, and **6.891** 1/29
Tseng C-P. Rapid detection and identification of clinically (2018) **(3.4%)**
important bacteria by high-resolution melting analysis after
broad-range ribosomal RNA real-time PCR. *Clin Chem.* 52:1997-
2004, 2006.
[My contribution: Study design, perform experiments, intellectual input, draft and
critical review/revision of manuscript.]
15. Zhou J, Hernandez G, Tu SW, **Huang CL**, Tseng C-P, and Hsieh JT. **8.378** 21/229
The role of DOC-2/DAB2 in modulating androgen receptor- (2018) **(9.2%)**
mediated cell growth via the nongenomic c-Src-mediated
pathway in normal prostatic epithelium and cancer. *Cancer Res.*
65:9906-13, 2005.
[My contribution: Perform experiments, intellectual input and critical review/revision of
manuscript.]
16. Tseng C-P, Chang P, **Huang CL**, Cheng JC, and Chang SS. **2.675** 30/72
Autocrine signaling of platelet-derived growth factor regulates (2018) **(41.7%)**
disabled-2 expression during megakaryocytic differentiation of
K562 cells. *FEBS Letters* 579:4395-401, 2005.

[My contribution: Study design, perform experiments, intellectual input and critical review/revision of manuscript.]

17. Tseng C-P, **Huang CL**, Chong KY, Hung IJ, and Chiu DT. Rapid detection of glucose-6-phosphate dehydrogenase gene mutations by denaturing high-performance liquid chromatography. *Clin Biochem.* 38:973-80, 2005. **2.430** 11/29 (2018) (37.9%)
 [My contribution: Perform experiments, intellectual input and critical review/revision of manuscript.]
18. **Huang CL**, Cheng JC, Liao CH, Stern A, Hsieh JT, Wang CH, Hsu HL, and Tseng C-P. Disabled-2 is a negative regulator of integrin α IIb β 3-mediated fibrinogen adhesion and cell signaling. *J Biol Chem.* 279:42279-89, 2004. **4.106** 81/298 (2018) (27.2%)
 [My contribution: Study design, perform experiments, intellectual input, draft and critical review/revision of manuscript.]
19. Tseng C-P, **Huang CL**, Huang CH, Stern A, Cheng JC, Tseng CH, and Chiu DT. Disabled-2 small interfering RNA modulates cellular adhesive function and MAPK activity during megakaryocytic differentiation of K562 cells. *FEBS Letters* 541:21-7, 2003. **2.675** 30/72 (2018) (41.7%)
 [My contribution: Study design, perform experiments, intellectual input and critical review/revision of manuscript.]

Selected Key Abstracts (selected from 20)

1. **Huang CL**, Leblond AL, Turner EC, Kumar AHS, Martin K, Whelan D, O'Sullivan DM, Caplice NM. Synthetic modified RNA driven delivery of insulin-like growth factor-1 promotes early cardiomyocyte survival post-acute myocardial infarction. *Circulation* 2014.
Award: Young Investigator Travel Awards from AHA to CLH.
2. Turner EC, **Huang CL**, Sawhney N, Govindarajan K, Kumar AHS, Clover JP, Martin K, Leblond AL, Wang S, and Caplice NM. Identification of a novel adult smooth muscle-like stem/progenitor cell that facilitates formation of tissue engineered vascular tissue for use as vascular grafts in vivo. *Circ Res.* 2013.
Award: Young Investigator Travel Awards from AHA to ECT.
3. Tsai HJ, **Huang CL**, Huang DY, Lin CC, Cooper JA, Cheng JC, and Tseng C-P. Disabled-2 is required for efficient platelet activation by thrombin in mouse. *J Thromb Haemost.* 2013.
Award: Travel Grants/Awards from ISTH to HJT.
4. **Huang CL**, Tsai HJ, Lin CC, Chang YW, Cooper JA, Cheng JC, and Tseng C-P. *In vivo* role of Disabled-2 (DAB2) in haemostasis and platelet function: studies using a megakaryocyte lineage-restricted DAB2 knockout. *J Thromb Haemost.* 2011.
Award: Young Investigator Awards from ISTH to CLH.
5. **Huang CL**, Cheng JC, Liu SY, Tseng C-P. Identification of a novel tumor necrosis factor receptor-associated factor 6-binding partner that is a potential lysine-63 linked ubiquitination substrate. *Proceedings of the 101th Annual Meeting of the American Association for Cancer Research (AACR).* 2010.
Award: Travel Grants/Awards to CLH- National Science Council (NSC-99-2914-I-182-003-A1).

6. **Huang CL**, Cheng JC, Lin CC, and Tseng C-P. Disabled-2 is a key regulator during mesodermal differentiation and megakaryopoiesis of murine embryonic stem cells. *J Thromb Haemost.* 2009.
Award: Travel Grants/Awards to CLH- Foundation for the advancement of outstanding scholarship; The Chinese Society of Cell and Molecular Biology.
7. **Huang CL**, Cheng JC, and Tseng C-P. Platelet protein Disabled-2 is required for embryonic stem cell-derived mesoderm formation and megakaryocytic differentiation. *J Thromb Haemost.* 2007.
Award: Travel Grants/Awards to CLH- National Science Council (NSC-96-2922-I-182-005); The Chinese Society of Cell and Molecular Biology.
8. Tseng C-P, **Huang CL**, Cheng JC, Liao CH. Disabled-2 is a secreted anti-adhesive molecule during platelet activation and aggregation. *J Thromb Haemost.* 2005.
Award: Travel Grants/Awards from ISTH to CPT.

Postgraduate Students Supervised

PhD students

AU Man Ting (2015-present)

Project Title: *Role of Endothelin Receptor Subtypes in Endochondral Ossification and Pathogenesis of Osteoarthritis*

WONG Nonthaphat (2016-present)

Project Title: *Role of Long Non-coding RNAs in JAK2-V617F-positive Myeloproliferative Neoplasms and Myeloid Malignancies*

MARUF Abdullah (2016-present)

Project Title: *Identification of Functional Germline Polymorphisms in JAK2-V617F Positive Myeloproliferative Neoplasms*

KWARTENG Regina (2016-present)

Project Title: *Functional Studies of Putative Causal Variants of Myopia Identified by Genome Wide Association Studies*

ADESANYA Adenike (2017-present)

Project Title: *The H19/microRNA-675-mediated Mechanisms in Regulating Drug Resistance of Chronic Myeloid Leukaemia*

Master students

(Completed with Dissertation Thesis)

CHEUNG Irene (2015-2017)

Project Title: *Development of a novel single-tube molecular assay for the detection of JAK2, MPL and CALR mutations in myeloproliferative neoplasm*

TAI Wing Yan (2016-2017)

Project Title: *Analysis of Long Non-coding RNA Expression Profiles in Myeloproliferative Neoplasms as Potential Biomarkers for Diagnosis and Treatment Management*

LIU Ka Na (2016-2017)

Project Title: *To identify major SNPs of long non-coding RNA HOTAIR contributing to myeloproliferative neoplasms in Hong Kong Chinese population*

CHAN Edward (2016-2017)

Project Title: *Investigating the effects of TGF- β 1 on regulating mesenchymal stem cell differentiation and immune response*

CHAN Harold (2017-2018)

Project Title: *The roles and regulatory features of lncRNA-H19 on smooth muscle cell differentiation from human mesenchymal stem cell*

MA Man Hin (2018-2019)

Project Title: *The Development and Evaluation of Molecular Techniques for the Monitoring of Minimal Residual Disease in Chronic Myelogenous Leukaemia*

TSE Hing Fung (2018-2019)

Project Title: *Association of single-nucleotide polymorphism in the SH2B3 gene with JAK2 V617F-positive myeloproliferative neoplasms*