Mingding Wang

3062 Pheasant Run Drive Apt.1012, Lafayette, IN 47909 • 765-637-5419 • wang1958@purdue.edu

Objective

Seeking a scientist position that provides me with opportunities to find innovative solutions to challenging problems in pharmaceutical industry.

Highlights

* Five years of experience in the use, maintenance, method development, and assay validation of HPLC, UHPLC, LC/MS, and CombiFlash chromatography system
* Extensive experience in NMR, MS, UV-Vis, and IR spectroscopy
* Strong background in synthetic organic chemistry, analytical organic chemistry, and solid phase peptide synthesis (SPPS)
* Strong leadership, teamwork, interpersonal, and English communication skills, proven with two distinguished teaching awards
* Overseen CombiFlash use for four years in graduate research group: responsible for new user training/authorization, maintenance and troubleshooting, method development, etc.
* Five years of experience as radiochemistry representative in graduate research lab: responsible for radioactivity user training/authorization, radioactive isotope inventory keeping, radioactivity lab maintenance, coordination with REM and NRC, etc.
* Unique multidisciplinary background, with deep knowledge/practical experiences in both chemistry and biology
* Strong problem-solving skills and excellent time management/organization skills

Education & Research Experience

**Ph.D., Chemical Biology (Expected graduation: Dec. 2018) 2013 Aug-present**

Research Advisor: Dr. Philip S. Low

***Purdue University****, West Lafayette, IN*

* Developed a bone-homing conjugate featuring releasable Dasatinib as the therapeutic warhead with impressive capabilities of facilitating bone fracture repair
* Synthesized, purified and tested six small-molecule bone-anabolic agents with *in vivo* and *in vitro* models, including GSK3β inhibitors, 15-PGDH inhibitors, and Src kinase inhibitors
* Shortened a published 14-step synthetic route for a bombesin receptor subtype-3 agonist to 7 steps; synthesized 4 fluorescein/rhodamine conjugates with this agonist for *in vitro* assays
* Developed a facile and convergent synthetic pathway that was easily transferrable to synthesize conjugates of different releasable small molecular bone-anabolic agents
* Tested five bone-homing conjugates with small-molecule bone-anabolic payloads with an *in vivo* fracture model on Swiss Webster mice
* Established and validated a new approach of quantifying near-infrared dye deposition in bone

**B.S., Chemical Biology 2009 Aug-2013 Jul**

Research Advisor: Dr. Yen Wei

***Tsinghua University,*** *Beijing, China*

* Immobilized lipase in mesoporous silica network with sol-gel process; achieved enhanced stress tolerance without noticeable loss in enzyme activity
* Established a simple and reliable assay for the activity of free and immobilized lipase, using an emulsified substrate system made with commercial-grade olive oil and polyvinyl alcohol
* Assayed the activity of the immobilized lipase in various optimal and non-optimal environments
* Characterized the encapsulation efficiency of the immobilized lipase in mesoporous silica using thermogravimetric analysis
* Characterized the specific surface area and porosity the immobilized lipase in mesoporous silica using Micromeritics Accelerated Surface Area and Porosimetry System

Skills & Expertise

Chemistry

* Extensive experience in the synthesis, purification and characterization of small-molecule drugs; proficient in the analysis and interpretation of HPLC chromatograms and NMR spectra
* Expertise with Fmoc solid phase peptide synthesis (SPPS) with 2-chlorotrityl chloride resin and Wang resin
* Five years of experience in the use, maintenance, troubleshooting, and method development of Agilent 1200 series HPLC, Agilent 1220/6130 LC/MS, Thermo UltiMate 3000 UHPLC, Teledyne CombiFlash Rf+ Lumen, and Bruker AV500 NMR (only use)

Biology

* Five years of experience in mammalian cell culture and the maintenance of cell culture facility; expertise with the following cell lines: MC3T3-E1, MDA-MB-231, A549, HEK-293, CHO-K1, KB, Hela
* Experienced in total protein extraction, total RNA extraction, PCR, real-time PCR, flow cytometry, confocal microscopy, micro-CT scanning, and *in vivo* live animal imaging with near-infrared dye
* Extensive experience in rodent handling, anesthesia, surgery, euthanasia and dissection

Operating Systems & Software

* macOS 10.8 or later: installation and configuration
* Windows 7/10: installation and configuration
* Utility tools: ChemDraw, MestReNova, SciFinder, Thermo Chromeleon, GraphPad Prism, Amiview, FlowJo, Bio-Rad CFX Maetro, ImageJ (and BoneJ plugin)

Honors & Awards

**Purdue University Research Assistant Scholarship**  **2014 May – present**

**Purdue University Teaching Academy Graduate Teaching Award**

**2015 Apr**

A highly competitive award honored to outstanding graduate teaching assistants from the entire university

**William F. Epple Chemistry Teaching Award, Purdue University** **2015 Apr**

A highly competitive award honored to outstanding graduate teaching assistants in chemistry

**Ross Fellowship, Purdue University**  **2013 Aug**

A highly competitive scholarship honored to outstanding first year chemistry graduate student

Publications & Manuscripts in Preparation

* **M. Wang,** S. Park, Y. Nam, J. Nielsen, M. Srinivasarao, S. A. Low, P. S. Low. “Bone fracture-targeted dasatinib conjugate potently enhances fracture repair *in vivo*”. *J.Bone Miner. Res. Submitted.*

Patents

* **Wang, M.**, Low, SA., Nielsen, J., Low, PS. “Targeting Anabolics for Accelerated Fracture Repair”, *U.S. Application No. 62/678,016.* 2018*.*

Teaching Experience

**Chemistry Department, Purdue University, West Lafayette, IN 2013-2015**

Responsible for teaching general chemistry and organic chemistry (CHM 11600, 25701 and 26300) to undergraduate students through instructions in laboratory and recitation sections.

* CHM 25701 Lab Teaching Assistant (Fall 2013)
* CHM 11600 Lab/Recitation Teaching Assistant (Spring 2014)
* CHM 26300 Lab Teaching Assistant (Fall 2015)