
SCM
中醫藥學

CURRICULUM VITAE of Dr. KO KA-SHUN JOSHUA (jksko@hkbu.edu.hk)

Name: Ko Ka-Shun Joshua

Academic qualifications:

1991-95	University of Hong Kong	Ph.D. in Pharmacology
1987-91	University of Toronto	B.Sc.(Hon) Specialists in Toxicology and Nutritional Sciences

Present academic position:

2005- Associate Professor, School of Chinese Medicine, Hong Kong Baptist University
2005- Honorary Associate Professor, Dept. of Pharmacology and Pharmacy, University of Hong Kong

Previous academic positions held:

2001-05 Assistant Professor (2001-05), School of Chinese Medicine, Hong Kong Baptist University
1998-2005 Honorary Assistant Professor, Department of Pharmacology, University of Hong Kong
2000-01 Senior Scientist, Technology Development and Applied Research Division, CK Life Sciences Int'l., (Holdings) Inc., *Member of the Cheung Kong group*
1997-2000 Research Fellow (Term of Service I: *40% teaching, 60% research*) Department of Pharmacology, University of Hong Kong
1996-98 Visiting Lecturer, School of Optometry/School of Nursing, Hong Kong Polytechnic University

Professional membership:

- American Association for Cancer Research
- Society of Biology (U.K.) ***C.Biol.***(Chartered Biologist)
- International Union of Basic and Clinical Pharmacology (IUPHAR) Gastrointestinal Section
- Hong Kong Pharmacology Society (Council member: 2008-09, 2014-15)

Previous relevant research work:

My research disciplines include pharmacology, toxicology, chemotherapy and gastroenterology. My current research interest and strength focus on the study of the carcinogenesis and pharmacotherapy of gastrointestinal cancers (particularly colon) by using active herbal medicinal compounds, and also on the identification of key molecular drug targets. I have recently explored the potential anti-nociceptive and anti-inflammatory actions of TCM formulations and single herbal drugs in the treatment of cancer pain and inflammation pain. I employ different cell and molecular biology methods, animal models of cancer and pain, with increasing works using proteomics and metabolomics approaches in our current studies. The new ventures in the coming years include research works on micro-RNA and tumor-targeting peptides delivery system.

Representative Publications

1. AUYEUNG, K.K.W., HAN, Q. & **KO, J.K.S.** (2014) Astragalus membranaceus: potential benefits and prospective role in the protection against inflammation and gastrointestinal cancers. *Journal of Physiology and Pharmacology* (Accepted)

2. TAN, Y., **KO, J.,*** LIU, X., LU, C., LI, J., XIAO, C., LI, L., NIU, X., JIANG, M., HE, X., ZHAO, H., ZHANG, Z., BIAN, Z., YANG, Z., ZHANG, G., ZHANG, W. & LU, A. (2014) Serum metabolomics reveals betaine and phosphatidylcholine as potential biomarkers for the toxic responses of processed *Aconitum Carmichaeli Debx*. *Molecular BioSystems* (Accepted; doi: 10.1039/C4MB00072B) **[* denotes co-first author]**

3. AUYEUNG, K.K.W., LAW, P.C. & **KO, J.K.S.** (2014) Combined therapeutic effects of vinblastine and Astragalus saponins (AST) in human colon cancer cells and tumor xenograft via inhibition of tumor growth and proangiogenic factors. *Nutrition and Cancer* **66(4),** 662-674.

4. **KO, J.K.S.** & AUYEUNG, K.K.W. (2014) Identification of functional peptides from natural and synthetic products on their anticancer activities by tumor targeting. *Current Medicinal Chemistry* **21,** 2346-2356.

5. **KO, J.K.S.** & AUYEUNG, K.K.W. (2014) Inflammatory bowel disease: etiology, pathogenesis and current therapy. *Current Pharmaceutical Design* **20,** 1082-1096.

6. **KO, J.K.S.** & AUYEUNG, K.K.W. (2013) Target-oriented mechanisms of novel herbal therapeutics in the chemotherapy of gastrointestinal cancer and inflammation. *Current Pharmaceutical Design* **19(1),** 48-66.

7. TAN, Y., LI, J., LIU, X., **KO, J.,** HE, X., LU, C., ZHAO, H., XIAO, C., NIU, X., ZHA, Q., YU, Z., ZHANG, W. & LU, A. (2013) Deciphering the differential toxic responses of *Radix aconiti lateralis praeparata* in healthy and hydrocortisone-pretreated rats based on serum metabolic profiles. *Journal of Proteome Research* **12,** 513-524.

8. LU, C., LIU, X., DING, X., CHEN, X., FAN, H., LIU, Y., XIE, N., TAN, Y., **KO, J.K.,** ZHANG, W. & LU, A. (2013) A metabolomics profiling study in hand-foot-and-mouth disease and modulated pathways of clinical intervention using rapid performance liquid chromatography/ quadrupole time-of-flight mass spectrometry. *Evidence-based Complementary and Alternative Medicine* **2013,** 647452. (doi: 10.1155/2013/647452)

9. AUYEUNG, K.K.W., LAW, P.C., CHAN, L.Y. & **KO, J.K.S.** (2012) Astragalus saponins downregulate hypoxia-induced VEGF induction in colon cancer cells. *BMC Complementary and Alternative Medicine* **12(1),** 160. (doi: 10.1186/1472-6882-12-160)

10. AUYEUNG, K.K.W., LAW, P.C. & **KO, J.K.S.** (2012) Novel anti-angiogenic effects of formononetin in human colon cancer cells and tumor xenograft. *Oncology Reports* **28,** 2188-2194. (doi: 10.3892/or.2012.2056)

11. AUYEUNG, K.K.W., WOO, P.K., LAW, P.C. & **KO, J.K.S.** (2012) Astragalus saponins modulate cell invasiveness and angiogenesis in human gastric adenocarcinoma cells. *Journal of Ethnopharmacology* **141(2),** 635-641. (doi: 10.1016/j.jep.2011.08.010)

12. **KO, J.K.S.** & CHO, C.H. (2011) Adaptive cytoprotection and the brain-gut axis. *Digestion* **83(Suppl. 1),** 19-24. **[Invited Review]** (doi: 10.1159/000323400)

13. WONG, H.P., HO, J.W., KOO, M.W., YU, L., WU, W.K., LAM, E.K., TAI, E.K., **KO, J.K.,** SHIN, V.Y., CHU, K.M. & CHO, C.H. (2011) Effects of adrenaline in human colon adenocarcinoma HT-29 cells. *Life Sciences* **88 (25-26),** 1108-1112.

14. **KO, J.K.S.** & LEUNG, C.C.Y. (2010) Ginger extract and polaprezinc exert gastroprotective actions by antioxidant and growth factor modulating effects in rats. *Journal of Gastroenterology and Hepatology* **25,** 1861-1869. (doi: 10.1111/j.1440-1746.2010.06347.x)

15. AUYEUNG, K.K.W., MOK, N.L., WONG, C.M., CHO, C.H. & **KO, J.K.S.** (2010) *Astragalus* saponins modulate mTOR and ERK signaling to promote apoptosis through the extrinsic pathway in HT-29 colon cancer cells. *International Journal of Molecular Medicine* **26,** 341-349. (doi: 10.3892/ijmm_00000471)

16. AUYEUNG, K.K.W. & **KO, J.K.S.** (2010) Novel herbal flavonoids promote apoptosis but differentially induce cell cycle arrest in human colon cancer cell. *Investigational New Drugs* **28,** 1-13. (doi: 10.1007/s10637-008-9207-3)

17. **KO, J.K.S.,** LEE, S.S. & MARTIN, H. (2010) Phytochemicals as modulators of PPARs and RXRs. *PPAR Research* **2010,** 407650. **[Editorial]** (doi: 10.1155/2010/407650)

18. AUYEUNG, K.K., CHO, C.H. & **KO, J.K.S.** (2009) A novel anticancer effect of *Astragalus* saponins: transcriptional activation of NSAID-activated gene. *International Journal of Cancer* **125,** 1082-1091. (doi: 10.1002/ijc.24397)

19. AUYEUNG, K.K.W. & **KO, J.K.S.** (2009) *Coptis chinensis* inhibits hepatocellular carcinoma cell growth through nonsteroidal anti-inflammatory drug-activated gene activation. *International Journal of Molecular Medicine* **24,** 571-577. (doi: 10.3892/ijmm_00000267)

20. **KO, J.K.S.** & CHIK, C.W.S. (2009) The protective action of *radix Astragalus membranaceus* against hapten-induced colitis through modulation of cytokines. *Cytokine* **47,** 85-90. (doi: 10.1016/j.cyto.2009.05.014)

21. AUYEUNG, K.K.W.**,** LAW, P.C. & **KO, J.K.S.** (2009) *Astragalus* saponins induces apoptosis via an ERK-independent NF-κB signaling pathway in the human hepatocellular HepG2 cell line. *International Journal of Molecular Medicine* **23,** 189-196. (doi: 10.3892/ijmm_00000116)

22. AUYEUNG, K.K., LIU, P., CHAN, C., WU, W., LEE, S.S. & **KO, J.K.S.** (2008) Herbal isoprenols induce apoptosis in human colon cancer cells through transcriptional activation of PPARγ. *Cancer Investigation* **26,** 708-717. (doi: 10.1080/07357900801898656)

23. TIN, M.M.Y., CHO, C.H., CHAN, K., JAMES, A.E. & **KO, J.K.S.** (2007) *Astragalus* saponins induce growth inhibition and apoptosis in human colon cancer cells and tumor xenograft. *Carcinogenesis* **28(6),** 1347-1355. (doi: 10.1093/carcin/bgl238)

24. **KO, J.K.S.,** LEUNG, W.C., HO, W.K. & CHIU, P. (2007) Herbal diterpenoids induce growth arrest and apoptosis in colon cancer cells with increased expression of the nonsteroidal anti-inflammatory drug-activated gene. *European Journal of Pharmacology* **559,** 1-13. (doi: 10.1016/j.ejphar.2006.12.004)

25. **KO, J.K.S.,** LAM, F.Y.L. & CHEUNG, A.P.L. (2005) Amelioration of experimental colitis by *Astragalus membranaceus* through anti-oxidation and inhibition of adhesion molecule synthesis. *World Journal of Gastroenterology* **11 (37),** 5787-5794.

26. **KO, J.K.S.** & CHO, C.H. (2005) The diverse actions of nicotine and different extracted fractions from tobacco smoke against hapten-induced colitis in rats. *Toxicological Sciences* **87 (1),** 285-295.

27. CHO, C.H. & **KO, J.K.S.** (2005) Herbal medicines and animal models of gastrointestinal diseases. In: S. Gad (ed.) *Drug Discovery Handbook*. John Wiley & Sons: Hoboken, U.S.A. Chapter 22, pp.1013-1035.

28. **KO, J.K.S.,** CHO, C.H. & LAM, S.K. (2004) Adaptive cytoprotection through modulation of nitric oxide in ethanol-evoked gastritis. *World Journal of Gastroenterology* **10 (17),** 2503-2508.

29. CHO, C.H., **KO, J.K.S.** & KOO, M.W.L. (2004) Perspective and clinical significance of eicosanoids in the digestive system. In: P. Curtis-Prior (ed.) *The Eicosanoids*. John Wiley & Sons: London. Chapter 36, pp.407-414.

30. LUK, H.H., **KO, J.K.,** FUNG, H.S. & CHO, C.H. (2002) Delineation of the protective action of zinc sulfate on ulcerative colitis in rats. *European Journal of Pharmacology* **443,** 197-204.

31. **KO, J.K.S.** (2002) Biomolecular free radical toxicity: causes and prevention. *Biochimie* **84,** 349-351. **[Invited Book Review]**

32. **KO, J.K.S.,** SHAM, N.F., GUO, X. & CHO, C.H. (2001) Beneficial intervention of experimental colitis by passive cigarette smoking through the modulation of cytokines in rats. *Journal of Investigative Medicine* **49,** 21-29.

33. GUO, X., **KO, J.K.S.,** MEI, Q.B. & CHO, C.H. (2001) Aggravating effect of cigarette smoke exposure on experimental colitis is associated with leukotriene B_4 and reactive oxygen metabolites. *Digestion* **63,** 180-187.

34. GUO, X., LIU, E.S.L., **KO, J.K.S.,** WONG, B.C.Y., YE, Y., LAM, S.K. & CHO, C.H. (2001) Protective role of cyclooxygenase inhibitor in the adverse action of passive cigarette smoking on the initiation of experimental colitis in rats. *European Journal of Pharmacology* **411,** 193-203.

35. **KO, J.K.S.** & CHO, C.H. (2000) Alcohol drinking and cigarette smoking: a "partner" for gastric ulceration. *Chinese Medical Journal (Taipei)* **63,** 845-854. **[Invited Review]**

36. GUO, X., WANG, W.P., **KO, J.K.S.** & CHO, C.H. (1999) Involvement of neutrophils and free radicals in the potentiating effects of passive cigarette smoking on inflammatory bowel disease in rats. *Gastroenterology* **117,** 884-892 (with editorial).

37. **KO, J.K.S.** & CHO, C.H. (1999) Co-regulation of mucosal nitric oxide and prostaglandins in gastric defensive mechanisms and their roles in adaptive cytoprotection. *Inflammation Research* **48,** 471-478.

38. **KO, J.K.S.,** MA, J.J., CHOW, J.Y.C. & CHO, C.H. (1998) The correlation of the weakening effect on gastric mucosal integrity by 5-HT with neutrophil activation. *Free Radical Biology and Medicine* **24,** 1007-1014.

39. **KO, J.K.S.** & CHO, C.H. (1998) A histological study on the mechanisms of adaptive cytoprotection on ethanol-induced mucosal damage in rat stomachs. *Digestive Diseases and Sciences* **43,** 1248-1257.

40. **KO, J.K.S.,** CHING, C.K., CHOW, J.Y.C., ZHANG, S.T., LAM, S.K. & CHO, C.H. (1997) The vascular and glandular organoprotective properties of metronidazole in the rodent stomach. *Alimentary Pharmacology and Therapeutics* **11,** 811-819.

41. **KO, J.K.S.,** TANG, F. & CHO, C.H. (1997) Co-regulation of mucosal prostanoids and substance P by indomethacin in rat stomachs. *Life Sciences* **60,** PL277-PL281.

42. **KO, J.K.S.** & CHO, C.H. (1996) Adaptive gastric mucosal cytoprotection in rats: different modes of action by three mild irritants. *Digestion* **57,** 54-59.

43. **KO, J.K.S.** & CHO, C.H. (1996) The antilesion actions of anticholinergic agents on ethanol-induced injury in rat stomachs: The importance of gastric vascular integrity and tonicity. *Journal of Autonomic Pharmacology* **16,** 117-125.

44. WONG, D., QIU, B.S., **KO, J.K.S.,** KOO, M.W.L. & CHO, C.H. (1996) Mucosal nitric oxide is not responsible for the hemodynamic changes induced by nicotine in rat stomachs. *Environmental Toxicology and Pharmacology* **1,** 167-174.

45. **KO, J.K.S.** & CHO, C.H. (1995) Leucocyte-endothelial interactions in the vasculature following inflammation of the gastric mucosa. *Journal of Gastroenterology and Hepatology* **10,** 469-470. **[Editorial]**

46. **KO, J.K.S.,** CHO, C.H., LAM, S.K., KOO, M.W.L. & CHING, C.K. (1995) Contributions of physical and chemical properties of mild irritants to gastric cytoprotection in rats. *Life Sciences* **57,** PL13-PL18.

47. **KO, J.K.S.** & CHO, C.H. (1995) Endogenous mediators in adaptive cytoprotection against ethanol-induced gastric gland damage in rabbits. *Life Sciences* **56,** PL1-PL5.

48. **KO, J.K.S.** & CHO, C.H. (1995) The mechanistic pathway of gastric adaptive cytoprotection: a study on different components of the autonomic nervous system. *Journal of Autonomic Pharmacology* **15,** 205-214.

49. **KO, J.K.S.** & CHO, C.H. (1995) The role of non-protein sulfhydryl compounds in gastric adaptive cytoprotection against ethanol-induced mucosal damage in rats. *Inflammation Research* **44,** 242-244.

50. **KO, J.K.S.,** CHO, C.H., LAM, S.K. & CHING, C.K. (1995) The importance of gastric emptying and mucosal folds in the adaptive cytoprotection of mild irritants in rats. *Inflammation Research* **44,** 518-522.

51. CHAN, Y.S., **KO, J.K.S.** & CHO, C.H. (1995) The role of dorsal motor nucleus of vagus in gastric function and mucosal damage induced by ethanol in rats. *Digestive Diseases and Sciences* **40,** 2312-2316.

52. LIU, X.G., CHO, C.H. & **KO, J.K.S.** (1995) Felodipine and ethanol-induced gastric mucosal damage in rats. *Pharmacology* **51,** 391-397.

53. **KO, J.K.S.,** CHO, C.H. & OGLE, C.W. (1994) A correlative study on the mechanism of adaptive cytoprotection against ethanol-induced gastric lesion formation in rats. *Journal of Gastroenterology and Hepatology* **9,** 492-500.

54. CHO, C.H., **KO, J.K.S.** & TANG, X.L. (1994) The differential mechanisms of mild irritants on adaptive cytoprotection. *Journal of Gastroenterology and Hepatology* **9 (Suppl. 1),** S24-S28.

55. **KO, J.K.S.,** CHO, C.H. & OGLE, C.W. (1994) The vagus nerve and its non-cholinergic mechanism in the modulation of ethanol-induced gastric mucosal damage in rats. *Journal of Pharmacy and Pharmacology* **46,** 29-32.

56. CHO, C.H., KOO, M.W.L. & **KO, J.K.S.** (1994) Modulatory role of 5-HT_3 receptors in gastric function and ethanol-induced mucosal damage in rat stomachs. *Pharmacology* **49,** 137-143.

57. CHO, C.H., CHEN, B.W., HO, C.S., **KO, J.K.S.** & LAM, S.K. (1994) Assessment of hemodynamic changes in rat stomachs by laser Doppler velocimetry and reflectance spectrophotometry. *Digestion* **55,** 389-394.