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研究助理教授

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寫作語言 中文和英文

學歷

2011年7月- 2015年6月 香港大學中醫藥學院博士

2006年9月- 2009年6月 華中科技大學醫學碩士

2001年9月 - 2006年6月 湖北中醫藥大學醫學學士

專業資格

2014年 獲香港中醫藥管理委員會頒發〈中醫註冊證明書〉及〈中醫執業證書〉
香港中醫協會會員

工作經歷

2023年1月-至今 香港大學中醫藥學院研究助理教授
2021年1月-2022年12月 香港大學中醫藥學院助理講師
2016年1月-2020年12月 香港大學中醫藥學院博士後研究員
2017年2月-2021年1月 香港大學深圳醫院榮譽副研究員
2015年9月-2016年1月 香港大學中醫藥學院研究助理

科研方向與成果

(In English)

RESEARCH INTEREST

The therapeutic effects and the underlying mechanism of Chinese medicines in the neurodegenerative disease, depression and pain.

EXTERNAL RESEARCH GRANTS

1. Health and Medical Research Fund (HMRF) 17181231, RNA-Seq transcriptome profiling of Rrag knock-in mouse brains for the mechanisms underlying the anti-depressive activity of Chinese medicine puerarin. PI. 01/07/2020-30/06/2023, Ongoing.
2. 深圳市科技計劃基礎研究自由探索項目，應用轉錄組學研究中藥葛根素抗抑鬱和止痛的作用及機制，PI. 19/03/2019-31/03/2022, Ongoing.
3. 高水平醫院建設科研培育計劃重點項目，基於Rrag轉基因鼠的轉錄組學研究中藥葛根素成分葛根素抗抑鬱的分子機制，PI. 01/07/2019-30/06/2022, Completed.

4. Nature and Science Foundation China (NSFC) 81703726, Unexpected dual antidepressant and analgesic activities of Chinese medicine puerarin and the underlying mechanism. **PI.** 01/01/2018-31/12/2020, Completed.
5. Health and Medical Research Fund (HMRF) 15161731, Transcriptomic Profiling of the Gene Networks Reveals the Roles of BDNF and RragA in the Anti-Depressive and Analgesic Activities of Chinese Medicine Puerarin. **PI.** 01/04/2018-31/03/2020, Completed.
6. National Natural Science Foundation of China (NSFC), 2018-2020, 21778046, Arachidonic acid metabolite (15-keto-PGF2 α) regulates macrophage M1/M2 polarization against myocardial ischemia reperfusion injury via covalent conjugation with glycolytic enzyme PKM2. **Co-applicant.** 01/01/2018-31/12/2021, Completed.
7. 高水平醫院建設科研培育計劃青年項目HKUSZH201901011, 基于人工智能整合医学大数据构建胎儿生长异常风险评估工具和辅助评估模型研究, Co-I. 01/07/2019-30/06/2022, Ongoing.
8. Midstream Research Programme for Universities (MRP) (2018): CCK-B receptor antagonists for the treatment of depression especially chronic pain comorbid depression of elderly. **Team member.** 01/07/2019-30/06/2022, Completed.
9. Nature and Science Foundation China (NSFC) 81202510, Unexpected anti-Parkinson's neuroprotective and its molecular targets of Sunitinib, a clinical used anti-cancer drug. **Co-applicant.** 01/09/2013-01/09/2015, Completed.

發表論文

(In English)

PUBLICATIONS (*Corresponding; # co first author)

- 1) First author and #co first author
1. **Zhao J**[#], Luo D[#], Zhang Z, Fan N, Wang Y, Nie H, Rong J. Celastrol-loaded PEG-PCL nanomicelles ameliorate inflammation, lipid accumulation, insulin resistance and gastrointestinal injury in diet-induced obese mice. *J Control Release.* 2019; 310, 188-197. doi: 10.1016/j.jconrel.2019.08.026. (IF: 11.467)
2. K. Y. Tong[#], **J. Zhao**[#], C. Tse, P. Wan, J. Rong and H. Y. Au-Yeung. Selective Catecholamine Detection in Living Cells by a Copper-based Oxidative Reactivity. *Chem. Sci.* 2019; 10 (37), 8519-8526. DOI: 10.1039/C9SC03338F. (IF: 9.969)
3. **Zhao J**, Lao L, Cui W, Rong J. Potential link between the RagA-mTOR-p70S6K axis and depressive-behaviors during bacterial liposaccharide challenge. *J Neuroinflammation.* 2019 Nov 11;16(1):211. (IF: 9.587)
4. **Jia Zhao**, Yizhen Jia, Wei Zhao, Huixin Chen, Xiuying Zhang, Fung Yin Ngo, Dan Luo, Youqiang Song, Lixing Lao, and Jianhui Rong. Botanical Drug Puerarin Ameliorates Liposaccharide-Induced Depressive Behaviors in Mice via Inhibiting RagA/mTOR/p70S6K Pathways. *Oxid Med Cell Longev.*

2021 Oct 18;2021:7716201. doi: 10.1155/2021/7716201. eCollection 2021. (IF: 7.310)

5. Zhao Y[#], **Zhao J[#]**, Zhang X, Cheng Y, Luo D, Lee SM, Lao L, Rong J. Botanical Drug Puerarin Promotes Neuronal Survival and Neurite Outgrowth against MPTP/MPP⁺-Induced Toxicity via Progesterone Receptor Signaling. *Oxid Med Cell Longev*. 2020 Oct 17;2020:7635291. doi: 10.1155/2020/7635291. eCollection 2020. (IF: 7.310)
 6. **Jia Zhao***, Mengxia Zhu, Mukesh Kumar, Fung Yin Ngo, Yinghui Li, Lixing Lao, Jianhui Rong. A pharmacological appraisal of neuroprotective and neurorestorative flavonoids against neurodegenerative diseases. *CNS Neurol Disord Drug Targets*. 2019;18(2):103-114. doi: 10.2174/1871527317666181105093834. (review, IF: 2.824)
 7. **Jia Zhao**, Dan Luo, Zhaohui Liang, Lixing Lao, Jianhui Rong. Plant Natural Product Puerarin Ameliorates Depressive Behaviors and Chronic Pain in Mice with Spared Nerve Injury (SNI). *Molecular Neurobiology*, 2017 May;54(4):2801-2812. doi: 10.1007/s12035-016-9870-x. (IF: 5.682)
 8. **Jia Zhao**, Yuanyuan Cheng, Chuanbin Yang, Sam Lau, Lixing Lao, Bo Shuai, Jing Cai, Jianhui Rong. Botanical drug puerarin attenuates 6-hydroxydopamine (6-OHDA)- induced neurotoxicity via upregulating mitochondrial enzyme arginase-2. *Molecular Neurobiology*, 2016 May;53(4):2200-11. doi: 10.1007/s12035-015-9195-1. (IF: 5.682)
 9. **Jia Zhao**, Yuanyuan Cheng, Wen Fan, Chuanbin Yang, Shuifen Ye, Wei Cui, Wei Wei, Lixing Lao, Jing Cai, Yifan Han, Jianhui Rong. Botanical drug puerarin coordinates with nerve growth factor (NGF) in the regulation of neuronal survival and neurite extension via activating ERK1/2 and PI3K/Akt signaling pathways in the neurite extension process. *CNS Neuroscience & Therapeutics*. 2015 Jan;21(1):61-70. (IF: 7.035)
- 2) * Corresponding
10. Yilu Sun, Jian Fu, Jiayin Yang, **Jia Zhao***, Jianhui Rong*. Generation of a RRAGA knockout human iPSC line GIBHi002-A-5 using CRISPR/Cas9 technology. *Stem Cell Research*. 2022 August; 63, 102859. (IF: 1.587)
 11. Yilu Sun, **Jia Zhao***, Jianhui Rong*. Dissecting the molecular mechanisms underlying the antidepressant activities of herbal medicines through the comprehensive review of the recent literatures. *Frontiers in Psychiatry*. (accepted, IF: 5.435)
- 3) Other authors
12. Wei Zhao[#], Xiuying Zhang[#], **Jia Zhao**, Ni Fan, Jianhui Rong. SUMOylation of Nuclear γ -Actin by SUMO2 supports DNA Damage Repair against Myocardial Ischemia-Reperfusion Injury. *Int J Biol Sci* 2022; 18(11):4595-4609. doi:10.7150/ijbs.74407. (IF: 10.750)
 13. Fan N, **Zhao J**, Zhao W, Zhang X, Song Q, Shen Y, Shum HC, Wang Y, Rong J. Celastrol-loaded lactosylated albumin nanoparticles attenuate hepatic steatosis in non-alcoholic fatty liver disease. *J Control Release*. 2022 May 4;347:44-54. doi: 10.1016/j.jconrel.2022.04.034. Online ahead of print. (IF: 11.467)

14. Luo D[#], Fan N[#], Zhang X, Ngo FY, **Zhao J**, Zhao W, Huang M, Li D, Wang Y, Rong J. Covalent inhibition of endoplasmic reticulum chaperone GRP78 disconnects the transduction of ER stress signals to inflammation and lipid accumulation in diet-induced obese mice. *Elife*. 2022 Feb 9;11:e72182. doi: 10.7554/eLife.72182. (IF: 8.713)
15. Fan N, **Zhao J**, Zhao W, Shen Y, Song Q, Shum HC, Wang Y, Rong J. Biodegradable celastrol-loaded albumin nanoparticles ameliorate inflammation and lipid accumulation in diet-induced obese mice. *Biomater Sci*. 2022 Feb 15;10(4):984-996. doi: 10.1039/d1bm01637g. (IF: 7.590)
16. Ni Fan, Xiuying Zhang, Wei Zhao, **Jia Zhao**, Dan Luo, Yilu Sun, Ding Li, Chenliang Zhao, Yu Wang, Hongjie Zhang, Jianhui Rong*. Covalent Inhibition of Pyruvate Kinase M2 Reprograms Metabolic and Inflammatory Pathways in Hepatic Macrophages against Non-alcoholic Fatty Liver Disease. *International Journal of Biological Sciences* 2022; 18(14):5260-5275. DOI: 10.7150/ijbs.73890. (IF: 10.750)
17. Lu J, Hu D, Ma C, Xu X, Shen L, Rong J, **Zhao J** and Shuai B (2022). Modified Qing' e Pills exerts anti-osteoporosis effects and prevents bone loss by enhancing type H blood vessel formation. *Front. Endocrinol*. 13:998971. doi: 10.3389/fendo.2022.998971. (IF: 6.055)
18. Wei Zhao, **Jia Zhao**, Xiuying Zhang, Ni Fan, Jianhui Rong. Upregulation of Small Ubiquitin-Like Modifier 2 and Protein SUMOylation as a Cardioprotective Mechanism Against Myocardial Ischemia-Reperfusion Injury. *Front Pharmacol*. 2021 Sep 13;12:731980. doi: 10.3389/fphar.2021.731980. eCollection 2021. (IF: 5.988)
19. Zhao W, **Zhao J**, Rong J. Pharmacological Modulation of Cardiac Remodeling after Myocardial Infarction. *Oxid Med Cell Longev*. 2020 Dec 30;2020:8815349. doi: 10.1155/2020/8815349. eCollection 2020. (review, IF: 7.310)
20. Fung Yin Ngo, Weiwei Wang, Qilei Chen, **Jia Zhao**, Hubiao Chen, Jin-Ming Gao, Jianhui Rong. Network Pharmacology Analysis and Molecular Characterization of the Herbal Medicine Formulation Qi-Fu-Yin for the Inhibition of the Neuroinflammatory Biomarker iNOS in Microglial BV-2 Cells: Implication for the Treatment of Alzheimer's Disease. *Oxid Med Cell Longev*. 2020 Aug 31;2020:5780703. doi: 10.1155/2020/5780703. eCollection 2020. (IF: 7.310)
21. Zhong Zhang, Xin Ma, Bowei Li, **Jia Zhao**, Ji Qi, Guoying Hao, Rong Jianhui*, Xingbin Yang*. Fluorescence Detection of 2,4-dichlorophenoxyacetic Acid by Ratiometric Fluorescence Imaging on Paper-Based Microfluidic Chips. *Analyst*. 2020 Feb 3;145(3):963-974. doi: 10.1039/c9an01798d. (IF: 5.227)
22. Luo D, Guo Y, Cheng Y, **Zhao J**, Wang Y, Rong J. Natural product celastrol suppressed macrophage M1 polarization against inflammation in diet-induced obese mice via regulating Nrf2/HO-1, MAP kinase and NF- κ B pathways. *Aging (Albany NY)*. 2017 Oct 16;9(10):2069-2082. (IF: 5.955)
23. Luo D, **Zhao J**, Cheng Y, Lee SM, Rong J, N-Propargyl Caffeamide (PACA) Ameliorates Dopaminergic Neuronal Loss and Motor Dysfunctions in MPTP Mouse Model of Parkinson's Disease and in MPP⁺-Induced Neurons via Promoting the Conversion of proNGF to NGF, *Mol Neurobiol*, 2018

Mar;55(3):2258-2267. doi: 10.1007/s12035-017-0486-6. (IF: 5.682)

24. Chuanbin Yang, **Jia Zhao**, Yuanyuan Cheng, X Chris Le, Jianhui Rong, N-Propargyl caffeate amide (PACA) potentiates nerve growth factor (NGF)-induced neurite outgrowth and attenuates 6-hydroxydopamine (6-OHDA)-induced toxicity via activating the Nrf2/HO-1 pathway, *ACS Chem Neurosci*. 2015 Sep 16;6(9):1560-9. doi: 10.1021/acschemneuro.5b00115. Epub 2015 Jul 16. (IF: 5.78)
25. Yuanyuan Cheng, **Jia Zhao**, Hung Fat Tse, X Chris Le, Jianhui Rong, Plant natural products calycosin and gallic acid synergistically attenuate neutrophil infiltration and subsequent injury in isoproterenol-induced myocardial infarction: a possible role for leukotriene B4-12-hydroxydehydrogenase? *Oxidative Medicine and Cellular Longevity*, 2015;2015:434052. (IF: 7.310)
26. Hongyi Qi, **Jia Zhao**, Yifan Han, Allan S.Y. Lau, Jianhui Rong. Z-ligustilide potentiates the cytotoxicity of dopamine in rat dopaminergic PC12 cells. *Neurotox Res* (2012) 22:345–354. (IF: 3.978)
27. Chuanbin Yang, **Jia Zhao**, Weijing Pei, Xiaohui Zheng, Jianhui Rong. Biochemical mechanisms of bornyl caffeate induced cytotoxicity in rat pheochromocytoma PC12 cells. *Chemico-Biological Interactions*, 2014,219:133-142. (IF: 5.168)
28. Chuanbin Yang, **Jia Zhao**, Yuanyuan Cheng, Xuechen Li, Jianhui Rong. Bioactivity-guided fractionation identifies amygdalin as a potent neurotrophic agent from herbal medicine *Semen Persicae* extract. *BioMed Research International*, 2014;2014:306857. (IF: 3.246)
29. Dan Luo, **Jia Zhao**, Jianhui Rong. Plant-derived triterpene celastrol ameliorates oxygen glucose deprivation-induced disruption of endothelial barrier assembly via inducing tight junction proteins. *Phytomedicine*. 2016 Dec;23(13):1621-1628. (IF: 6.656)
30. Yuanyuan Cheng, Chuanbin Yang, **Jia Zhao**, Hung Fat Tse, Jianhui Rong. Proteomic identification of calcium-binding chaperone calreticulin as a potential mediator for the neuroprotective and neurotogenic activities of fruit-derived glycoside amygdalin. *Journal of Nutritional Biochemistry*. 2015Feb;26(2):146-54. (IF: 6.117)
31. Chuanbin Yang, Weijing Pei, **Jia Zhao**, Yuanyuan Cheng, Xiaohui Zheng, Jianhui Rong, Bornyl caffeate induces apoptosis in human breast cancer MCF-7 cells via the ROS- and JNK-mediated pathway. *Acta Pharmacologica Sinica*, 2014,35(1):113-123. (IF: 7.169)
32. Bo Shuai, Yanping Yang, Lin Shen, Rui Zhu, Xiaojuan Xu, **Jia Zhao**, Jianhui Rong. Local renin-angiotensin system is associated with bone mineral density of glucocorticoid-induced osteoporosis patients. *Osteoporos Int* (2015) 26:1063–1071. (IF: 5.071)
33. Yang, Chuanbin, Cheng, Yuanyuan, **Zhao, Jia**, Rong, Jianhui. Releasing Nrf2 to promote neurite outgrowth. *Neural Regeneration Research*, 2015-12, 10(12): 1934-1935. (review, IF: 6.058)
34. Yu-Bo Zhang, Kar-Ho Lam, Li-Feng Chen, Hei Wan, Guo-Cai Wang, Kai-Fai Lee, Chun-Wang Yip,

Kwun-Hung Liu, Pak-Heng Leung, Hai-Yong Chan, Yi-Gang Shi, **Jia Zhao**, Li-Xing Lao, Yao-Lan Li, Yan-Bo Zhang, Wei Meng. Chemical constituents from the thorns of *Gleditsia sinensis* and their cytotoxic activities. *J Asian Nat Prod Res.* 2020 Apr 15;1-9. doi: 10.1080/10286020.2020.1731799. Online ahead of print. (IF: 1.610)

35. Yuanyuan Cheng, **Jia Zhao**, Jianhui Rong, Chapter 9, Proteomic response fingerprinting (ProReF) for rapid identification of protein targets for Chinese medicine, in *Evidence-based Research Methods for Chinese Medicine*, Siu-wai Leung, Hao Hu (Eds.), Pages 131-145 (2016), SpringerLink. (Book chapter)
36. Chuanbin Yang, Yuanyuan Cheng, **Jia Zhao**, Jianhui Rong. Flavonones potential use as pharmacological agents. *International Journal of Traditional Chinese Medicine*, 2014,36(4):370-375. (In Chinese).
37. Yuanyuan Cheng, Chuanbin Yang, **Jia Zhao**, Jianhui Rong. Purification of Z- ligustilide by AgNO₃-Impregnated Silica Gel. *Chinese Journal of Modern Applied Pharmacy*, 2014,31(5):552-555 (In Chinese).
38. Bo Shuai, Lin Shen, Yan-ping Yang, Jing Xie, Pi-qi Zhou, Heng Li, Xiang-fei Guo, Jia Zhao, Jia-lin Wu. Effects of Chinese kidney-tonifying drugs on bone mineral density (BMD), biomechanics, 25-hydroxy vitamin D₃ and 1,25-dihydroxy vitamin D₃ of ovariectomized osteoporosis rats. *Zhongguo Gu Shang.* 2008 Nov;21(11):850-3. (In Chinese).
39. Hei Wan, Kar-Ho Lam, Hei-Yi Man, Kwun-Hung Liu, Ming-NGai Lau, Chun-Wang Yip, Chun-Hei Cheung, Lik-Hang Wong, Kai-Fai Lee, Kalin Yan-Bo Zhang, **Jia Zhao**, Hai-Yong Chen, Jin Yu, Zhang-Jin Zhang, Li-Xing Lao#, Wei Meng#. New Progress in the Research of TCM Clinical Formula in the Treatment of Polycystic Ovary Syndrome. *Traditional Chinese Medicine.* Vol. 08 No. 01 (2019), ID: 28504. 7 pages. (In Chinese).
40. Chun-Wang Yip, Hei Wan, Kar-Ho Lam, Chun-Hei Cheung, Kwun-Hung Liu, Hei-Yi Man, Ming-NGai Lau, Lik-Hang Wong, Nan-Sun Zhu, Kai-Fai Lee, Kalin Yan-Bo Zhang, Jun Shi, **Jia Zhao**, Hai-Yong Chen, Zhang-Jin Zhang, Li-Xing Lao, Wei Meng. Specialist Prescription of Chinese Medicine for Treatment of EMT Dysmenorrhea and Related Experimental Research Analysis. *Traditional Chinese Medicine.* 2019, 8(4): 254-261. (In Chinese).
41. Kar Fung Tam, Xiang Lin, Haiyong Chen, **Jia Zhao**, Li Dong, Nansun Zhu, Wei Meng. Research and Application of “Chong-Ren” Theory in Zhu’s TCM Gynaecology. *Traditional Chinese Medicine*, 2022, 11(5): 906-913. DOI: 10.12677/tcm.2022.115131. (In Chinese).

CONFERENCE PRESENTATIONS

1. **Zhao Jia**, Rong Jianhui*, Poster presentation on “Transcriptomic Profiling of the Gene Networks Reveals the Roles of BDNF and RragA in the Anti-Depressive and Analgesic Activities of Chinese Medicine Puerarin”, Health Research Symposium 2021, November 23, 2021, Hong Kong, China.
2. **Zhao Jia**, Judge in the 17th International Postgraduate Symposium on Chinese Medicine, August 13, 2021, Hong Kong, China.

3. **Zhao Jia**, Rong Jianhui*, Poster presentation on “Botanical drug puerarin ameliorates liposaccharide-induced depressive behaviors in mice via inhibiting RagA/mTOR/p70S6K pathways”, International Conference on Aging Research in Chinese Medicine: Musculoskeletal and Neurological Degeneration and Repair (ICARCM), July 23, 2021, Hong Kong, China.
4. **Zhao Jia**, Lao Lixing, Rong Jianhui*, Oral presentation on “Potential Link between the RagA-mTOR-p70S6K Axis and Depressive-behaviors during Bacterial Liposaccharide Challenge”, 18th Meeting of Consortium for Globalization of Chinese Medicine (CGCM), August 8 - 10, 2019, Shanghai, China.
5. **Zhao Jia**, Rong Jianhui, Lao Lixing, Oral presentation on “Unexpected antidepressant and analgesic activities of Chinese medicine puerarin and its molecular targets”, 16th Meeting of Consortium for Globalization of Chinese Medicine (CGCM), August 18 - 20, 2017, Guangzhou, China.
6. **Jia Zhao**, Lixing Lao, Jianhui Rong, Poster presentation on “Plant Natural Product Puerarin Ameliorates Depressive Behaviors and Chronic Pain in Mice with Spared Nerve Injury (SNI)”, New Zealand Applied Neurosciences Conference 2016, November 24–26, 2016, Auckland, New Zealand.
7. **Zhao J.**, Liang ZH., Luo D., Lao LX., Rong J*, Oral presentation on “Plant natural product puerarin ameliorates depressive behaviors and chronic pain in mice with spared nerve injury (SNI)”, The 9th Pong Ding Yuen International Symposium on Traditional Chinese Medicine, December 04-05, 2015, Hong Kong.
8. **Jia Zhao**, Lixing Lao, Jianhui Rong, Poster presentation on “Botanical drug puerarin attenuates 6-hydroxydopamine (6-OHDA)-induced neurotoxicity via upregulating mitochondrial enzyme arginase-2”, ASPET Annual Meeting during Experimental Biology 2015, March 28 – April 1, 2015, Boston, Massachusetts, USA.
9. Hongyi Qi, **Jia Zhao**, Yifan Han, Allan S.Y. Lau, Jianhui Rong, Poster presentation on “Z-Ligustilide Potentiates the Cytotoxicity of Dopamine in Rat Dopaminergic PC12 Cells”, The 11th Meeting of the Consortium for Globalization of Chinese Medicine (CGCM), August 2012, Macau, P.R. China.
10. **Jia Zhao**, Chuanbin Yang, Yuanyuan Cheng, Yifan Han, Jianhui Rong, Poster presentation on “Neurotrophic and Cytoprotective Action of Puerarin in PC12 Cells via Sequentially Activating ERK1/2 Pathway and Inducing HO-1 Expression”, The 12th Meeting of the Consortium for Globalization of Chinese Medicine (CGCM), August 27-29, 2013, Graz, Austria.
11. **Jia Zhao**, Jianhui Rong. Oral presentation on “Pharmacological induction of arginase II by C-glycosylated isoflavonone puerarin suppresses nitric oxide-induced mitochondrial dysfunction in differentiated neuronal PC12 cells”, The 8th Pong Ding Yuen International Symposium on Traditional Chinese Medicine and The 2nd International Chinese Symposium on Free Radical Research and The 6th Symposium for Three Districts of Cross-straits on Free Radical Research, November 15-16, 2014, Hong Kong.

教學經歷

主講《醫學倫理學及中醫專業操守》、《中醫基礎理論》、《中醫診斷學》等課程

並參與 Patient Care Project、Common Core Course “Ideas and Practices of Healing in Traditional China”(CCCH9029)、“Introduction to Chinese Medicine and Nursing”(BCHM3801)、“針灸基礎學”(BCHM3603)、

“Chinese Medicine for Pharmacy Students”(BPHM4152)、“Life Cultivation & Health Care of Chinese Medicine”(BCHM2005)、“Clinical Clerkship”、BMSC1101/BMSC2102/BMSC2203 Life Science、GRSC6031 Research Ethics for Graduate Students 等課程的導修課。