

Betty Law-Yuen Kwan

Assistant Professor, PhD

Macau Institute for Applied Research in Medicine and Health
State Key Laboratory for Quality Research in Chinese Medicines
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Research Interests

- Cellular regulation and signaling of autophagy
- Molecular mechanisms that underlie autophagy and neurodegenerative diseases
- Novel drug discovery from Chinese medicinal herbs for neurological disorders

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Dr. Law obtained her Ph.D. Degree from The University of Hong Kong in 2009. She is now working on novel drug discovery from Chinese medicinal herbs and autophagy signaling pathway. With recent research focuses on the identification of novel autophagic enhancers from Chinese medicinal herbs using bioactivity-guided purification, she has identified a novel autophagic inducer, alisol B, from the rhizome of *Alisma orientale* as a potential antitumor agent, which can induce Endoplasmic Reticulum stress (ER stress) and calcium mobilization from internal stores, leading to autophagy through the CaMKK-AMPK-mammalian target of rapamycin (mTOR) signaling pathway. Her study provides detailed insights into the cytotoxic mechanism of a novel

antitumor compound and was published in the *Molecular Cancer Therapeutic* 2010. Besides, she is also interested in studying the therapeutic applications of the identified autophagic modulators by using both *in vitro* and *in vivo* approaches. Her current research focus would be on identifying novel autophagic enhancers to modulate neurodegenerative disorders through the removal of mutant or misfolded protein by autophagy.

Education:

June, 2001, B.Sc. (Hons). Hong Kong University of Science and Technology

Dec, 2003, M.Sc. Hong Kong University of Science and Technology

Oct, 2009, Ph.D. The University of Hong Kong

Professional Chronology:

Nov, 2009 - Apr, 2010 Research Assistant I, The University of Hong Kong

May, 2010 - Feb, 2011 Research Associate, The University of Hong Kong &

May, 2010 - Feb, 2011 Honorary Research Associate, The Chinese University of Hong Kong

Mar, 2011 - Aug, 2011 Postdoctoral Fellow, Hong Kong Baptist University

Sept, 2011 - present Assistant Professor, Macau University of Science and Technology

Teaching Subjects:

1) Biochemistry

2) Modern Biotechnology

3) Advances in Chinese Medicine Pharmaceutic

4) Clinical Pharmacology

Research Fields:

Molecular Biology and Pharmacology

Memberships:

Macau Laboratory Technologist Association (MLTA)

Awards:

2010 Eli Lilly Asia Outstanding Graduate Thesis Award for PhD student in China, Hong Kong and Macau

Selected Publications:

- 1) **Betty Y.K. Law**, Mingfu Wang, Dik-Lung Ma, Fawaz Al-Mousa, Francesco Michelangeli, Alice Wong, Margaret Ng, Ka-Fai To, Anthony Y.F. Mok, Rebecca Y. Y. Ko, Sze Kui Lam, Feng Chen, Chi-Ming Che, Pauline Chiu, and Ben C.B. Ko. Alisol B, a novel inhibitor of the SERCA pump, induces autophagy, ER-stress and apoptosis. *Molecular Cancer Therapeutics*, 9(3), 718-730, 2010.

- 2) **Betty Y.K. Law**, Liping, Pauline Chiu, and Ben C.B. Ko.
The autophagic and therapeutic role of compound TXT, an alkaloid isolated from Chinese medicinal herb-root, on multiple cancer cell lines. (*Manuscript in preparation, 2012*).

羅婉君博士

澳門科技大學澳門藥物及健康應用研究所
中藥質量研究國家重點實驗室(澳門科技大學)



研究方向

- 細胞自體吞噬的生物分子機理研究
- 細胞自體吞噬作用與治療腦神經退化性疾病的關係
- 從草藥中篩選具自體吞噬作用的活性成分作藥理研究

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羅博士於 2009 年於香港大學取得博士學位後，一直從事利用生物活性導向分離的方法，從中草藥中分離出具自體吞噬功能的創新活性成分作藥理研究。透過構建及利用不同層面的自噬標誌物檢測平臺，已成功從數十多種特選中草藥材中，挑選出中藥澤瀉進行深入研究，並成功分離出單一自噬活性成分 alisol B 及找出其主要調控網絡（CaMKK-AMPK-mTOR signaling pathway），以用作為抗癌的新候選藥物。其研究成果更於 2010 年發表於國際期刊 *Molecular Cancer Therapeutic* 上。

羅博士的主要研究領域為天然新藥研發，曾從事抗糖尿、抗炎、抗癌、化合物結構及其標靶蛋白相互關係等分子藥理研究。研究內容包括生物分子機理、化學分子結構與其活性關係、細胞內質壓力所引致的凋亡及自體吞噬作用，及 Ca^{2+} 與 AMPK-mTOR 傳遞訊號通路等。近期，專注於研究細胞自體吞噬作用與腦神經退化性疾病的關聯。其主要的研究內容包括，利用創新中藥活性化合物引發細胞自體吞噬，以加強錯誤摺疊蛋白質降解，為開發治療抗神經退化疾病提供新方向。

學歷：

2001年6月，香港科技大學生物學學士學位

2003年12月，香港科技大學環境科學碩士學位

2009年10月，香港大學哲學博士學位

工作經歷：

2009年11月-2010年4月，香港大學高級研究助理

2010年5月-2011年2月，香港大學研究員並兼任香港中文大學榮譽研究員

2011年3月-2011年8月，香港浸會大學博士後研究員

2011年9月-今，澳門科技大學，助理教授

授課科目：生物化學；現代生物技術；中藥學研究進展；臨床藥理學

研究領域：分子生物及藥理學

專業會員：澳門化驗師公會(非本地會員)

獲獎：禮來亞洲傑出研究生論文獎(2010)

研究論文：

- 1) **Betty Y.K. Law**, Mingfu Wang, Dik-Lung Ma, Fawaz Al-Mousa, Francesco Michelangeli, Alice Wong, Margaret Ng, Ka-Fai To, Anthony Y.F. Mok, Rebecca Y. Y. Ko, Sze Kui Lam, Feng Chen, Chi-Ming Che, Pauline Chiu, and Ben C.B. Ko. Alisol B, a novel inhibitor of the SERCA pump, induces autophagy, ER-stress and apoptosis. *Molecular Cancer Therapeutics*, 9(3), 718-730, 2010.
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