

Curriculum Vitae

Dr. Jun-Ping Xu

Email: junping.xu@asu.edu Tel: 480-648-2747

NAME: Xu, Jun-Ping

GENDER: Male

BIRTH PLACE: Shanghai, China

NATIONALITY: U.S.A. (after 2004), China (before 2004)

EDUCATION:

Ph.D., in Pharmaceutical Sciences, Bioorganic Chemistry, Medicinal Chemistry.

Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, 1988

Major courses: Bioorganic/natural products Chemistry, Medicinal Chemistry, Pharmaceutical Sciences, and Chemical Analysis.

Research focus: Discovery and Development of Biological Active Agents from Natural sources.

B.S., in Pharmaceutical Sciences & Chinese Medicine

Shanghai University of Chinese Medicine, Shanghai, China, 1981

Major courses: Bioorganic Chemistry, Medicinal Chemistry, Analytical Chemistry, Botanical Medicine, Pharmacology, and Pharmaceutical Sciences.

Minor courses: Biochemistry, Physiology, Pathology, Microbiology, Botany, and Chinese Medicine.

RESEARCH EXPERIENCES:

- 2004~present Associate Professor (Research)
Cancer Research Institute and Department of Chemistry & Biochemistry,
Arizona State University, USA
- 1996~2003 Assistant Professor (Research)
Cancer Research Institute and Department of Chemistry & Biochemistry,
Arizona State University, USA
- 1991~1995 Postdoctoral researcher to Faculty Research Associate
Cancer Research Institute and Department of Chemistry & Biochemistry,
Arizona State University, USA
- 1989~1991 Postdoctoral researcher to Associate Professor. Supervised research projects of
senior students in graduate/Master courses.
Shanghai Institute of Materia Medica, Chinese Academy of Science,
Shanghai, China
Received: Outstanding Postdoctoral Research Award in China
- 1986~1988 Guest Researcher, Graduated Student, and Ph.D. candidate
Tokyo University of Pharmacy and Life Science,
Tokyo, Japan
- 1980~1981 Guest Researcher
Shanghai Institute for Drug Control, Shanghai, China

1980~1985 Research Engineer
Shanghai Institute of Pharmaceutical Industry, Shanghai, China
Received: Excellent Young Chemist Award in Shanghai, China

PROFESSIONAL FIELDS:

Highly motivated bioorganic/medicinal chemist with plentiful research experiences and knowledge in natural medicine, biological activity and pharmaceutical sciences; focused on discovery and development of novel chemotherapeutic drug candidates with small molecule; discovered many valuable bioactive principals from natural sources (including herbs, plants, marine animals and microorganisms), with having over 50 scientific publications and holding 5 PCT/US patents.

i. Highlights of Knowledge on Pharmaceuticals:

- Bioorganic/natural products chemistry, Medicinal chemistry, Analytical chemistry, and Drug analysis
- Pharmacology, Biochemistry and Therapeutic Chinese medicine
- Pharmaceutical sciences, Biological activity analysis, and Bioinformatics
- Chinese natural drugs, botanical medicine and food nutrition
- Biology, botany, immunology and microbiology

ii. Highlights of skills and knowledge in drug discovery and development:

- Focused on discovery of new biologically active principals and therapeutic valuable agents with small molecules from natural sources and by molecular modification.
- High level skills in fine chromatographic and separation techniques (LC, HPLC, GC) and in bioassay directed fractionation.
- Strong ability to elucidate various bioactive structures with modern spectroscopes (NMR, FTIR, UV, MS, MS/MS, and others).
- Extensive knowledge on in vitro and in vivo assay, especially in anti-carcinoma, anti-inflammatory, antioxidant and immuno-regulating effects.
- Broad-range-knowledge in biochemistry, chemical biology, molecular biology, biological science, cancer research, SAR, toxicology, PK/PD, drug degradation, drug delivery, and active drug metabolism.
- Many successful experiences in drug and food analysis, and establishment of new analytic methods (in quality and quantity).

iii. Highlights of accomplishments in drug discovery and development:

- Discovered and elucidated potent neoplastic inhibitors, Irciniastatins A and B.
- Discovered and elucidated anticarcinoma agents, Dolastatins 16~19.
- Discovered and elucidated antitumor cyclopeptides, Phakellistatins 4~9.
- Discovered and elucidated selective cancer cell growth inhibitor, Agelagalastatin.
- Discovered and elucidated potent cytotoxic disteroidal alkaloids, Cephalostatins 10~20.
- Participated in an Investigation for growth inhibitory mechanism of Cephalostatin-1 against carcinoma cells with other group.
- Discovered and elucidated novel immune-enhancing cycloartane saponins, Curculigosids from a famous Chinese tonic herb *Curculigo orchoides*
- Discovered and elucidated new immuno-modulating triterpenoidal saponins, Mussaendosides from a Chinese folk medicine *Mussaenda pubescens*
- Discovered bioactive monoterpenes from a Chinese folk herb Fructus Gardeniae
- Conducted studies on anti-neoplastic pregnane glycosides discovered from a Chinese

- traditional botanical herb *Periploca sepium*
- Development of analytical methods for controlling qualities and bioactive constituent quantities of an herb prescription titled as *Liu-Ying-Wan*

TEACHING EXPERIENCES:

- HST385 The History of Chinese Medicine 2008-2014

MEMBERSHIP IN SCIENTIFIC SOCIETIES:

- American Chemical Society (2002-2006)
- Chinese Chemical Society (1989-1991)
- Chinese Pharmaceutical Society (1989-1991)
- The Pharmaceutical Society of Japan (1986-1989)
- Japan Society of Pharmacognosy (1986-1989)
- Chinese Pharmaceutical Society (1981-1985)

BOOKS:

Xu, J. P. **Cancer Inhibitors from Chinese Natural Medicines.** Published by CRC Press, Taylor & Francis group, in Dec. 2016. (ISBN: 978-1-4987-8764-2)

Xu, J. P. **Natural Substances for Cancer Prevention.** The book proposal has been accepted by a CRC Press, Taylor & Francis group, in 2017. (ISBN will be 978-0-8153-6538-9)

PATENTS:

Pettit, G.R.; Smith, T.H.; **Xu, J.P.**; and Herald, D. Crystal structures of dolastatin 16 and dolamethylleuine and dolaphenvaline, and methods for preparing dolamethylleuine and dolaphenvaline. US 9,175,041B2 Nov. 3, 2015.

Pettit, G.R.; Smith, T.H.; **Xu, J.P.**; and Herald, D. X-ray crystal structure of dolastatin 16 and methods for the preparation of the dolamethylleuine and dolaphenvaline. PCT Int. Appl., WO 2012148943 A1 20121101.

Pettit, G.R. and **Xu, J. P.** Antineoplastic Agents Irciniastatins A and B discovered from the Indo-Pacific Marine Sponge *Ircinia ramose*. PCT Int. Appl., WO2005054809A2, 20041117.

Pettit, G.R. and **Xu, J. P.** Isolation and structural elucidation of the human cancer cell growth inhibitory Compound denominated Agelagalastatin. PCT Int. Appl., WO/1999/063942, 19990609.

Pettit, G.R. and **Xu, J. P.** Isolation and structural elucidation of cytotoxic linear and cyclo-depsipeptides dolastatins 16, 17 and 18. PCT Int. Appl., (1998), WO 98-US3455 19980223; US6239104B1, US6239104.

Pettit, G.R. and **Xu, J. P.** Isolation and Structural elucidation of the human cancer cell growth inhibitory cyclicpeptides phakellistatins 4, 5, 6, 7, 8, and 9. US5646246 A, 19970708.

REVIEWS:

Xu, R.S., Zhao, W.M., **Xu, J. P.**, Zhao, B.P., and Qin, G.W. Studies on bioactive saponins from Chinese medicinal plants *Adv. Exp. Med. Biol.*, (1996), 404 (Saponins Used in Traditional and Modern

Medicine) 371~382.

Xu, R.S., Zhao, W.M., **Xu, J. P.**, Zhao, B.P., and Qin, G.W. Studies on bioactive saponins from Chinese medicinal plants. *Book of Abstracts, 210th ACS National Meeting, Chicago, IL, (1995) Aug. 20~24.*

Xu, R.S., **Xu, J. P.** and Ye, Y. Some New Drugs from Chinese Medicinal Plants. *International J. Oriental Medicine*, (1992), 1~35.

PUBLICATIONS:

Pettit, G.R., Du, J., Xu, J.P. A New Pyridine Alkaloid from the Indonesian Marine Sponge Halichondria sp. (2017), in preparation.

Pettit, G.R., **Xu, J.P.**, Chapuis, J-C. The Cephalostatins. 23. Isolation, structure and cancer cell growth inhibition of cephalostatin 20. *J. Nat. Prod.* (2015), 78, 1446-50.

Pettit, G.R., Smith, T.H., Arce, P.M., Flahive, E.J., Anderson, C.R., Chapuis, J-C., **Xu, J. P.**, Groy, T.L., Belcher, P.E., and Macdonald, C.B. Antineoplastic Agents. 599. Total synthesis of dolastatin 16. *J. Nat. Prod.* (2015), 78 (3), 476-85.

Pettit, G.R., Smith, T.H., **Xu, J.P.**, Herald, D.L., Flahive, E.J., Anderson, C.R., Belcher, P.E., and Knight, J.C. Antineoplastic Agents. 590. X-ray crystal structure of dolastatin 16 and syntheses of the dolamethylleuine and dolaphenvaline Units *J. Nat. Prod.* (2011), 74(5), 1003-8.

Abi-Ghanem, D., Lai, X.Z., Beghman, L.C., Horvat, D., Li, J., Romo, D., Uddin, M.N., Kamano, Y., Nogawa, T., **Xu, J.P.**, Pettit, G.R., and Puschett, J.B. A chemifluorescent immunoassay for the determination of mainobufagenin in body fluids *J. Immunoassay Immunochem.* (2011), 32(1), 31-46.

Pettit, R., Pettit, G.R., **Xu, J. P.** Weber, C.A. and Rechert, L.A. Isolation of human cancer cell growth inhibitory, antimicrobial lateritin from a mixed fungal culture. *Planta Medica* (2009), 75, 1-2.

Pettit, G.R., Hogan, F., **Xu, J. P.**, Tan, R., Nogawa, T., Cichacz, Z., Pettit, R.K., Du, J., Ye, Q.H., Cragg, G.M., Herald, C.L., New sources of naturally occurring cancer cell growth inhibitors from marine organisms, terrestrial plants, and microorganisms. *J. Nat. Prod.* (2008), 71(3), 438-44.

Pettit, G.R., **Xu, J. P.** Irciniastatins A and B from *Europaisches patentamt* (2006) 04811292. 4-2209-US2004038530.

Pettit, G.R., **Xu, J. P.**, Chapuis, J.C., Pettit, R.K., Tachett, L.P., Doubek, D.L., Hooper J.N.A. and Schmidt, J.M. Antineoplastic Agents. 520. Isolation and structure of irciniastatins A and B from the Indo-Pacific marine sponge *Ircinia ramose*. *J. Med. Chem.* (2004), 47(5), 1149-52.

Pettit, G.R., **Xu, J. P.**, Doubek, D.L., Chapuis, J.C. and Schmidt, J.M. Antineoplastic Agents. 510. Isolation and structure of dolastatin 19 from the gulf of california sea hare *Dolabella auricularia* *J. Nat. Prods.* (2004), 67(8), 1252-5.

Dirsch, V.M.; Muller, I.M.; Eichhorst, S.T.; Pettit, G.R.; Kamano, Y.; Inoue, M.; **Xu, J. P.**; Ichihara, Y.; Wanner, G.; and Vollmar, A. M Cephalostatin 1 selectively triggers the release of Smac/DIABLO and subsequent apoptosis that is characterized by an increased density of the mitochondrial matrix. *Cancer Res.* (2003), 63(24), 8869-76.

Song, P.J., Sheu, J.H., and **Xu, J. P.** Survey of briarave-type diterpenoids of marine origin *Heterocycles* (2002), 56(3), 535-79.

Pettit, G. R., Toki, Brian E., **Xu, J. P.**, Baniel, C. Synthesis of the marine sponge cycloheptapeptide phakellistatin 5. *J. Nat. Prods.* (2000), 63(1), 22-8.

Pettit, G.R., **Xu, J. P.**, Gingrich, D.M., Williams, M.D., Doubek, D.L., Chapuis, J.-C. and Schmidt, J.M. Antineoplastic Agents 394. Isolation and structure of agelagalastatin from the Papua New Guinea marine sponge *Agelas* sp. *Chem. Commun.*, (1999), (10), 915-6.

Pettit, G.R., Tan, R., **Xu, J. P.**, Ichihara, Y., Williams, M.D., and Boyd, M.R. Antineoplastic Agents 398. Isolation and structure modification of Cephalostatins 18 and 19. *J. Nat. Prod.*, (1998), 61(7), 955-8.

- Pettit, G.R., **Xu, J. P.**, Hogan, F., and Cerny, R. L. Isolation and structure of dolastatin 17. *Heterocycles*, (1998), 47(1), 491-6.
- Pettit, G.R., **Xu, J. P.**, Williams, M.D., Hogan, F., Schmidt, J.M., and Cerny, R.L. Antineoplastic Agents 370. Isolation and structure of dolastatin 18. *Bioorg. Med. Chem. Lett.*, (1997), 7(18), 827-32.
- Pettit, G.R., **Xu, J. P.**, Hogan, F., Williams, M.D., Cerny, R.L., Boyd, M.R., Doubek, L., and Schmidt, J.M. Isolation and structure of the human cancer cell growth Inhibitory cyclodepsipeptide, dolastatin 16. *J. Nat. Prod.*, (1997), 60(8), 752-4.
- Xu, R.S., Zhao, W.M., **Xu, J. P.**, Zhao, B.P., and Qin, G.W. Studies on bioactive saponins from Chinese medicinal plants. *Adv. Exp. Med. Biol.*, (1996), 404 (Saponins Used in Traditional and Modern Medicine) 371~82.
- Pettit, G.R., Srirangam, J.K., Herald, D.L., **Xu, J. P.**, Boyd, M.R., Kamano, Y., Schmidt, J.M. and Erickson, K.L. Isolation, structure and conformational analysis of stylopeptide 1, a new marine porifera cycloheptapeptide. *J. Org. Chem.*, (1995), 60(25), 8257-61.
- Pettit, G.R., **Xu, J. P.**, Ichihara, Y., Boyd, M.R., and Schmidt, J.M. Isolation and Structures of the Exceptional Pterobranchia Human Cancer Inhibitors Cephalostatins 16 and 17. *Bioorg. Med. Chem. Lett.*, (1995), 5(17), 2027-32.
- Xu, R.S., Zhao, W.M., **Xu, J. P.**, Zhao, B.P., and Qin, G.W. Studies on bioactive saponins from Chinese medicinal plants. *Book of Abstracts, 210th ACS National Meeting, Chicago, IL, (1995) Aug. 20~24.*
- Zhao, W.M., **Xu, J. P.**, Qin, G.W., and Xu, R.S. Saponins from *Mussaenda pubescens*. *Phytochem.*, (1995), 39(1), 191-3.
- Pettit, G.R., **Xu, J. P.**, Dorsaz, A.-C., Williams, M.D., Boyd, M.R., and Brune, D.C. Isolation and Structure of the Human Cancer Cell Growth Inhibitory Cyclic Decapeptides Phakellistatins 7, 8 and 9. *Bioorg. Med. Chem. Lett.*, (1995), 5(13), 1339-44.
- Pettit, G.R., **Xu, J. P.**, Boyd, M.R., Cerny, R.L., Williams, M.D. and Dorsaz, A.-C. Antineoplastic Agents 323. Isolation and Structure of Phakellistatin 6 from a Chuuk Archipelago Marine Sponge. *Bioorg. Med. Chem. Lett.*, (1994), 4(22), 2677-82.
- Pettit, G.R., **Xu, J. P.**, Cichacz, Z.A., Williams, M.D., Dorsaz A.-C., and Brune, D.C. Antineoplastic Agents 315. Isolation and Structure of the Marine Sponge Cancer Growth Inhibitor Phakellistatin 5. *Bioorg. Med. Chem. Lett.*, (1994), 4(17), 2091-6.
- Pettit, G.R., **Xu, J. P.**, Cichacz, Z.A., Schmidt, J. M. and Dorsaz, A.-C. Isolation and Structure of the Human Cancer Cell Growth Inhibitory Phakellistatin 4 from the Western Pacific Sponge *Phakellia copstata*. *Heterocycles*, (1994), 40(2), 501-6.
- Zhao, W.M., **Xu, J. P.**, Qin, G.W., Xu, R.S., Wu, H.M., and Weng, G.H. New Triterpenoid Saponins from *Mussaenda pubescens*. *J. Nat. Prod.*, (1994), 57(12), 1613-8.
- Zhao, W.M., **Xu, J. P.**, Qin, G.W., and Xu, R.S. Two New Monoterpenes from Fruits of *Gardenia jasminoides*. *Phytochem.*, (1994), 37(4), 1079-81.
- Zhao, W.M., **Xu, J. P.**, Qin, G.W., and Xu, R.S. Two New Saponins from *Mussaenda pubescens*. *Chin. Chem. Lett.*, (1994), 5(4), 309-10.
- Pettit, G.R., **Xu, J. P.**, Ichihara, Y., Boyd, M.R., and Williams, M.D. Antineoplastic Agent 285. Isolation and Structures of Cephalostatins 14 and 15. *Can. J. Chem.*, (1994), 72(11), 2260-7.
- Pettit, G.R., Ichihara, Y., **Xu, J. P.**, Boyd, M. R., and Williams, M.D. Isolation and Structure of the Symmetrical Diteroidal Alkaloid Cephalostatin 12 and 13. *Bioorg. Med. Chem. Lett.*, (1994), 4(12), 1507-12.
- Pettit, G.R., **Xu, J. P.**, Williams, M.D., Christie, N.D., Schmidt, J.M., Doubek, D.L., and Boyd, M.R. Isolation and Structure of Cephalostatins 10 and 11 from *Cephalodiscus gilchristi*. *J. Nat. Prod.*, (1994), 57(1), 52-63.

- Xu, R.S., **Xu, J. P.** and Ye, Y. Some New Drugs from Chinese Medicinal Plants. *International J. Oriental Medicine*, (1992), 1~35.
- Xu, J. P.**, Luo, Z., Dong, J.Y., and Xu, R.S. Mussaendosides M and N, New Saponins from *Mussaenda pubescens* *J. Nat. Prod.*, (1992), 55(8), 1124-8.
- Xu, J. P.** and Xu, R.S. New Phenol Glucosides from *Curculigo orchoides*. *Acta Pharm. Sinica*, (1992), 27(5), 353-7.
- Xu, J. P.** and Xu, R.S. New Cycloartane-type Sapogenins and their Glycosides from *Curculigo orchoides*. *Phytochem.*, (1992), 31(7), 2455-8.
- Xu, J. P.**, Xu, R.S., and Li, X.Y. Four New Cycloartane Saponin from *Curculigo orchoides*. *Planta Medica*, (1992), 58(2), 208-10.
- Xu, J. P.**, Xu, R.S. and Li, X.Y. Glycosides of a Cycloartane Saponin from *Curculigo orchoides*. *Phytochem.*, (1992), 31(1), 233-6.
- Xu, J. P.** and Xu, R.S. New Cycloartane Sapogenin and Its Saponins from *Curculigo orchoides*. *Chin. Chem. Lett.*, (1991), 2(3), 227-30.
- Xu, J. P.**, Luo, Z., Dong, J.Y., and Xu, R.S. New Saponins Mussaendosides A. B and C from *Mussaenda pubescens*. *Acta Chem. Sinica*, (1991), 49(6), 621-4.
- Xu, J. P.**, Luo, Z., Dong, J.Y., Wu, H., and Xu, R.S. Mussaendoside M from *Mussaenda pubescens*. *Chin. Chem. Lett.*, (1991), 2(4), 299-300.
- Xu, J. P.**, Luo, Z., Dong J.Y., and Xu, R.S. New Triterpenoidal Saponins from *Mussaenda pubescens*. *Chin. Chem. Lett.*, (1990), 1, 93.
- Xu, J. P.**, Takeya, K., and Itokawa, H. Pregnanes and Cardenolides from *Periploca sepium*, *Phytochem.*, (1990), 29(1), 244-6.
- Itokawa, H., **Xu, J. P.**, and Takeya, K. Studies on Chemical Constituents of Antitumor Fraction from *Periploca sepium* V. Structure of New Pregnane Glycosides J. K. F and O. *Chem. Pharm. Bull.*, (1988), 36(11), 4441-6.
- Itokawa, H., **Xu, J. P.**, and Takeya, K. Studies on Chemical Constituents of Antitumor Fraction from *Periploca sepium* IV. Structure of New Pregnane Glycosides D. E. L and M. *Chem. Pharm. Bull.*, (1988), 36(6), 2084-9.
- Itokawa, H., **Xu, J. P.**, and Takeya, K. Pregnane Glucosides from an Antitumor Fraction of *Periploca sepium*. *Phytochem.*, (1988), 27(4), 1173-9.
- Itokawa, H., **Xu, J. P.**, Takeya, K., Watanabe, K. and Shoji, J. Studies on Chemical Constituents of Antitumor Fraction from *Periploca sepium* II. Structure of New Pregnane Glycosides A. B and C. *Chem. Pharm. Bull.*, (1987), 36 (3), 982-7.
- Itokawa, H., **Xu, J. P.**, and Takeya, K. Studies on Chemical Constituents of Antitumor Fraction from *Periploca sepium*. *Chem. Pharm. Bull.*, (1987), 35(11), 4524-9.
- Xu, J. P.** and Dong, Q. Studies on Chemical Constituents of *Curculigo orchoides*, II. Isolation and Structural Elucidation of a new Compound Curcoligine A. *Zhongcaoyao*, (1987), 18(5), 194-5, 222.
- Xu, J. P.** and Dong, Q. Studies on Chemical Constituents of *Curculigo orchoides*, I. Isolation and Structural Elucidation of Curcoligoside and Orcinal Glucoside. *Zhongcaoyao*, (1986), 17(6), 8-9, 38.
- Xu, J. P.** and Xie, F. Studies on Determination of Bufadienolides in Liu-Ying-Wan . *J. Pharm. Analysis*, (1984), 4(6), 323-6.
- Xu, J. P.** and Yang, G. Quantitative Analysis of α,β -Asarone in Plants of *Acorus* Genus *Zhongcaoyao*, (1979), 7, 11-3.