



LUO PEI

Position: Associate Professor

Faculty: State Key Laboratory of Quality Research in Chinese Medicine, Macau Institute for Applied Research in Medicine and Health

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Dr. Pei LUO received her Bachelor of Pharmacy (2003) and Ph. D in Pharmacology (2008) both from West China School of Pharmacy, Sichuan University (Chengdu, P.R. China). Then she worked as postdoctoral research fellow at School of Chinese Medicine in Hong Kong Baptist University for 3 years (from Dec, 2008 to Aug, 2011). In Sep, 2011, she joined the State Key Laboratory of Quality Research in Chinese Medicine and the Macau Institute for Applied Research in Medicine and Health, Macau University of Science and Technology as an Assistant Professor. She was promoted to be an associate professor in July 2017.

Dr. Pei LUO is particularly experienced in cardiovascular pharmacology and development of new products from Chinese medicines. Her recent research focus on crosstalk between mitochondrial dynamics and ischemia reperfusion, cardioprotective effect via mitochondrial fission regulation, novel mechanism of ginseng on mitochondrion, discovery and characterization of compound targeting on mitochondrial fusion/fission. Till now, she has obtained 4 research funding as principal investigator from the Science & Technology Development Fund (FDCT) of Macao SAR and the Macao Foundation of Macao SAR. She has published over 50 peer-reviewed papers in SCI journals including *Mitochondrion*, *Carbohydrate Polymers*, *Pharmacological Research*, *Journal of Pharmacology and Experimental Therapeutics*, *Journal of Ethnopharmacology*, *Phytomedicine*. 10 peer-reviewed papers in Chinese core journal, and over 50 conference

abstracts or posters. Dr. LUO has obtained 5 granted international patents (US and Australia) for the works in development of a living cell image method for mitochondrial dynamics, identification of novel ginsenoside with anti-ischemia effect, and 2 China patents from the discovery of new drug for treatment of ischemia heart disease.

Academic Qualifications

- 2003,9 - 2008,6 **Ph. D in Pharmacology**
West China School of Pharmacy, Sichuan University, Chengdu, Sichuan Province, P.R. China
- 1999, 9 - 2003,6 **Bachelor of Pharmacy**
West China School of Pharmacy, Sichuan University, Chengdu, Sichuan Province, P.R. China

Teaching Experience

- 2017,7 – present **Associate Professor**
Macau Institute for Applied Research in Medicine and Health, State Key Laboratory of Quality Research in Chinese medicine, Macau University of Science and Technology, Macau, P.R. China
- 2011,9 – 2017.6 **Assistant Professor**
Macau Institute for Applied Research in Medicine and Health, State Key Laboratory of Quality Research in Chinese medicine, Macau University of Science and Technology, Macau, P.R. China
- 2008,11 - 2011,8 **Postdoctoral Research Fellow**
Teaching Division, School of Chinese Medicine, Hong Kong Baptist University (HKBU), Kowloon Tong, Hong Kong, P.R. China
- 2005,9 - 2006,1 **Research Assistant**
Cardiovascular Drug Research and Development Division, Institute of Materia Medica, Chengdu DIAO Group Chengdu, Sichuan Province, P.R. China

Teaching and Research Areas

Teaching subjects: Pharmacology and Toxicity, Clinical Pharmacology, Methodology of Pharmacological Experiment

Research Areas: Cardiovascular Pharmacology and Mitochondrial Dynamics, Traditional Chinese Medicine Pharmacology

Representative Publications [* , corresponding author(s); † , contribution equally/sharing first authorship]

- 1) Wang Q, Liu L, Chen X, Wang T, Zhou H, Huang H, Qing L*, **Luo P***. Noninvasive Prognosis of Postmyocardial Infarction Using Urinary miRNA Ultratrace Detection Based on Single-Target DNA-Functionalized AuNPs. *ACS Appl Mater Interfaces*. 2022 Jan 26;14(3):3633-3642.
- 2) Wen-Xia Sun, Chuan-tao Zhang, Xi-Na Yu, Jia-bin Guo, Hao Ma, Ke Liu, **Pei Luo***, Jing Ren*. Preparation and pharmacokinetic study of diosmetin long-circulating liposomes modified with lactoferrin. *Journal of Functional Foods*, 91, 2022,105027.
- 3) Chen XY, Wang QL, Huang WX*, Li LW, Liu LC, Yang Y, Wu YJ, Song SS, Ma H, Zhou H, **Luo P***. Application of serum exosomal hypoxia-inducible factor-1 alpha (HIF-1 α) as potential circulating biomarker for bacterial peritonitis. *Bioengineered*. 2022 Feb;13(2):1975-1987.
- 4) Tang, MQ., Xie, J., Rao, LM., Ya-Jie Kan, **Pei Luo***, Lin-Sen Qing*. Advances in aptamer-based sensing assays for C-reactive protein. *Analytical and Bioanalytical Chemistry*. 414, 867–884 (2022)
- 5) Yu X, Wang Q, Lu W, Zhang M, Chen K, Xue J, Zhao Q, Wang P, **Luo P***. Shen Q*. Fast and Specific Screening of EPA/DHA-Enriched Phospholipids in Fish Oil Extracted from Different Species by HILIC-MS. *Journal of Agricultural and Food Chemistry*. 2021 Jul 21;69(28):7997-8007.
- 6) Lili He, Bingxiong Yan, Caiyun Yao, Xiaoyi Chen, Longwei Li, Youjiao Wu, Zhijun Song, Shanshan Song, Zhifeng Zhang, **Pei Luo***. Oligosaccharides from Polygonatum Cyrtonema Hua: Structural characterization and treatment of LPS-induced peritonitis in mice. *Carbohydrate Polymers*. 2021 Mar 1;255:117392.

- 7) Long-Wei Li, Xiao-Yi Chen, Lan-Cong Liu, Yi Yang, You-Jiao Wu, Gang Chen, Zhi-Feng Zhang, **Pei Luo***. Oil-in-water camellia seeds oil nanoemulsions via high pressure microfluidization: Formation and evaluation, *LWT - Food Science and Technology*, Volume 140, 2021, 110815
- 8) Xin Li[†], Lancong Liu[†], Yi Yang, Xuefeng Yang, Cencen Wang, Yan Li, Yanyan Ge, Yuxin Shi, Ping Lv, Hua Zhou, **Pei Luo***, Shilong Huang*. Gender-Associated Difference following COVID-19 virus infection: Implications for Thymosin alpha-1 Therapy. *International Immunopharmacology*. 2021 Jan;90:107022.
- 9) Wei N, Zhao J, Wu G, Cao W, **Luo P**, Zhang Z, Chen G*, Wen L*. Rapid Screening and Identification of Antitumor Ingredients from the Mangrove Endophytic Fungus Using an Enzyme-Immobilized Magnetic Nanoparticulate System. *Molecules*. 2021 Apr 13;26(8):2255.
- 10) Gao WJ, Liu JX, Xie Y, **Luo P**, Liu ZQ, Liu L*, Zhou H*. Suppression of macrophage migration by down-regulating Src/FAK/P130Cas activation contributed to the anti-inflammatory activity of sinomenine. *Pharmacological Research*. 2021 May;167:105513.
- 11) Wang TT, Lio CK, Huang H, Wang RY, Zhou H, **Luo P***, Qing LS*. A feasible image-based colorimetric assay using a smartphone RGB camera for point-of-care monitoring of diabetes. *Talanta*. 2020 Jan 1;206:120211.
- 12) Youjiao Wu, Zhifeng Zhang, Tingbo Chen, Chunsong Cheng, Ziling Zhang, Hua Zhou, **Pei Luo***. Comparison of two Polygonum chinense varieties used in Chinese cool tea in terms of chemical profiles and antioxidant/anti-inflammatory activities. *Food Chemistry*. 2020 Apr 25;310:125840.
- 13) Li Chen, Xiao-Yi Chen, Qian-Long Wang, Si-Jin Yang, Hua Zhou, Li-Sheng Ding, Lin-Sen Qing*, **Pei Luo***. Astragaloside IV Derivative (LS-102) Alleviated Myocardial Ischemia Reperfusion Injury by Inhibiting Drp1Ser616 Phosphorylation-Mediated Mitochondrial Fission. *Frontiers in Pharmacology*. 2020 Sep 17;11:1083.
- 14) Ji-Zhong Zhang, Xiao-Yi Che, You-Jiao Wu, Li-Min Li, Li Huang, Qiao-Zhi Yin, **Pei Luo***, Yuan Liu*. Identification of Active Compounds From Yi Nationality Herbal Formula Wosi Influencing COX-2 and VCAM-1 Signaling. *Frontiers in Pharmacology*. 2020 Nov 9;11:568585.
- 15) Xin Li[†], Yi Yang[†], Lancong Liu, Xuefeng Yang, Xiaobo Zhao, Yan Li, Yanyan Ge,

- Yuxin Shi, Ping Lv, Jianchu Zhang, Tao Bai, Hua Zhou, **Pei Luo***, Shilong Huang*. Effect of combination antiviral therapy on hematological profiles in 151 T adults hospitalized with severe coronavirus disease 2019. *Pharmacological Research*. 2020 Oct;160:105036.
- 16) Qian-Long Wang, Wei-Xue Huang, Pu-Juan Zhang, Li Chen, Chon-Kit Lio, Hua Zhou, Lin-Sen Qing*, **Pei Luo***. Colorimetric determination of the early biomarker hypoxia-inducible factor-1 alpha (HIF-1 α) in circulating exosomes by using a gold seed-coated with aptamer-functionalized Au@Au core-shell peroxidase mimic. *Microchimica Acta*. 2019 Dec 18;187(1):61.
 - 17) Chon-Kit Lio, Jin-Fang Luo, Xiu-Yu Shen, Yi Dai, Jorge Machado, Ying Xie, Yun-Da Yao, Yang Yue, Jian-Xin Liu, Xin-Sheng Yao, **Luo P***, Hua Zhou*. Nardosinane N suppresses LPS-induced macrophage activation by modulating the Nrf2 pathway and mPGES-1. *Biochemical Pharmacology*, 2020 Mar; 173:113639.
 - 18) Meng XY, Yau LF, Huang H, Chan WH, **Luo P**, Chen L, Tong TT, Mi JN, Yang Z, Jiang ZH1, Wang JR*. Improved approach for comprehensive profiling of gangliosides and sulfatides in rat brain tissues by using UHPLC-Q-TOF-MS. *Chemistry and Physics of Lipids*. 2019 Aug 20; 225:104813.
 - 19) Yao Y-D, Shen X-Y, Machado J, Luo J-F, Dai Y, Lio C-K, Yu Y, Xie Y, **Luo P**, Liu J-X, Yao X-S, Liu Z-Q*, Zhou H* Nardochinoid B Inhibited the Activation of RAW264.7 Macrophages Stimulated by Lipopolysaccharide through Activating the Nrf2/HO-1 Pathway. *Molecules*. 2019 Jul 6;24(13):2482.
 - 20) Wang QL, Xie J, Liang J, Dong GT, Ding LS, **Luo P***, Qing LS*. Competitive Protein Binding Assay of Naproxen by Human Serum Albumin Functionalized Silicon Dioxide Nanoparticles. *Molecules*. 2019 Jul 17;24(14).
 - 21) Liu Y, Wang L, Luo M, Chen N, Deng X, He J, Zhang L, **Luo P**, Wu JB. Inhibition of PAI-1 attenuates perirenal fat inflammation and the associated nephropathy in high-fat diet-induced obese mice. *American Journal of Physiology-Endocrinology and Metabolism*. 2019 Feb 1;316(2):E260-E267.
 - 22) Zhou, X. B.#.; Chen, L.#; Jiang, Z.-H.; Chen, X. Y.; **Luo, P.***; Bai, L.P.*, Synthesis of 21-Alkylidenes and 21-Alkylol Analogues of Uscharin and Their Effects on Intracellular Calcium in Cardiac Cells. *Chemistry select*, 2019, 4 (19), 5512-5517.
 - 23) Su X, Wu Y, Li Y, Huang Y, Liu Y, **Luo P**, Zhang ZF*. Effect of Different Post-Harvest

- Processing Methods on the Chemical Constituents of *Notopterygium franchetii* by an UHPLC-QTOF-MS-MS Metabolomics Approach. *Molecules*. 2019 Sep 2;24(17).
- 24) Xie C, Ouyang L, Chen J, Zhang H1, **Luo P**, Wang J, Huang H*. The Emerging Role of Mesenchymal Stem Cells in Vascular Calcification. *Stem Cells Int*. 2019 Apr 1;2019:2875189.
 - 25) Qing LS, Chen TB, Sun WX, Chen L, **Luo P***, Zhang ZF, Ding LS. Pharmacokinetics Comparison, Intestinal Absorption and Acute Toxicity Assessment of a Novel Water-Soluble Astragaloside IV Derivative (Astragalosidic Acid, LS-102). *European Journal of Drug Metabolism and Pharmacokinetics*. 2018 Oct 12.
 - 26) Sun W, Chen Y, Wang Y, **Luo P**, Zhang M, Zhang H, Hu P*. Interaction study of cancer cells and fibroblasts on a spatially confined oxygen gradient microfluidic chip to investigate the tumor microenvironment. *Analyst*. 2018 Oct 12.
 - 27) Xie J, Xiong J, Ding LS, Chen L, Zhou H, Liu L, Zhang ZF, Hu XM, **Luo P***, Qing LS*. A efficient method to identify cardioprotective components of Astragali Radix using a combination of molecularly imprinted polymers-based knockout extract and activity evaluation. *J Chromatography A*. 2018 Sep 17.
 - 28) Sun WX, Zhang ZF, Xie J, He Y, Cheng Y, Ding LS, **Luo P***, Qing LS*. Determination of a astragaloside IV derivative LS-102 in plasma by ultra-performance liquid chromatography-tandem mass spectrometry in dog plasma and its application in a pharmacokinetic study. *Phytomedicine*. Available online 5 September 2018
 - 29) Luo JF, Shen XY, Lio CK, Dai Y, Cheng CS, Liu JX, Yao YD, Yu Y, Xie Y, **Luo P**, Yao XS, Liu ZQ, Zhou H*. Activation of Nrf2/HO-1 Pathway by Nardochinoid C Inhibits Inflammation and Oxidative Stress in Lipopolysaccharide-Stimulated Macrophages. *Front Pharmacol*. 2018 Sep 4;9:911.
 - 30) Huang BM, Zha QL, Chen TB, Xiao SY, Xie Y, **Luo P**, Wang YP, Liu L, Zhou H*. Discovery of markers for discriminating the age of cultivated ginseng by using UHPLC-QTOF/MS coupled with OPLS-DA. *Phytomedicine*. 2018 Jun 1;45:8-17.
 - 31) Zuo YH, Han QB, Dong GT, Yue RQ, Ren XC, Liu JX, Liu L, **Luo P***, Zhou H*. Panax ginseng Polysaccharide Protected H9c2 Cardiomyocyte From Hypoxia/Reoxygenation Injury Through Regulating Mitochondrial Metabolism and RISK Pathway. *Frontiers in Physiology*. 2018, Jun 15;9:699.

- 32) Zhang C, Zhang K, Huang F, Feng W, Chen J, Zhang H, Wang J, **Luo P**, Huang H. Exosomes, the message transporters in vascular calcification. *Journal of cellular and molecular medicine*. 2018.Review.
- 33) He L, Zhang Z, Liu Y, Chen D, Yuan M, Dong G, **Luo P***, Yan Z*. Rapid discrimination of raw and sulfur-fumigated Smilax glabra based on chemical profiles by UHPLC-QTOF-MS/MS coupled with multivariate statistical analysis. *Food Research International*. 2018, Jun;108:226-236.
- 34) Li Y, Ren X, Lio C, Sun W, Lai K, Liu Y, Zhang Z, Liang J, Zhou H, Liu L, Huang H, Ren J*, **Luo P***, A chlorogenic acid-phospholipid complex ameliorates post-myocardial infarction inflammatory response mediated by mitochondrial reactive oxygen species in SAMP8 mice. *Pharmacological Research*. 2018, Apr;130:110-122.
- 35) Xuecong Ren, Li Chen, Jing Xie, Zhifeng Zhang, Gengting Dong, Jie Liang, Liang Liu, 2, Hua Zhou*, **Pei Luo***. Resveratrol Ameliorates Mitochondrial Elongation via Drp1/Parkin/PINK1 Signaling in Senescent-like Cardiomyocytes. *Oxidative Medicine and Cellular Longevity*, 2017.
- 36) Zhou H, Liu JX, Luo JF, Cheng CS, Leung EL, Li Y, Su XH, Liu ZQ, Chen TB, Duan FG, Dong Y, Zuo YH, Li C, Lio CK, Li T, **Luo P**, Xie Y, Yao XJ, Wang PX, Liu L*. Suppressing mPGES-1 expression by sinomenine ameliorates inflammation and arthritis. *Biochemical Pharmacology*. 2017 Oct 15; 142:133-144.
- 37) Wang M, Wang Y, **Luo P**, Zhang H, Zhang M, Hu P*. Simultaneous determination of the styrene unit content and assessment of molecular weight of triblock copolymers in adhesives by a size exclusion chromatography method. *Journal of Separation Science*. 2017 Oct;40(20):3987-3995.
- 38) Jin Gao, Ming Chen, Xuecong Ren, Xiaobo Zhou, Qiang Shang, WQ Lu, **Pei Luo***, ZH Jiang*. Synthesis and cardiomyocyte protection activity of crocetin diamide derivatives. *Fitoterapia*. 2017 Sep; 121:106-111.
- 39) QianLong Wan, Jing Xie, XingDe Lia, Tao WJ, LiSheng Ding, Jian Liang, **Pei Luo***, Lin-Sen Qing*. An efficient direct competitive nano-ELISA for residual BSA determination in vaccines. *Analytical and Bioanalytical Chemistry*. 2017 Jul;409(19):4607-4614.
- 40) QianLong Wan, Jing Xie, XingDe Lia, LiSheng Ding, Jian Liang, **Pei Luo***, Lin-Sen Qing*. Development of a nano-SiO₂ based enzyme-linked ligand binding assay for the

determination of ibuprofen in human urine. *Talanta*. Volume 167, 15 May 2017, Pages 617-622.

- 41) Huang BM, Xiao SY, Chen TB, Xie Y, **Luo P**, Liu L, Zhou H*. Purity assessment of ginsenoside Rg1 using quantitative ¹H nuclear magnetic resonance. *Journal of Pharmaceutical and Biomedical Analysis*. 2017 May 30; 139:193-204.
- 42) Zhifeng Zhang, Yuan Liu, Xuecong Ren, Hua Zhou, Kaishun Wang, Hao Zhang, and **Pei Luo***. Caffeoylquinic Acid Derivatives Extract of *Erigeron multiradiatus* Alleviated Acute Myocardial Ischemia Reperfusion Injury in Rats through Inhibiting NF-KappaB and JNK Activations. *Mediators of Inflammation*. Volume 2016, Article ID 7961940, 11 pages
- 43) Jing Xie, Jie Li, Jian Liang, **Pei Luo***, Lin-Sen Qing*, Li-Sheng Ding. Determination of Contents of Catechins in Oolong Teas by Quantitative Analysis of Multi-components Via a Single Marker (QAMS) Method. *Food Analytical Methods*. 2016, DOI 10.1007/s12161-016-0592-5
- 44) Jianxin Liu, Jinshan Tang, Yihan Zuo, Yang Yu, **Pei Luo**, Xinsheng Yao, Yan Dong, Peixun Wang, Liang Liu*, Hua Zhou*. Staurosamine B inhibits macrophage activation by inhibiting NF-kappa B and ERK MAPK signaling. *Pharmacological Research*. (2016) 303–315
- 45) **LUO Pei**, DONG Gengting, LIU Liang, ZHOU Hua*. The Long-Term Consumption of Ginseng Extract Reduces the Susceptibility of Intermediate-Aged Hearts to Acute Ischemia Reperfusion Injury. *PLoS One*. 2015 Dec 9; 10(12):e0144733. doi: 10.1371/journal.pone.0144733.
- 46) DONG Gengting, CHEN Tingbo, REN Xuecong, ZHANG Zhifeng, HUANG Weixue, LIU Liang, **LUO Pei***, ZHOU Hua*. Rg1 prevents myocardial hypoxia/reoxygenation injury by regulating mitochondrial dynamics imbalance via modulation of glutamate dehydrogenase and mitofusin 2. *Mitochondrion*. 2015 Nov 24; 26:7-18.
- 47) ZHANG Zhifeng, HE Lili, LU Luyang, LIU Yuan, DONG Gengting, MIAO Janhua*, **LUO Pei***. Characterization and quantification of the chemical compositions of *Scutellariae Barbatae herba* and differentiation from its substitute by combining UHPLC–PDA–QTOF–MS/MS with UHPLC–MS/MS. *Journal of Pharmaceutical and Biomedical Analysis*. 2015 May 10; 109:62-6. doi: 10.1016/j.jpba.2015.02.025.
- 48) ZHANG ZhiFeng, LIU Yuan, LU Luyang, **LUO Pei***. Hepatoprotective activity of

Gentiana veitchiorum Hemsl. against carbon tetrachloride induced hepatotoxicity in mice. *Chinese Journal of Natural Medicines*. 2014, 12(7):0001-0007.

- 49) **LUO Pei**, HOU Shaozhen, DONG Gengting, CHEN Tingbo, LIU Liang, ZHOU Hua*. Effectiveness of Panax ginseng on Acute Myocardial Ischemia Reperfusion Injury Was Abolished by Flutamide via Endogenous Testosterone-Mediated Akt Pathway. *Evidence-Based Complementary and Alternative Medicine*, vol. 2013, Article ID 817826, 9 pages, 2013. doi:10.1155/2013/817826.
- 50) ZHANG Zhifeng, LU Luyang, **LUO Pei**, Qing Linsen , LIU Yuan. Two new ursolic acid saponins from *Morina nepalensis* var. *alba* Hand-Mazz. *Natural Product Research*. 2013. DOI: 10.1080/14786419.2013.824441
- 51) **LUO Pei**[†], WONG Yuanfong[†], GE Lin, ZHANG Zhifeng, LIU Yuan, LIU Liang, ZHOU Hua. Anti-inflammatory and analgesic effect of plumbagin through inhibition of nuclear factor-kappaB activation. *Journal of Pharmacology and Experimental Therapeutics*. 335, 735-742, 2010.
- 52) ZHOU Hua, HOU Shaozhen, **LUO Pei**, ZEN Bao, WANG Jingrong, WONG Yuanfong, JIANG Zhihong, LIU Liang. Ginseng protects rodent hearts from acute myocardial ischemia reperfusion injury through GR/ER-activated RISK pathway in an endothelial NOS-dependent mechanism. *Journal of Ethnopharmacology*. **135**, 287-298, 2011.
- 53) YI Xiaoqin, LI Ting, WANG Jingrong, Wong V.-K., **LUO Pei**, Wong Y.-F., JIANG Zhihong, LIU Liang, ZHOU Hua. Total ginsenosides increase coronary perfusion flow in isolated rat hearts through activation of PI3K/Akt-eNOS signaling. *Phytomedicine*. **17**, 1006-1015, 2010.
- 54) ZHANG Zhifeng, **LUO Pei**, LI Jie, ZHANG Hao*. Comparison of the antiinflammatory activities of three medicinal plants known as "meiduoluomi" in Tibetan folk medicine. *YAKUGAKU ZASSHI-JOURNAL OF THE PHARMACEUTICAL SOCIETY OF JAPAN*. **128**, 805-810, 2008.
- 55) **LUO Pei**, TAN Zhenghuai, ZHANG Zhifeng, LI Honghao, MO Zhengji*. Inhibitory effects of salvianolic acid B on the high glucose-induced mesangial proliferation via NF-kappaB-dependent pathway. *Biological and Pharmaceutical Bulletin*. **31**, 1381-1386, 2008.
- 56) **LUO Pei**, ZHANG Zhifeng, YI Tao, ZHANG Hao, MO Zhengji*. Anti-inflammatory activity of the extracts and fractions from *Erigeron multiradiatus* through bioassay-guided

procedures. *Journal of Ethnopharmacology*. **119**, 232-237, 2008.

- 57) **LUO Pei**, TAN Zhenghuai, ZHANG Zhifeng, ZHANG Hao, LIU Xianfu, MO Zhengji*. Scutellarin isolated from *Erigeron multiradiatus* inhibits high glucose-mediated vascular inflammation. *YAKUGAKU ZASSHI-JOURNAL OF THE PHARMACEUTICAL SOCIETY OF JAPAN*. **128**, 1293-1299, 2008.

Research Project as Principal Investigator (as PI)

- 1) *Project title*: 小分子串聯親和技術靶向獲取天然別構劑治療冠心病的研究
At Macau University of Science and Technology. Science & Technology Development Fund of Macao SAR (澳門科學技術發展基金).
Project No: 0157/2019/A3, 2020~2022.
- 2) *Project title*: 燈盞花素-RGD類肽聚合物的中試關鍵技術和藥效作用機制的研究
“2020年廣東省科技創新戰略專項項目”(文號:粵科科公示〔2020〕5號).
Project No: 0028/2019/AGJ, 2020~2021.
- 3) *Project title*: 組蛋白去乙酰化酶 Sirt6 失調導致慢性腎臟病動脈鈣化的分子機制及人參炔醇幹預的保護作用。2020年度國家自然科學基金委員會與澳門科學發展基金聯合科研資助合作研究項目(全國共11項)。
Project No: 0050/2020/AFJ, 2020~2021.
- 4) *Project title*: 基於活細胞可視化技術線粒體動態變化的評價及原人參三醇型人參皂苷治療缺血性心臟病作用機制的研究。
At Macau University of Science and Technology. Science & Technology Development Fund of Macao SAR (澳門科學技術發展基金).
Project No: 073/2011/A3, 2012~2015.
- 5) *Project title*: 微管馬達連接器與老化心肌缺血預適應的關係及白皮杉醇型萜類化合物的幹預作用。
At Macau University of Science and Technology. Science & Technology Development Fund of Macao SAR (澳門科學技術發展基金).
Project No: 052/2013/A2, 2013~2017.
- 6) *Project title*: **Bruker in vivo small animal image platform** (布魯克活體動物成像系統)。
At Macau University of Science and Technology. Science & Technology Development Fund of Macao SAR (澳門科學技術發展基金).

Project No: 053/2015/A3, 2015~2016.

- 7) *Project title: 缺氧復氧損傷 H9c2 線粒體動態變化的半定量分析方法研究. Macao Foundation of Macao SAR, 2012~2013.*

Granted US and Australia patents

- 1) **LUO Pei**, ZHANG Zhifeng, ZHANG Hao. Caffeoylquinic acid-rich extract and preparation as well as use thereof. US Utility Patent No 10,342,777 (2019/7/9) Granted
- 2) WANG, Jingrong, **LUO Pei**, ZHOU Hua. CHAN, WEIING, LIU Liang, JIANG Zhihong. Novel ginsenoside derivative compounds and the use thereof in protection against ischemia/reperfusion injury. Filed on 13 Nov. 2012. US Non-Provisional Patent Application No. 14/055,883; Granted on 1 March 2016, Patent No. US 9,273,088 B2
- 3) **LUO Pei**. CAFFEOYLQUINIC ACID-RICH EXTRACT AND PREPARATION AS WELL AS USE THEREOF. Australia Innovative Patent Application No. 2015101428; Granted on 11 December 2015
- 4) **LUO Pei**, ZHOU Hua, DONG Gengting. Method of identifying and screening drug candidate for preventing and/or treating ischemic myocardial disease. Australia Innovative Patent Application No. 2013101632; Granted on 13 December 2013
- 5) WANG, Jingrong, **LUO Pei**, ZHOU Hua. CHAN, WEIING, LIU Liang, JIANG Zhihong. Novel ginsenoside derivative compounds and the use thereof in protection against ischemia/reperfusion injury. Australia Patent Application No. 2013101420; Granted on 28 October 2013