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**Qinyong Mao**

**Qualifications Summary**

• Demonstrated capability in design and synthesis of a variety of organic substrates including carbohydrate and asymmetric bicyclic natural products in multi-step organic synthesis

• Expertise in isolation of organic compounds by typical purification techniques

-such as Kruger distillation, flush column chromatography and recrystallization

• Expertise in structural characterization of organic compounds by NMR, IR, HPLC, LC-MS, GC-MS, Mass spectrometry

• Familiar with the use of a variety of advanced instruments such as NMR, HPLC, LC-MS, GC-MS, UV-Vis and fluorescence spectroscopy

• Demonstrated capability in supervising new research students in organic and analytical chemistry

• Strong computing manipulating skills

-a variety of software programs such as Microsoft Office Suite, ChemDraw, Scifinder and Endnote

**Chemistry experience**

**PhD** (School of Agriculture, Food and Wine, The University of Adelaide, 2010-2015)

Thesis Title: The synthesis and antioxidant activity of a range of resveratrol and related phenolic glucosides

Major achievements:

• Synthesized more than 100 resveratrol analogues including resveratrol glycosides, piceatannol glycosides, resveratrol oligomers and the intermediates of these compounds

• Purified all the targeted compounds by flush column chromatography and recrystallization.

• Successfully characterized the structure of some new stilbene analogues by the use of NMR, HPLV and LC-HRMS

• Synthesized several deuterated labeled resveratrol glycosides and 13C labeled piceatannol glycosides as internal standards for wine analysis

• Tested the antioxidant activity of all synthesized resveratrol analogues by FRAP and DPPH assays

• Developed the HPLC and LC-MS methods for the identification and quantification of a range of resveratrol analogues

• Published 4 scientific articles

**Research assistant** (School of Agriculture, Food and Wine, The University of Adelaide, 2008-2013)

Responsibilities:

Synthesize some desired peptides for a pharmaceutical company, Synthesize some standards for wine chemistry research; operating analytical instruments such as GC, HPLC, LC-MS, UV/VIS, NMR, microwave, and fluorescence spectroscopy; testing physical and chemical characteristics of synthesized products; interpreting data, writing scientific reports and making presentation, provide research strategies and technical supports for new PhD/Honor students, manage lab issues such as regular safety check, instruments maintenance, lab cleaning, chemical ordering and waste disposal

Major achievements in synthetic chemistry:

• Designed and synthesized several bioactive amides for a pharmaceutical company (Symrise)

• Designed and synthesized 10 wine alcoholic and phenolic glycosides for wine analysis

• Designed a multi-step synthetic strategy for the total synthesis of a malvidin-grape reaction product conjugate and synthesized several important intermediates for this compound

• Optimized the reaction condition for the Pd-catalyzed coupling reactions for the synthesis of stilbenes

• Supervised a PhD student to complete a 6-step synthesis of catechin glycosides as standards for wine analysis

• Supervised a PhD student to complete the synthesis of 6 desired peroxides for bioactivity study in plants

**Master by research** (School of chemistry, University of Wollongong, 06/2006-11/2007)

Major achievements:

• Optimized the reaction condition of boronic acids with *N-*acyliminium ions

• Synthesized several important intermediates for the synthesis of pyrrolidonones

• Characterized the synthesized products by NMR and Mass spectroscopy.

**Teaching experience**

**Chemistry demonstrator (03/2009-03/2010)**

The University of Adelaide, School of Chemistry & Physics

Responsibilities:

• Supervising first & second-year university students to complete laboratory work

• Organizing group meeting for students and providing solutions with regards to study difficulties

• Answering students’ questions relating to classwork and marking assignments

• Providing feedback from students to lectures/ coordinator

**Other experience**

**Receiving officer (**School of Physics & Chemistry, The University of Adelaide, 08/2013-12/2013, part time)

Responsibilities: stock taking, update manifest, order chemicals and general consuming for chemistry labs, manage waste disposal, customer services.

**Education**

PhD, Wine Chemistry

The University of Adelaide (2010-2015)

Master of Science, Chemistry (by research)

Wollongong University (02/2006-07/2007)

Master of Science, Chemistry (by coursework)

Wollongong University (02/2005-02/2006)

Bachelor of Science, Chemistry

Zhejiang Normal University (07/1999-07/2003)

**Publication, Presentation and Poster**

The synthesis of a range of piceatannol glycosides and their antioxidant activity study. Mao, Q., Skouroumounis, G., Taylor, D. K. *Natural products*. 2015. *In Press.*

The Synthesis of glycosylated resveratrol analogues and the role of their antioxidant activity in the “French Paradox”. Mao, Q., Skouroumounis, G., Taylor, D. K. *Natural products*. 2015. *In Press.*

Fragmentation Patterns of Monomeric and Oligomeric Wine Stilbenoids by UHPLC-ESI-QTOFMS. Moss, R.; Mao, Q.; Taylor, D.; Saucier, C. *Rapid Communications in Mass Spectrometry*, 2013, 27, 1815-1827.

Pallidol hexaacetate ethyl acetate monosolvate. Mao, Q.; Taylor, D. K.; Ng, S. W.; Tiekink, E. R. T. *Acta Crystallographica Section E*, 2013, E69, 1155-1156.

Resveratrol, the “French Paradox” and wine, Grape and Wine Research and Development Corporation, Adelaide, 09/2012.

Reveratrol analogues in red wine and the “French Paradox”, The Australian Wine Industry Technical Conference and Trade Exhibition (AWITC & TE), Sydney, 07/2013.

**Computing skills**

Scifinder, ChemAxon, Chemdraw, ISIS Base

Microsoft Office Suite: Advanced skills ( Excel, Word, Access, PowerPoint, Adobe Acrobat)

**Languages**

Fluent English

Native Chinese

**Referees**

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