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PharmaCyte Biotech Updates Status of Investigational New Drug Application to FDA

LAS VEGAS--(BUSINESS WIRE)-- PharmaCyte Biotech, Inc. (NASDAQ: PMCB), a biotechnology company focused on developing cellular therapies for cancer and diabetes using its signature live-cell encapsulation technology, Cell-in-a-Box®, today provided an update on PharmaCyte's activities to lift the U.S. Food and Drug Administration's (FDA) clinical hold on PharmaCyte's treatment for locally advanced, inoperable pancreatic cancer (LAPC). After submission of an initial Investigational New Drug Application (IND), the FDA requested additional studies and information as a prerequisite for approval of PharmaCyte's IND. A number of additional studies and assays have already been completed; several others are quite lengthy and are underway or are slated to begin soon. As each study and assay is completed, the results are being compiled and will make up PharmaCyte's complete IND submission package to the FDA.

PharmaCyte's Chief Executive Officer, Kenneth L. Waggoner, explained, "Given our treatment is a biologic and our technology is a one of a kind live-cell encapsulation, we completely understand the FDA's need for more information. We are confident that with the data we're producing in our additional studies and assays that the FDA will grant us an open IND just as the FDA granted us the Orphan Drug Designation for our treatment for LAPC.

"Last June, we provided an update on efforts being made by our team of regulatory and scientific experts that are addressing the FDA's requirements to have the clinical hold lifted. Today, we would like to update that list and explain where we are in the process of delivering our updated IND package to the FDA. We have brought additional regulatory and scientific experts onboard the team, and we continue to engage closely with leading Contract Research Organizations (CROs) and our partner Austrianova to ensure a successful IND submission.

"We also want to make it clear that PharmaCyte and its service providers are under the same constraints as everyone else globally with supply chain issues, Covid related delays, and late delivery of materials that are needed to complete studies and assays required by the FDA. This also applies to the manufacturing of empty capsules and encapsulated live cells that are necessary to complete many of these required studies and assays. Moreover, many of the laboratories that are conducting our studies and assays are being met with long delays in receiving the consumables needed to conduct the specific studies for which they are responsible. So, we're at the mercy of what is a global problem, which obviously makes it more difficult to offer any accurate timelines for completion of the FDA required assays and studies."

Below is the list of items on which PharmaCyte has been working, including updates on those tests previously reported.

- **Additional Regulatory Expertise Added to IND Team -** In addition to its established team of experts, PharmaCyte has retained Biologics Consulting as a fresh set of regulatory eyes to perform a regulatory "Gap Analysis" and to assist with PharmaCyte's IND submission. Biologics Consulting is a full-service regulatory and product development consulting firm for biologics, pharmaceuticals and medical devices and has personnel with extensive FDA experience. Although it took a lengthy amount of time to onboard Biologics Consulting, this should augment PharmaCyte's ability to submit an acceptable IND to the FDA.

- **Stability Studies on PharmaCyte's Clinical Trial Product -** PharmaCyte has now successfully completed a product stability study after 3, 6, 9, 12 and 18-months of storage frozen at -80C on PharmaCyte's clinical trial product known as CypCaps™, including container closure integrity testing for certain timepoints. The next time point in this ongoing stability study will be at 24 months of product stability of the CypCaps. This 24-month time point analysis is ready to commence, and data will be available in the coming weeks.

- **Additional Studies Requested by the FDA -** PharmaCyte has designed and commenced various additional studies requested by the FDA, including a stability study on the cells from its Master Cell Bank (MCB) used to make the CypCaps. PharmaCyte is already at the 3-year stability timepoint for the cells from its MCB.

- **Determination of the Exact Sequence of the Cytochrome P450 2B1 Gene -** PharmaCyte has completed the determination of the exact sequence of the cytochrome P450 2B1 gene inserted at the site previously identified on chromosome 9 using state-of-the-art nanopore sequencing, a cutting edge, unique and scalable technology that permits real-time analysis of long DNA fragments. The result of this analysis of the sequence data confirmed that the genes are intact.

- **Biocompatibility Studies –** PharmaCyte has designed and commenced 8 biocompatibility studies, 6 of which have been completed successfully. The remaining 2 studies are underway. Those studies are the Acute Systemic Toxicity Study of Empty Cellulose Sulphate Capsules in Mice and the Skin Sensitization Study of Empty Cellulose Sulphate Capsules in Guinea Pigs. To enable these studies to be performed, Austrianova manufactured and delivered an additional 400 syringes of empty capsules. Some of the data being generated will also be used to demonstrate comparability with the CypCaps successfully used in two earlier clinical trials for pancreatic cancer.

- **Micro-Compression and Swelling Assays** - This project is underway. The project is developing and optimizing two reproducible methods for testing and confirming the physical stability and integrity of the CypCaps produced under GMP. These studies required the acquisition of new equipment by Austrianova as well as validation and integration into Austrianova's Quality Control laboratory.

- **Break Force and Glide Testing** - PharmaCyte is in the process of developing a protocol to measure whether the syringe, attached to the catheter when used to expel the capsules, will still have a break and glide force that is within the specification that PharmaCyte has established. PharmaCyte will set this specification based on the syringe/plunger manufacturer's measured break and glide forces, or alternatively, accepted ranges for glide forces routinely used in the clinic.

- **CypCaps Capsules Compatibility with the Syringe and Other Components of the Microcatheter Delivery System -** PharmaCyte has commenced studies designed to show that CypCaps are not in any way adversely affected by the catheters used by interventional radiologists to deliver them into a patient. Compatibility data is being generated to demonstrate that the quality of the CypCaps is maintained after passage through the planned microcatheter systems.

- **CypCaps Capsules and Cell Viability after Exposure to Radiological Contrast Medium -** PharmaCyte has designed and commenced a project to test the effect of the exposure of CypCaps to two routinely used types of contrast medium that interventional radiologists use to implant the CypCaps in a patient. The contrast medium is used to visualize the blood vessels during implantation of the CypCaps.

- **Master Drug File Information**- Austrianova is providing additional detailed confidential information to the FDA on the manufacturing process, including information on the improvements and advancements made to the product since the last clinical trials were conducted with respect to reproducibility and safety. However, Austrianova has not changed the overall physical characteristics of the CypCaps. PharmaCyte is supporting Austrianova financially in this work.

- **Additional Documentation Requested by the FDA -**PharmaCyte is in the process of updating its documentation including extending its discussion on immunological aspects of its LAPC treatment.

- **Pig Study -** Finally, the Company has designed a study in pigs to address biocompatibility and long-term implantation and dispersion of the CypCaps. This animal study will complement the positive data already available from the previous human clinical trials showing the safety of CypCaps implantation in human patients.

About PharmaCyte Biotech

PharmaCyte Biotech, Inc. is a biotechnology company developing cellular therapies for cancer and diabetes based upon a proprietary cellulose-based live cell encapsulation technology known as “Cell-in-a-Box®.” This technology is being used as a platform upon which therapies for several types of cancer and diabetes are being developed.

PharmaCyte’s therapy for cancer involves encapsulating genetically engineered human cells that convert an inactive chemotherapy drug into its active or “cancer-killing” form. For pancreatic cancer, these encapsulated cells are implanted in the blood supply to the patient’s tumor as close as possible to the site of the tumor. Once implanted, a chemotherapy drug that is normally activated in the liver (ifosfamide) is given intravenously at one-third the normal dose. The ifosfamide is carried by the circulatory system to where the encapsulated cells have been implanted. When the ifosfamide flows through pores in the capsules, the live cells inside act as a “bio-artificial liver” and activate the chemotherapy drug at the site of the cancer. This “targeted chemotherapy” has proven effective and safe to use in past clinical trials and we believe results in little to no treatment related side effects.

PharmaCyte’s therapy for Type 1 diabetes and insulin-dependent Type 2 diabetes involves encapsulating a human cell line that has been genetically engineered to produce and release insulin in response to the levels of blood sugar in the human body. The encapsulation of the

cell line will be done using the Cell-in-a-Box technology. Once the encapsulated cells are implanted in a diabetic patient, we anticipate that they will function as a “bio-artificial pancreas” for purposes of insulin production.

Safe Harbor

This press release may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that express the current beliefs and expectations of the management of PharmaCyte. Any statements contained herein that do not describe historical facts are forward-looking statements that are subject to risks and uncertainties that could cause actual results, performance, and achievements to differ materially from those discussed in such forward-looking statements. Factors that could affect our actual results include our ability to raise the necessary capital to fund our operations and to find partners to supplement our capabilities and resources, our ability to satisfactorily address the issues raised by the FDA in order to have the clinical hold on our IND removed, as well as such other factors that are included in the periodic reports on Form 10-K and Form 10-Q that we file with the U.S. Securities and Exchange Commission. These forward- looking statements are made only as of the date hereof, and we undertake no obligation to update or revise the forward-looking statements, except as otherwise required by law, whether as a result of new information, future events or otherwise.

More information about PharmaCyte Biotech can be found at www.PharmaCyte.com. Information may also be obtained by contacting PharmaCyte’s Investor Relations Department.

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Investor Relations:
Dr. Gerald W. Crabtree
PharmaCyte Biotech, Inc.
Telephone: 917.595.2856
Email: InvestorRelations@PharmaCyte.com

Source: PharmaCyte Biotech, Inc.