

## Huilin Li, Ph.D.

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### EDUCATION

**University of Warwick**, Coventry, UK 2009-2012

Ph.D. in Chemistry

Supervisor: Peter B. O'Connor

Studies of protein posttranslational modifications by high resolution tandem mass spectrometry

**Changchun Institute of Applied Chemistry**, Chinese Academy of Sciences, China 2005-2008

M.Sc. in Chemistry

Supervisor: Zhiqiang Liu

Ultrafiltration LC-MS approach to investigate the interactions of proteins with natural products

**Shandong University**, Jinan, China 1998-2002

B.Sc. in Pharmacy

### PROFESSIONAL APPOINTMENTS

Postdoctoral research scholar 2013-present

Department of Biological Chemistry, David Geffen School of Medicine,

University of California, Los Angeles

Advisor: Joseph A. Loo

Assistant Professor 2007-2009

Changchun Institute of Applied Chemistry, Chinese Academy of Sciences

Research Assistant 2002-2007

Changchun Institute of Applied Chemistry, Chinese Academy of Sciences

### AWARDS

American Society of Mass Spectrometry Postdoctoral Award 2014

Warwick Postgraduate Research Scholarship (WPRS) 2009-2012

University of Warwick Departmental Studentships 2009-2012

Travel Award for the 25<sup>th</sup> Lake Louise Tandem Mass Spectrometry Workshop 2012

IMSF Travel Grant for the 19<sup>th</sup> International Mass Spectrometry Conference 2012

BMSS Travel Award for the 59<sup>th</sup> ASMS Conference on Mass Spectrometry 2011

Travel Award for the 8<sup>th</sup> UppCon Conference on Electron Capture and Transfer 2011

Dissociation

Science and Technology Development Project of Jilin Province (20080736) 2008-2010

Science and Technology Development Project of Changchun Bureau of Science and 2007-2009

Technology (2007GH27)

## TEACHING EXPERIENCE

<b>Mentor</b> Research mentor to Warwick master students Ean Allafi (Feb-July, 2010), Meng Li (Feb-July, 2012); CIAC undergraduates Qiang Wang (2005), Xue Zhao (2007)	2005- 2012
<b>Teaching assistant</b> , Physical Chemistry laboratory University of Warwick	Spring 2012
<b>Teaching assistant</b> , Mass Spectrometry University of Warwick	Spring 2010- 2012

## PROFESSIONAL ACTIVITIES AND AFFILIATIONS

### Referee for Peer Reviewed Journals

Journal of American Society of Mass Spectrometry  
RSC advances

### Societies

American Society of Mass Spectrometry  
Protein Science

## PUBLICATIONS

1. X Zhang, **H Li**, JA Loo, RR Julian, B Moore, P Wongkongkathep, RRO Loo. Radical directed dissociation of peptides and proteins by IRMPD and SORI-CID with FTICR mass spectrometry. *Rapid Commun. Mass Spectrom.* **2014**. 28, 2729-2734.
2. **H Li**, P Wongkongkathep, SL Van Orden, RRO Loo, JA Loo. Revealing Ligand Binding Sites and Quantifying Subunit Variants of Non-Covalent Bound Protein Complexes in a Single Native Top-Down FTICR MS Experiment. *J. Am. Soc. Mass Spectrom.* **2014**. 25, 2060-2068.
3. **H Li**, JR Snelling, MP Barrow, JH Scrivens, PJ Sadler, PB O'Connor. Mass Spectrometric Strategies to Improve the Identification of Pt(II)-modification Sites on Peptides and proteins. *J. Am. Soc. Mass Spectrom.* **2014**. 25, 1217-1227.
4. **H Li**, JJ Wolff, SL Van Orden, JA Loo. Native Top-Down ESI-MS of 158 kDa Protein Complex by High Resolution Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Anal. Chem.* **2014**, 86, 317-320 (**Paper On the Cover**)
5. Y Zhao, NJ Farrer, **H Li**, JS Butler, RJ McQuitty, A Habtemariam, F Wang, PJ Sadler. De novo generation of singlet oxygen and ammine ligands by photoactivation of a platinum anticancer complex. *Angew. Chem.* **2013**. 52, 1-6.
6. Y Zhao, JA Woods, NJ Farrer, KS Robinson, J Pracharova, J Kasparkova, O Novakova, **H Li**, L Salassa, AM Pizarro, GJ Clarkson, L Song, V Brabec, PJ Sadler. Diazido mixed-amine platinum(IV) anticancer complexes activatable by visible-light form novel DNA adducts. *Chem. Eur. J.* **2013**, 19, 9578-9591.
7. Y Qi, Z Liu, **H Li**, PJ Sadler, PB O'Connor. Mapping the Protein-Binding Sites for Novel Iridium(III) Anticancer Complexes Using Electron Capture Dissociation. *Rapid Commun. Mass Spectrom.* **2013**, 27, 2028-2032.

8. Y Qi, **H Li**, RH Wills, P Perez-Hurtado, X Yu, DPA Kilgour, MP Barrow, C Lin, PB O'Connor. Absorption-mode Fourier transform mass spectrometry: The effects of apodization and phasing on modified protein spectra. *J. Am. Soc. Mass Spectrom.* **2013**, 24, 828-834.
9. J Wei, **H Li**, MP Barrow, PB O'Connor. Structural Characterization of Chlorophyll a by High Resolution Tandem Mass Spectrometry. *J. Am. Soc. Mass Spectrom.* **2013**, 24, 753-760.
10. **H Li**, PB O'Connor. Electron Capture Dissociation of Disulfide, Sulfur-Selenium, and Diselenide Bound Peptides. *J. Am. Soc. Mass Spectrom.* **2012**, 23, 2001-2010.
11. **H Li**, SA Wells, JE Jimenez-Roldan, RA Römer, Y Zhao, PJ Sadler, PB O'Connor. Protein Flexibility is Key to Cisplatin Cross-linking in Calmodulin. *Prot. Sci.* **2012**, 21, 1269-1279.
12. Y Qi, MP Barrow, **H Li**, JE Meier, SL Van Orden, CJ Thompson, PB O'Connor. Absorption-mode: The Next Generation of Fourier Transform Mass Spectra. *Anal. Chem.* **2012**, 84, 2923-2929.
13. H Zhou, **H Li**, Z Zheng, F Song, J Xing, Z Liu, S Liu. Screening for  $\alpha$ -Glucosidase Inhibitors from *Coptidis-rehmanniae* Herb Couple by Using Ultrafiltration Liquid Chromatography/Mass Spectrometry. *J. Liq. Chrom. Rel. Technol.* **2012**, 35, 1-14.
14. **H Li**, TY Lin, SL Van Orden, Y Zhao, MP Barrow, AM Pizarro, Y Qi, PJ Sadler, PB O'Connor. Use of Top-down and Bottom-up Fourier Transform Ion Cyclotron Resonance Mass Spectrometry for Mapping Calmodulin Sites Modified by Platinum Anticancer Drugs. *Anal. Chem.* **2011**, 83, 9507-9515.
15. **H Li**, Y Zhao, HIA Phillips, Y Qi, TY Lin, PJ Sadler, PB O'Connor. Mass Spectrometry Evidence for Cisplatin as a Protein Cross-linking Reagent. *Anal. Chem.* **2011**, 83, 5369-5376.
16. Y Qi, MP Barrow, SL Van Orden, CJ Thompson, **H Li**, P Perez-Hurtado, PB O'Connor. Variation of the Fourier Transform Mass Spectra Phase Function with Experimental Parameters. *Anal. Chem.* **2011**, 83, 8477-8483.
17. W Liu, S Liu, **H Li**, F Song, Z Liu, S Liu. Binding of Alpha 1-acid Glycoprotein with Aconitum Alkaloids: an Investigation by IF-MALDI-FT-MS. *Rapid Commun. Mass Spectrom.* **2011**, 25, 973-978.
18. S Liu, J Yan, **H Li**, F Song, Z Liu, Z Liu, S Liu. Studies on Chemical Constituents of Compound Indigowoad Root Granule by Mass Spectrometry. *Chem. J. Chinese U.* **2010**, 31, 1137-1142.
19. **H Li**, F Song, J Xing, Z Liu, S Liu. Screening and Structures Characterization of  $\alpha$ -Glucosidase Inhibitors from Hawthorn Leaves Flavonoids Extract by Ultrafiltration LC-DAD-MS<sup>n</sup> and SORI-CID FT ICR MS. *J. Am. Soc. Mass Spectrom.* **2009**, 20, 1496-1503.
20. X Meng, **H Li**, F Song, C Liu, Z Liu, S Liu. Studies on Triterpenoids and Flavones in *Glycyrrhiza uralensis* Fisch. by HPLC-ESI-MS<sup>n</sup> and FT-ICR-MS<sup>n</sup>. *Chinese J. Chem.* **2009**, 27, 299-305.
21. **H Li**, F Song, Z Zheng, Z Liu, S Liu. Characterization of Oligosaccharides and Phenolic Acids in the Chinese Herb Tanshen by ESI-FT ICR MS. *J. Mass Spectrom.* **2008**, 43, 1545-1552.
22. H Yue, Z Pi, **H Li**, F Song, Z Liu, S Liu. Studies on the Stability of Diester-diterpenoid Alkaloids from the Genus *Aconitum* L. by High Performance Liquid Chromatography Combined with Electrospray Ionisation Tandem Mass Spectrometry (HPLC/ESI/MS<sup>n</sup>). *Phytochem. Anal.* **2008**, 19, 141-147.

23. Y Liu, Z Liu, **H Li**, F Song, S Liu. Studies on Diterpenoids Constituents from Euphorbia Kansui by Electrospray Ionization Multi-stage Tandem Mass Spectrometry. *Chem. J. Chinese U.* **2008**, 29, 1727-1735.
24. X Qiu, M Cui, **H Li**, Z Liu, S Liu. Prompt Disulfide Fragmentations of Disulfide-containing Proteins in a Matrix-Assisted Laser Desorption/ Ionization Source. *Rapid Commun. Mass Spectrom.* **2007**, 21, 3520-3525.
25. Y Zhao, F Song, H Yue, X Guo, **H Li**, Z Liu, S Liu. Deoxyaconitine of Metabolite of Aconitine by Human Intestinal Bacteria and Electrospray Ionization Tandem Mass Spectrometry. *Chem. J. Chinese U.* **2007**, 28, 2051-2055.
26. H Dong, Z Liu, F Song, Z Yu, **H Li**, S Liu. Structural Analysis of Monoterpene Glycosides Extracted from *Paeonia lactiflora* Pall. using Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry and High-performance Liquid Chromatography/ Electrospray Ionization Tandem Mass Spectrometry. *Rapid Commun. Mass Spectrom.* **2007**, 21, 3193-3199.
27. S Wang, **H Li**, Z Liu, S Liu, B Cui. Studies on the Contents of Catechin and Epicatechin in Catechu by HPLC, *Lishizhen Medicine and Materia Medica Research.* **2006**, 17, 490-491.
28. H Dong, Z Liu, F Song, Z Yu, **H Li**, S Liu. Studies on Paeoniflorin by Electrospray Ionization Tandem Mass Spectrometry. *Chem. J. Chinese U.* **2006**, 27, 2066-2069.
29. **H Li**, J Xing, Z Liu, S Liu. Analysis of Cephalosporins by Electrospray Ionization Multi-stage Tandem Mass Spectrometry. *J. Chinese Mass Spec. Soc.* **2005**, 26, 198-202.

## SELECTED PRESENTATIONS

### Oral Presentations

- **H Li**. Biological Applications of Mass Spectrometry— from Protein Modifications to Structural Biology (Invited talk). Institute of Biological Chemistry, Academia Sinica, Taipei. April 23, 2015.
- **H Li**, I Campuzano, P Schnier, JA Loo. Native Top-Down FTICR Mass Spectrometry of Soluble and Membrane Protein Complexes. Pittcon. New Orleans, LA, Mar. 8-12, 2015
- **H Li**, YW Sheng, JS Valentine, JA Loo. Approaches to Improve Native Top-Down MS Fragmentation Efficiency of Protein Complexes. Conference on Ion Chemistry and Mass Spectrometry. Lake Arrowhead, CA, Jan 16-18, 2015.
- **H Li**, J Wolff, SL Van Orden, ID Campuzano, Piriya Wongkongkathap, RRO Loo, JA Loo. Probing the Structures of Protein Complexes up to 800 kDa by Native Top-Down Tandem Mass Spectrometry with FT-ICR. 62 ASMS Conference on Mass Spectrometry and Allied Topics. Baltimore, ML, June 15-19, 2014.
- **H Li**, PB O'Connor. Electron Capture Dissociation of Disulfide, Sulfur-Selenium, and Diselenide Bound Peptides. Lake Louise Tandem Mass Spectrometry Workshop, Lake Louise, Alberta, Canada. Nov. 28 – Dec. 1, 2012.
- **H Li**, SA Wells, JE Jimenez-Roldan, RA Römer, Y Zhao, PJ Sadler, PB O'Connor. Protein Flexibility is Key to Cisplatin Cross-linking in Calmodulin. 10<sup>th</sup> European FTMS Conference, Warwick, UK, April 1-5, 2012.

- **H Li**, F Song, Z Liu, S Liu. Characterization of Oligosaccharides and Phenolic Acids in the Chinese Herb Tanshen by ESI-FT ICR MS. The 12<sup>th</sup> International Beijing Conference and Exhibition on Instrumental Analysis (12<sup>th</sup> BCEIA). Oct. 18 ~ 21, 2007

#### Poster Presentations

- **H Li**, JA Loo. Improving Top-Down MS Fragmentation Efficiency of Intact Proteins Using His-Tags and Electron Ionization Dissociation. 12th UppCon Conference on Electron Capture and Transfer Dissociation, Lake Arrowhead, LA, March 22 ~ 25, 2015.
- **H Li**, P Wongkongkathep, RRO Loo, JA Loo. Revealing Ligand Binding Sites and Quantifying Subunit Variants of Non-Covalent Bound Protein Complexes in a Single Native Top-Down FTICR MS Experiment. 11th UppCon Conference on Electron Capture and Transfer Dissociation, Austria, March 30 ~ April 2, 2014.
- **H Li**, JA Loo. Structural Characterization of Native Protein Assemblies by Top-Down Mass Spectrometry. 27<sup>th</sup> Annual Symposium of the Protein Science Society. Boston, MA, July 20-23, 2013.
- **H Li**, JR Snelling, MP Barrow, JH Scrivens, PJ Sadler, PB O'Connor. Mass Spectrometric Strategies to Improve the Identification of Pt(II)-modification Sites on Peptides and proteins. 61<sup>st</sup> ASMS Conference on Mass Spectrometry and Allied Topics. Minneapolis, MN, June 9-13, 2013.
- **H Li**, SA Wells, JE Jimenez-Roldan, RA Römer, Y Zhao, PJ Sadler, PB O'Connor. Protein Flexibility is Key to Cisplatin Cross-linking in Calmodulin. 19<sup>th</sup> International Mass Spectrometry Conference, Kyoto, Japan, Sep. 15-21, 2012.
- **H Li**, TY Lin, SL Van Orden, Y Zhao, AM Pizarro, PJ Sadler, PB O'Connor. Mapping the Binding Sites of Platinum Anticancer Drug-Cisplatin to Calmodulin. 32<sup>nd</sup> BMSS Conference, Cardiff, UK, Sep. 11-14, 2011.
- **H Li**, TY Lin, AM Pizarro, PJ Sadler, PB O'Connor. Mapping the binding Sites of Platinum Anticancer drugs to Calmodulin. 59<sup>th</sup> ASMS Conference on Mass Spectrometry and Allied Topics. Denver, CO, June 5-9, 2011.
- **H Li**, Y Zhao, HIA Phillips, Y Qi, PJ Sadler, PB O'Connor. Mass spectrometry evidence for cisplatin as a cross-linking reagent. 8<sup>th</sup> UppCon Conference on Electron Capture and Transfer Dissociation. Villars-sur-Ollon, Switzerland, Feb. 6-10, 2011
- **H Li**, J Xing, F Song, Z Liu, S Liu. Fragmentation pathways of Tanshinones by ESI-FT-ICR-MS. The 11<sup>th</sup> International Beijing Conference and Exhibition on Instrumental Analysis (11<sup>th</sup> BCEIA). Oct. 20-23, 2005.

## REFEREES

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