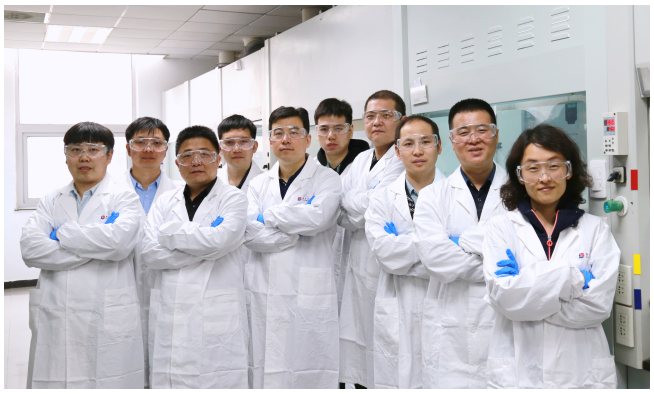
康龙化成 PHARMARON 5



Meet Our Discovery Process Chemistry Team

Located in the A wing of Building 2 at Pharmaron's Beijing Campus, you'll find our Discovery Process Chemistry (DPC) team. On any given day you may find Dr. Yawei Dong handling a challenging nitration reaction, Lei Bian running a decarboxylative cross-coupling or Wensong Xiao setting up 24 catalyst screening reactions to determine efficient conditions for his C-N coupling.

DPC supports programs from late stage lead optimization through preclinical development. This service area provides a bridge between medicinal chemistry and process chemistry, facilitating candidate selection, as it allows these chemists to work more effectively and efficiently. The DPC team are the superheroes that allow programs to get ahead of schedule.

So, what are their super powers? Medicinal chemists appreciate their ability to quickly scale-up lead candidate compounds to support animal studies. Process chemists value the DPC team's efficient route scouting, validation and optimization before scale-up, which enables manufacturing of larger kilo-scale quantities of API more quickly. What adds to their super power appeal is their eagerness to take on a challenge and be successful. And they have the track record to prove it, with a 99% on-time delivery rate.

The team attributes its success to these key factors: a focus on using new and innovative technology, creative problem solving, a persistent mindset and a commitment to find a solution. Ongoing training sessions help support this drive. Most recently offered was an in-house two-day course on photoredox chemistry, lead by Prof. David MacMillan (Princeton University), Prof. Corey Stephenson (University of Michigan) and Prof. Tehshik Yoon (University of Wisconsin–Madison). The takeaway was an appreciation for the power of photocatalysis in new reactions design and their applications.

Twice a year the DPC team convenes for their "heroes of chemistry" awards, during which colleagues are given recognition for their super efforts. Pharmaron's partners also present their own awards to recognize innovation, chemistry excellence and outstanding chemistry support.

DPC prides itself on accepting—and solving—any challenge presented. Confidence, innovation, and dedication are their key characteristics. "We dare to say that nothing is impossible!" said Donghong (Danny) Li, Executive Director, Chemistry.

About the Discovery Process Chemistry Team
Pharmaron's Discovery Process Chemistry (DPC) services are a key driving factor to helping our partners accelerate their timelines to get quality target compounds faster. DPC expedites the process by providing time-saving synthesis for work done by medicinal chemistry, process chemistry and toxicology. This is achieved by optimizing the scale-up of intermediates for medicinal chemistry, validating routes and performing early process development to support future larger scale manufacturing, and synthesizing final targets to enable animal toxicology and early clinical studies.

Sample Patent and Publications:

- Patent: Process for Making Tetracyclic Heterocycle Compounds, International Publication Date: January 14, 2016
- New method development: Development of a General Protocol to Prepare 2H−1,3-Benzoxazine, Organic Process Research & Development, **2017**, 21, 1547-1556.
- Labelled route development: Synthesis of [$^{2}H_{6}$] ceftazidime as a stable isotopically labeled internal standard, Journal of Labelled Compounds and Radiopharmaceuticals, **2015**, 58, 313-316.

2 Pharmaron IPO Announced

There are many exciting milestones that Pharmaron has achieved since it began operations in 2004, but none compare to the company's initial public offering (IPO). On January 28, our leaders gathered at the Shenzhen Stock Exchange building for the listing ceremony.

Dr. Boliang Lou, Chairman and CEO, and Mr. Larry Lou, President and COO, had the honor of ringing the opening bell, which signified the successful launch of Pharmaron in the Chinese capital market (Stock Code: 300759.SZ).

Our team, donned in red scarves as part of the Shenzhen Stock Exchange opening bell ceremony, were able to witness an important day in Pharmaron history.

"Thanks to our team for their dedication! Thanks to our partners for their tremendous support! Thanks to the investment community for their great confidence!" said Dr. Boliang Lou, CEO & Chairman, Pharmaron. "This is a wonderful day for Pharmaron. This IPO gets us one step closer to realizing our company vision, which is to become the world-leading small-molecule life science R&D service company."

3 Serving Our Partners

Pharmaron is proud to partner with organizations who are shaping the future of the healthcare industry. For every project we successfully complete, we know it helps our partners move one step closer to their goal. These goals impact millions of people, as it means new life-saving medicines are discovered.

On April 1, IFM Therapeutics announced a deal where Novartis acquires their subsidiary, IFM Tre's portfolio of NLPR3 antagonists, which consists of one clinical and two pre-clinical programs.

IFM has been a partner with Pharmaron since 2015, and during this period our teams have had the privilege of providing a broad range of services which includes medicinal & process chemistry, DMPK, *in vitro* biology and GMP manufacturing.

4 Reaction of the Day

If you are at one of Pharmaron's facilities around the world, chances are you'll see a monitor showcasing the Reaction of the Day, which highlights a different chemistry reaction and its synthetic applications each day. It's a unique way for our colleagues and visitors to review new chemistry from recent publications.

Our chemists have the opportunity to nominate reactions that inspire them or have proven especially impactful in accessing final compounds. A committee, including new Pharmaron Ph.D. chemists and our chemistry leaders, determines which reactions get posted. Selection criteria include chemistry that is green and safe, as well as practical synthetic methods that are useful to our chemists in their daily research.

5 Chemistry for Life Science Symposium

On March 1, Pharmaron held its second symposium, Chemistry for Life Science, at the Hoddesdon (UK) facility. Six world-class speakers from academia and industry presented updates in drug discovery and synthetic chemistry.

Innovation is a key driver for Pharmaron's business growth. This symposium is one of many learning opportunities offered to update our team and partners on new research, as well as to exchange novel ideas and stimulate creative thinking.

In addition, ten students from UK universities were selected to display their research in a poster competition held during breaks. Posters were reviewed for novelty of the chemistry and quantity of work. The winning poster was by Xiangyu Zhang, from University College of London. His poster research title is "Total Synthesis of (+) Vallesamidine and Progress on (+) Strempeliopine."

Symposium Speakers:

- Dr. Roland Bürli, AstraZeneca, *UK*
  In Search of New Functions of Arsenic Methyl Transferase
- Prof. Alois Fürstner, Max-Planck-Institut für Kohlenforschung, *Germany*
  Catalysis in Total Synthesis
- Dr. Tom Heightman, Astex Therapeutics, *UK*
  Fragment Based Drug Discovery for Challenging Targets
- Dr. Emma Parmee, MSD, *USA*
  New Directions in Drug Discovery at MSD: Expanding Exploration of Chemical Space
- Prof. Samir Zard, Ecole Polytechnique, *France*
  Radicals in Action: New Perspectives for Organic Synthesis and Medicinal Chemistry
- Prof. Yong-Gui Zhou, Dalian Institute of Chemical Physics, *China*
  Asymmetric Hydrogenation of Heteroaromatics