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## Meet Dr. Paolo DePetrillo

There is a plant called belladonna that has intrigued Dr. Paolo DePetrillo since he was a young child. He recalls seeing this plant as he romped through his grandmother's garden near Rome and he still remembers the constant reminders to never eat its berries. Dating back to Roman times, belladonna's leaves and roots were found to have medicinal and cosmetic powers. Learning about this powerful plant at an early age is one of the reasons why Dr. DePetrillo became interested in medicine—and gardening.

Dr. Paolo DePetrillo, known as "Dr. De," is Pharmaron's Medical Director at the Clinical Pharmacology Center (CPC) in Baltimore, Maryland. With 30 years' experience in clinical and laboratory research, Dr. De credits his professors, Dr. Paul Calabresi and Dr. Darrell Abernethy, at Brown University for introducing him to clinical pharmacology. Dr. De liked the fact that it combined many skill sets, such as drug discovery and development with medicine, and allowed him to interact directly with patients and laboratory sciences.

At Pharmaron's CPC, Dr. De is always making the rounds. Any given day he may be meeting with the executive team to develop and implement policies, performing physical exams on study participants or assisting sponsors with protocol development and study design to ensure safety and efficiency. Each of these areas tap into his top goals, which are to ensure patient safety and data integrity.

As Medical Director at the CPC, Dr. De has overseen dozens of studies. He likes the fact that each study is unique and presents its own set of challenges. He recalls a recent COPD inhaler study where he discovered it was necessary to segregate participants, to prevent the mist from the inhaler cross-contaminating other participants in the study. Also, in a recent Thorough QT (TQT) study to assess cardiac safety, it was quickly determined that study participants should be preemptively treated with a medication to avoid gastrointestinal issues which may have confounded TQT results. Once this issue was identified, the clinical protocol was rapidly amended to ensure its successful outcome.

Currently, Dr. De, a radiation-authorized technician, is excited to be working with Pharmaron's radiolabelling sciences team on integrated clinical metabolism studies involving the use of the carbon-14 radioisotope-based microtracers. This is a new service area provided by Pharmaron with six human ADME studies slated to run at CPC by the end of the year. These novel approaches employ ultra-low doses of radioactivity administered to human volunteers (1 µCi vs. 100-200 µCi for traditional study designs) and are enabled by the use of Accelerator Mass Spectrometry (AMS) as the analytical platform.

Whether he is meeting with a patient/participant, partner or colleague, Dr. De enjoys each and every interaction. He knows these communications are key to building the trust and confidence within the team and our partners. He also attributes much of this success to the efforts of the team of three sub-investigators, whom he recruited and trained.

About Dr. Paolo DePetrillo
Dr. Paolo DePetrillo is Medical Director at Pharmaron's Clinical Pharmacology Center in Baltimore, Maryland. He joined Pharmaron when the company acquired the majority stake in SNBL CPC in February 2017. Dr. DePetrillo joined SNBL CPC as Medical Director in July 2013. Prior to this, he was a Senior Research Investigator at the NIH, founding partner of Applied Pharmacogenomics, LLC and an Assistant Professor of Medicine at Brown University. He obtained his M.D. from Brown University and received board certifications in internal medicine and clinical pharmacology. He was a recipient of the Pfizer Clinical Pharmacology Fellowship Award. In his spare time, he enjoys growing herbs, such as thyme, basil, and garlic, which go well with his Italian recipes. And yes, he has belladonna in his garden, too. Dr. De still loves this plant, but now it's because the deer do not like it, so they stay away from his herb garden.

## 2 Thorough QT Success Story

A critical element of clinical research is the planning and execution of a Thorough QT (TQT) clinical study design, which is a requirement for regulatory approvals of New Drug Applications (NDAs) in many markets. Under the leadership of Dr. DePetrillo as Medical Director and Principal Investigator, Pharmaron's study team provides services that offer our partners assurances that the serial ECG data collected on their TQT study will lead to precise data analysis and a conclusive study result.

This was recently demonstrated on a completed TQT study for Zavante Therapeutics, a San Diego-based biopharmaceutical company, where our team delivered high quality ECG data leading to remarkably low variance in data analysis, and thereby assuring our client that the results from the study were complete and accurate. According to David Skarinsky, Vice President Operations at Zavante Therapeutics, "Pharmaron provided Zavante the expertise of a highly qualified operations team with deep knowledge to design, recruit, conduct and analyze ECG and pharmacokinetic data in order to deliver an exposure-response QT analysis of drug effect. A true extension of the Zavante team, Pharmaron delivered a critical path study on-time and on-budget."

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## 3 New Strategic Partnership with CR Medicon

On May 18, Pharmaron signed an investment and strategic partnership agreement with CR Medicon, a clinical CRO based in Nanjing, China that accelerates the establishment of a world-class clinical CRO platform and strengthens Pharmaron's clinical development service capabilities.

This partnership with CR Medicon allows Pharmaron to provide clinical services in China and closely liaise with our clinical research center in the USA. This global clinical network, CR Medicon in China and Pharmaron's Clinical Pharmacology Center in the USA, enables Pharmaron to strengthen its clinical research services to accelerate the global clinical development process for our partners.

CR Medicon's major business includes regulatory affairs, medical affairs, clinical operation, clinical data management and biostatistics and bioanalysis of clinical samples to support the needs from clinical trial phases I-III/IV and BE.

This partnership expands Pharmaron's fully integrated drug discovery and development service platform and allows us to further support our partners' success in discovery, development and commercialization of innovative medicines.

## 4 Focus on Science & Innovation

Pharmaron's commitment to excellence in science stems from our labs and research teams and is sustained through opportunities we see in academia and industry to share key insights.

In April, Pharmaron sponsored a lectureship at the SCI Process Development conference in Cambridge, UK. The lectureship's goal is to give visibility to a key academic from China to showcase new research in synthetic organic chemistry. This supports Pharmaron's commitment to chemistry as an enabling science for biomedical research. In a well received lecture, Professor Shuli You from the Shanghai Institute of Organic Chemistry (SIOC) presented "Catalytic Asymmetric Dearomatization (CADA) Reactions" and disclosed recent developments from his group in this area.

In May, Pharmaron co-organized a chemistry innovation workshop with Merck, Sharpe and Dohme (MSD) and SIOC, aiming to facilitate close interaction between academia and industry and promote innovation. Key representatives from MSD presented chemistry technologies that enable new advantages in drug discovery and development, exemplified by high throughput experimentation and innovative chemistry to facilitate the drug discovery process and process chemistry. Speakers from SIOC focused on new synthesis methodologies including asymmetric C-H oxidation, difluoroalkylation and biosynthesis of templated natural products, gaining further understanding of the effect of specific atoms on novel chemical and biochemical reactions, which potentially could be utilized to accelerate the drug discovery and development process.

Recently members of Pharmaron's team presented at DIA China in Beijing (Strategies and Technologies in Early Clinical Drug Development to Maximize Program Outcomes), ISSX in Montreal (Radiolabelled ADME Studies of Large Molecules: What are the options?) and ASCPT in Florida (AMS… Not Just for Drugs Anymore).

## 5 Human Metabolism Studies

Pharmaron offers integrated clinical metabolism studies to assist our partners with a complete metabolism strategy to fast-track drug development and regulatory approvals.

Pharmaron is unique in being able to conduct human studies with ultra-low doses of radioactivity by taking advantage of our Accelerator Mass Spectrometry (AMS) platform for the analysis of carbon-14 ($^{14}C$) microtracers. Integrated clinical metabolism services include designing and executing clinical protocols, manufacturing and/or repurifying clinical grade $^{14}C$ material, formulation and preparation of $^{14}C$ drug product, AMS and/or LSC analysis of clinical samples, LC/MS/MS based bioanalysis, metabolite profiling/ID and DDI.

Pharmaron's facilities in Maryland, USA (Clinical Pharmacology Center/CPC and Advanced Bioanalytical Sciences/ABS) and Rushden, UK (clinical metabolism lab) work closely together to conduct integrated radiolabelled human clinical metabolism studies with $^{14}C$. These essential clinical programs assess the metabolism, excretion and pharmacokinetics of our partners' drug candidates and are necessary to advance the development and marketing approval of novel therapeutics.