



Dr. Tsong-Long Hwang

Position :

Dean and Distinguished Professor, College of Human Ecology, Chang Gung University of Science and Technology

Professor, Graduate Institute of Natural Products, College of Medicine, Chang Gung University

Laboratory : Cell Pharmacology

Degree : Ph.D.

Graduated from : National Taiwan University

Phone : +886-3-2118800 ext. 5523

E-MAIL : htl@mail.cgu.edu.tw

Research Interests

Neutrophilic Inflammation, Innate immunity, signal transduction, Phytomedicine, Drug research and development

Research Summary

Inflammatory responses are important in host defense, however dysregulated inflammation results in tissue damage. Activated neutrophils and monocytes play a

critical role in a variety of acute and chronic inflammatory diseases. The overall goals of work in our laboratory are to understand the molecular and cellular mechanisms in neutrophil and monocyte activation and to study the pharmacological actions of bioactive compounds for developing better therapeutic strategies in immune-mediated inflammatory disorders.

Board Certification / Professional Affiliations

The Pharmacological Society in Taiwan

The Chinese Society of Immunology

The Society of Chinese Natural Medicine

Society for Free Radical Research-Taiwan

The Pharmaceutical Society of Taiwan

Toxicology Society of Taiwan

Health Food Society of Taiwan

American Chemical Society

The American Association of Immunologists

American Society of Pharmacognosy

Society for Redox Biology and Medicine

Ongoing Projects

1. Development of *Lonicera japonica* effective compounds for reducing neutrophilic inflammation to treat acute respiratory distress syndrome
2. Establishment of network pharmacology of *Agrimonia pilosa* Ledeb. and its application in neutrophilic inflammatory diseases
3. Research and development of cAMP-elevating agent to treat neutrophilic inflammatory diseases
4. Development of Taiwan's orchids as functional foods for inflammatory metabolic disorders

10 Selected Publications (> 440 Papers)



ORCID iD: <http://orcid.org/0000-0002-5780-3977>

1. Tsai YF, Chen CY, Lin IW, Leu YL, Yang SC, Syu YT, Chen PJ, **Hwang TL***. Imperatorin alleviates psoriasiform dermatitis by blocking neutrophil respiratory burst, adhesion, and chemotaxis through selective phosphodiesterase 4 inhibition. *Antioxid Redox Signal*. 2021 Oct 10;35(11):885-903.
2. Kao TI, Chen PJ, Wang YH, Tseng HH, Chang SH, Wu TS, Yang SH, Lee YT, **Hwang TL***. Bletininib ameliorates neutrophilic inflammation and lung injury by inhibiting Src family kinase phosphorylation and activity. *Br J Pharmacol*. 2021 Oct;178(20):4069-4084.
3. Wu YH, Kuo CF, Hsieh AH, Hsieh HL, Chan YF, **Hwang TL***. Upregulation of miR-210–5p impairs dead cell clearance by macrophages through the inhibition of Sp1-and HSCARG-dependent NADPH oxidase pathway. *Free Radic Biol Med*. 2021 Aug 20;172:441-450.
4. Yang SC, Tsai YF, Pan YL, **Hwang TL***. Understanding the role of neutrophils in acute respiratory distress syndrome. *Biomed J*. 2021 Aug;44(4):439-446. (Review)
5. Lu YJ, Wang YH, Sahu RS, Chen JP, Dash BS, Chung PJ, Yang HW, Chuang EY*, **Hwang TL***. Mechanism of nanoformulated graphene oxide-mediated human neutrophil activation. *ACS Appl Mater Interfaces*. 2020 Sep 9;12(36):40141-40152.
6. Tsai YF, Chen CY, Chang WY, Syu YT, **Hwang TL***. Resveratrol suppresses neutrophil activation via inhibition of Src family kinases to attenuate lung injury. *Free Radic Biol Med*. 2019 Dec;145:67-77.
7. Liu FC, Yu HP, Chen PJ, Yang HW, Chang SH, Tzeng CC, Cheng WJ, Chen YR, Chen YL*, **Hwang TL***. A novel NOX2 inhibitor attenuates human neutrophil oxidative stress and ameliorates inflammatory arthritis in mice. *Redox Biol*. 2019 Sep;26:101273.
8. Chen PJ, Ko IL, Lee CL, Hu HC, Chang FR, Wu YC, Leu YL, Wu CC, Lin CY, Pan CY, Tsai YF, **Hwang TL***. Targeting allosteric site of AKT by 5,7-dimethoxy-1,4-phenanthrenequinone suppresses neutrophilic inflammation. *EBioMedicine*. 2019 Feb;40:528-540.

9. Chen CY, Tsai YF, Huang WJ, Chang SH, **Hwang TL***. Propofol inhibits endogenous formyl peptide-induced neutrophil activation and alleviates lung injury. Free Radic Biol Med. 2018 Dec;129:372-382.
10. Tsai YF, Chu TC, Chang WY, Wu YC, Chang FR, Yang SC, Wu TY, Hsu YM, Chen CY, Chang SH, **Hwang TL***. 6-Hydroxy-5,7-dimethoxy-flavone suppresses the neutrophil respiratory burst via selective PDE4 inhibition to ameliorate acute lung injury. Free Radic Biol Med. 2017 May;106:379-392.

Patents

1. **黃聰龍**、謝珮文、余黃平。苯并雜氧嗪酮衍生物，其製備方法以及包含有此等衍生物的藥學組成物。中華民國發明第 I 419884 號；專利權期間：20131221 - 20300623。
2. Pei-Wen Hsieh, **Tsong-Long Hwang**, Wen-Hui Wang, Ting-Yi Wang. Oxime-based compound, pharmaceutical composition containing the same and method for preparing the same. US 9,073,833 B1; Date of patent: Jul. 7, 2015.
3. 謝珮文、**黃聰龍**、王雯慧、王婷儀。2-胺基苯甲醛衍生物及其製備方法與用途。中華民國發明第 I 508938 號；專利權期間：20151121 -20340123。
4. 謝珮文、**黃聰龍**、王雯慧、王婷儀。オキシム系化合物、それを含む医薬組成物及びその調製方法。日本特許證特許第 5890512 號；專利權期間：20160226 - 20341211。
5. **黃聰龍**、謝珮文、黃吟婷、洪志豪。FPR1 拮抗劑的衍生物及其用途。中華民國發明第 I 537251 號；專利權期間：20160611 -20331008。
6. 陳金銓、呂彥禮、**黃聰龍**、方嘉佑、潘台龍。哺乳類 SIRT1 的活化劑。中華民國發明第 I 556818 號；專利權期間：20161111 -20350806。
7. **Tsong-Long Hwang**, Pei-Wen Hsieh, Yin-Ting Huang, Chih-Hao Hung. FPR1 antagonist derivatives and use thereof. US 9,593,144 B2; Date of patent: Mar. 14, 2017.
8. 謝珮文、**黃聰龍**、王雯慧、王婷儀。2-胺基苯甲醛衍生物及其製備方法與用途。中華人民共和國 ZL 2014 1 0199178.3；專利權期間：20170412 -20340511。
9. **黃聰龍**、蔡永豐、陳俊宇、郭亮鉉、鄭源斌、王至欣、張芳榮、吳永昌。第 I 型甲醯肼肽受體拮抗劑及其用途。中華民國發明第 I 606828 號；專利權期間：20171201 -20361228。
10. **黃聰龍**、謝珮文、黃吟婷、洪志豪。FPR1 拮抗劑的衍生物及其用途(一)。中華民國發明第 I 614021 號；專利權期間：20180211 -20331008。
11. **Tsong-Long Hwang**, Yung-Fong Tsai, Chun-Yu Chen, Liang-Mou Kuo, Yuan-Bin Cheng, Chih-Hsin Wang, Fang-Rong Chang, Yang-Chang Wu. Formyl peptide receptor 1 antagonists and uses thereof. US 9,895,329 B1; Date of

patent: Feb. 20, 2018.

12. 黃聰龍、陳義龍、曾誠齊、曾志華。嗜中性白血球發炎抑制劑及其用途。中華民國發明第 I 680973 號；專利權期間：20200101 -20381108。
13. **Tsong-Long Hwang**, Yeh-Long Chen, Cherng-Chyi Tzeng, Chih-Hua Tseng. Neutrophil inflammation inhibitor and uses thereof. US 10,654,848 B1; Date of patent: May 19, 2020.
14. 王瑞瑜、黃聰龍、呂彥禮、方嘉佑、吳佩玲、陳瑋琪、柯鎰錡。一種滋潤皮膚、具有良好的抗發炎效果之組成物。中華民國發明第 I 718407 號；專利權期間：20210211 -20380910。
15. 黃聰龍、蔡永豐、陳俊宇、郭亮銓、鄭源斌、王至欣、張芳榮、吳永昌。第 I 型甲醯肼肽受體拮抗劑及其用途。中華人民共和國 ZL 2016 1 1257556.4；專利權期間：20210326 -20361229。
16. 黃聰龍、陳柏任、曾馨慧。帕博西林用於製備治療罹患疾病的患者的醫藥組合物的用途。中華民國發明第 I 737999 號；專利權期間：20210901 -20390528。
17. 黃聰龍、張祐嘉、賴奎宏。9,11-開環類固醇 (9,11-secosteroids) 類化合物及其用於製備抑制發炎之醫藥組合物的用途。中華民國發明第 I 742793 號；專利權期間：20211011 -20400806。
18. 黃聰龍、陳柏任。利博西林用於製備治療罹患磷酸二酯酶 4 介導疾病的患者的醫藥組合物及用途。中華人民共和國 ZL 2020 1 0078474.3；專利權期間：20220419 -20400203。
19. **Tsong-Long Hwang**, Po-Jen Chen. Pharmaceutical composition and use for applying ribociclib in phosphodiesterase 4-mediated disease treatment of patient and inhibition of phosphodiesterase 4 activity. US 11,351,172 B2; Date of patent: Jun. 7, 2022.
20. 黃聰龍、陳柏任、曾馨慧。帕博西林用於製備治療罹患疾病的患者及抑制磷脂酰肌醇 3-激酶的活性的醫藥組合物及用途。中華人民共和國 ZL 2020 1 0078609.6；專利權期間：20220624 -20400203。
21. 黃聰龍、陳柏任。利博西林用於製備治療罹患磷酸二酯酶 4 介導疾病的患者的醫藥組合物及用途。中華民國發明第 I 769382 號；專利權期間：20220701 -20390620。
22. 黃聰龍、王雅萱。用以治療因發炎體激活所致相關疾病的方法。中華民國發明第 I 769506 號；專利權期間：20220701 -20400825。
23. 黃聰龍、高定一、吳天賞。用以治療與嗜中性白血球激活失調及趨化相關之疾病的方法。中華民國發明第 I 775408 號；專利權期間：20220821 -20410425。

Honors / Awards

2021-2024 President, Society for Free Radical Research-Taiwan

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| 2021 | Outstanding Research Award from Society of Chinese Natural Medicine |
| 2021 | Excellent Research Award from Chang Gung University |
| 2021 | Academic Achievement Award from Chang Gung University of Science and Technology |
| 2021 | Industry-Academic Cooperation and Development Achievement Award from Chang Gung University of Science and Technology |
| 2021 | Invention Contribution Award of International Inventor Prize from Taiwan International Invention Award Winners Association |
| 2021 | World's Top 2% Scientists in 2020 and in Career (Stanford University) Award from Chang Gung University |
| 2021 | World's Top 2% Scientists in 2020 and in Career (Stanford University) Award from Chang Gung University of Science and Technology |
| 2020-2023 | Director, The Pharmacological Society in Taiwan |
| 2020 | Outstanding Inventor Lifetime Achievement Award of International Inventor Prize from Taiwan International Invention Award Winners Association |
| 2020 | Invention Gold Award of Taiwan Innotech Expo |
| 2020 | Excellent Research Award from Chang Gung University |
| 2019 | Outstanding Merit Award, Wang Ming-Ning Memorial Foundation, Taiwan |
| 2019 | Academic Achievement Award, Chang Gung University of Science and Technology |
| 2018 | The 15th National Innovation Award, Taiwan |
| 2018 | Academic Achievement Award, Chang Gung University of Science and Technology |

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| 2018 | Industry-academic Cooperation and Development Achievement Award, Chang Gung University of Science and Technology |
| 2017-2019 | Discipline Coordinator, Division of Pharmacy and Chinese Medicine, Department of Life Sciences, Ministry of Science and Technology, Taiwan |
| 2017 | Research and Development Paper Award, Formosa Plastics Group, Taiwan |
| 2016-2019 | President, The Society of Chinese Natural Medicine, Taiwan |
| 2016 | Academic Achievement Award, Chang Gung University of Science and Technology |
| 2016 | Industry-academic Cooperation and Development Achievement Award, Chang Gung University of Science and Technology |
| 2015-2021 | Director, Society for Free Radical Research-Taiwan |
| 2015 | Outstanding Alumni Award, School of Pharmacy, Kaohsiung Medical University |
| 2014 | Outstanding Paper Award, The Chinese Society of Immunology, Taiwan |
| 2014 | Excellent Teaching Award, Chang Gung University |
| 2014 | Excellent Poster Award, Symposium on Natural Products, Taiwan |
| 2013-2019 | Director, The Society of Chinese Natural Medicine, Taiwan |
| 2013 | Excellent Poster Award, Biennial Meeting of Society for Free Radical Research Asia, Taiwan |
| 2012 | Research and Development Paper Award, Formosa Plastics Group, Taiwan |
| 2011-2016 | Outstanding Young Scholar Research Projects, Department of Life Sciences, Ministry of Science and Technology, Taiwan |

2007

Wu Ta-You Memorial Award, National Science Council, Taiwan





