

August 12, 2019



CORRECTING and REPLACING Propanc Biopharma Publishes Key Data in Peer Reviewed Journal Confirming Anti-Cancer Stem Cell Effects of Proenzymes

Propanc Discusses Next Steps for Promising Research Collaboration with University of Jaén and Granada to Further Optimize Quality, Safety and Performance of PRP

MELBOURNE, Australia--(BUSINESS WIRE)-- First paragraph, first sentence of release should read: [Propanc Biopharma, Inc.](#) (OTC: PPCB) ("Propanc"), a biopharmaceutical company developing new cancer treatments for patients suffering from recurring and metastatic cancer, announced today that the company's scientific researchers, together with its joint research partners, Universities of Jaén and Granada, published key data in a peer reviewed journal, *Scientific Reports*, confirming the mechanism of proenzymes and its anti-cancer effects against cancer stem cells (CSCs) (instead of [Propanc Biopharma, Inc.](#) (OTC: PPCBD) ("Propanc")...).

The correct corrected release reads:

PROPANC BIOPHARMA PUBLISHES KEY DATA IN PEER REVIEWED JOURNAL CONFIRMING ANTI-CANCER STEM CELL EFFECTS OF PROENZYMES

Propanc Discusses Next Steps for Promising Research Collaboration with University of Jaén and Granada to Further Optimize Quality, Safety and Performance of PRP

[Propanc Biopharma, Inc.](#) (OTC: PPCB) ("Propanc"), a biopharmaceutical company developing new cancer treatments for patients suffering from recurring and metastatic cancer, announced today that the company's scientific researchers, together with its joint research partners, Universities of Jaén and Granada, published key data in a peer reviewed journal, *Scientific Reports*, confirming the mechanism of proenzymes and its anti-cancer effects against cancer stem cells (CSCs). From the publishers of *Nature*, it is an online, open access journal, which publishes primary research from all areas of the natural and clinical sciences. The article is entitled "*Pancreatic proenzymes treatment suppresses BXPC-3 pancreatic Cancer Stem Cell subpopulation and impairs tumor engrafting*," and can be accessed via the company website under the link: <https://www.propanc.com/news-media/publications>

"We are excited to publish this paper on our work with PRP and CSCs, where these cells drive cancer," said Dr Julian Kenyon, Propanc's Chief Scientific Officer. "We were able to destroy these cells in significant numbers. Remarkably, we observed at least 13 genes that induce cancer were downregulated by PRP. Also, genes implicated in metastasis were downregulated and 7 genes related to cell adhesion, which is the normal state of healthy tissue, were upregulated. In summary, PRP has multiple modes of action, quite unlike any other cancer drug and is clearly in a class of its own. This is likely to translate into PRP being effective in many different cancer types and reducing the recurrence rate after standard treatments."

"Importantly, we proved that PRP impaired engrafting of human derived pancreatic CSC tumors in nude (immune compromised) mice, whilst also displaying an antigrowth effect toward initiated xenografts (grafted, human derived tumors), showing a decreased amount of tumor surrounding fibrotic tissue of treated mice," said Dr. Perán, Acting Professor at the Department of Health Sciences, University of Jaén and Propanc's Scientific Advisor. "As cancer treatment moves towards more personalized medicine, proven therapies that target and treat specifically CSCs may prove to be a useful method for reducing recurrence after drug treatment failures."

The data provides the strongest evidence that proenzymes could be an effective tool in the fight against metastatic cancer, the single biggest cause of patient death for sufferers. The company's lead product candidate, PRP, is a formulation of two proenzymes, designed to act synergistically against solid tumors which are malignant. PRP is currently in preparation for a First-In-Human study in advanced cancer patients which the company plans to commence in 2020.

To explain the significance of the discovery, people often have the misconception that tumors are made up from the

same type of malignant cell that grows uncontrollably and exponentially. Although that could be the first impression when a tumor progresses rapidly, in fact, tumors are a very complicated kind of *new* organ that develops an intricate organization with its own blood supply and an intricate communication system with the rest of the organism that facilitates the cancer dispersion. In addition, there are different types of cells within a tumor mass, it is true that all of them have a common feature, they are undifferentiated cells, but some of them are more “ancestral” than others. These cells are named cancer stem cells, or CSCs, and are responsible for tumor metastasis and tumor relapse. The strength of these particular cells is that they do not replicate, so conventional therapies that only affect growing cells, do not harm CSCs.

Other important facts about tumors is their ability to change their surroundings, inducing neighboring cells to become malignant, and even more worrisome, its ability to corrupt distant tissue cells creating a future tumor microenvironment.

After more than 10 years collaboration with Propanc’s prestigious, joint scientific researchers with significant experience in cancer, the company now understands the mechanism of action of PRP, a formulation containing a synergistic combination of two pancreatic proenzymes. The “beauty” of this naturally derived formulation is that the body has designed enzymes to perform a specific role on the cells to orchestrate gradual changes. In the same pathways that active enzymes work on healthy cells, PRP, once converted to the activated enzyme form, changes the malignant nature of cancer cells toward a differentiated state in which cells return to be what they were. Some of the company’s scientific studies have already been published in high impact journals, demonstrating that PRP decreases cell proliferation and migration, induces cell differentiation and impairs angiogenesis. In short, tumors cannot grow after PRP treatment, as demonstrated by *in vivo* studies with mice models.

This latest achievement has demonstrated that PRP also has a significant effect on that population of cells within the tumor that keep a dormant state and a stemness nature. As stated above, those cells, called CSCs, are not eradicated by conventional therapies and are responsible for generating a new tumor in other organs, a process known as metastasis, which is the main cause of patient death for sufferers.

“In collaboration with the Universities of Jaén and Granada, we have performed a detailed study on the effects of PRP upon these tumor-initiating cells and we are excited to reveal that our results are very encouraging,” said Mr. James Nathanielsz, Propanc’s Chief Executive Officer. “In addition, we have proven a beneficial impact of our novel treatment, PRP, on tumor initiation and progression as well as on the tumor microenvironment, which is of great scientific interest.”

The company has also been working with its research partners with the aim of enhancing the effects of PRP, whilst also maximizing a better-quality and safer product. The project is progressing well and on track to produce an optimized version of PRP which could be effectively reproduced with enhanced effects, compared to the naturally derived proenzymes. Further work is currently being undertaken to ensure the product is comparable in structure to PRP.

About the University of Jaén:

The University of Jaén is among the Top 50 of the best young universities in the world according to THE (Times Higher Education). Likewise, the University of Jaén received the EFQM 500+ European Seal of Excellence, the highest level of recognition awarded by the Excellence in Management Club, as the official representative of the European Foundation for Quality Management (EFQM) in Spain. It also stands out in the field of computing, since the University of Jaén is among the 75 best universities in the world, according to Academic Ranking of World Universities (ARWU) 2017. The University of Jaén is repeatedly in the top 4% of universities worldwide, according to the Ranking Center for World University Rankings (CWUR), which annually collects the thousand best and most valued among the more than 25,000 existing universities. In addition, it is the fourth Spanish university that has obtained the highest score in the ranking of international student satisfaction, published by the STEXX International Studyportal Organization, in its 2016 version.

About the University of Granada:

The University of Granada is widely recognized internationally for its quality in higher education, teaching, research and outreach. National and international rankings reflect the University Granada’s position among the top universities in Spain and among the best in the world. In 2018, the University of Granada has further consolidated this dominant position – taking 278th place in the world and 3rd in Spain in the recently published Shanghai Academic Ranking of World Universities (ARWU 2018). Viewed from the perspective of its performance in specific academic subjects, the UGR has also set a new record, with a further 34 subjects taught at the University featuring in the 2018 ARWU — 12 more than in 2017. Furthermore, 5 of the University Granada’s subjects feature among the world top 100, marking another significant milestone.

About Propanc Biopharma, Inc.

Propanc Biopharma, Inc. (the "Company") is developing a novel approach to prevent recurrence and metastasis of solid tumors by using pancreatic proenzymes that target and eradicate cancer stem cells in patients suffering from pancreatic, ovarian and colorectal cancers. For more information, please visit www.propanc.com.

The Company's novel proenzyme therapy is based on the science that enzymes stimulate biological reactions in the body, especially enzymes secreted by the pancreas. These pancreatic enzymes could represent the body's primary defense against cancer.

To view the Company's "Mechanism of Action" video on its anti-cancer lead product candidate, PRP, please click on the following link: <http://www.propanc.com/news-media/video>

Forward-Looking Statements

All statements other than statements of historical facts contained in this press release are "forward-looking statements," which may often, but not always, be identified by the use of such words as "may," "might," "will," "will likely result," "would," "should," "estimate," "plan," "project," "forecast," "intend," "expect," "anticipate," "believe," "seek," "continue," "target" or the negative of such terms or other similar expressions. These statements involve known and unknown risks, uncertainties and other factors, which may cause actual results, performance or achievements to differ materially from those expressed or implied by such statements. These factors include uncertainties as to the Company's ability to continue as a going concern absent new debt or equity financings; the Company's current reliance on substantial debt financing that it is unable to repay in cash; the Company's ability to successfully remediate material weaknesses in its internal controls; the Company's ability to reach research and development milestones as planned and within proposed budgets; the Company's ability to control costs; the Company's ability to obtain adequate new financing on reasonable terms; the Company's ability to successfully initiate and complete clinical trials and its ability to successfully develop PRP, its lead product candidate; the Company's ability to obtain and maintain patent protection; the Company's ability to recruit employees and directors with accounting and finance expertise; the Company's dependence on third parties for services; the Company's dependence on key executives; the impact of government regulations, including FDA regulations; the impact of any future litigation; the availability of capital; changes in economic conditions, competition; and other risks, including, but not limited to, those described in the Company's Registration Statement on Form S-1, Amendment No. 1, filed with the U.S. Securities and Exchange Commission (the "SEC") on June 14, 2019, and in the Company's other filings and submissions with the SEC. These forward-looking statements speak only as of the date hereof and the Company disclaims any obligations to update these statements except as may be required by law.

View source version on businesswire.com: <https://www.businesswire.com/news/home/20190812005295/en/>

Investor Relations and Media:

Parker Mitchell
Propanc Biopharma, Inc.
Investor Relations
irteam@propanc.com
+61-03-9882-6723

Source: Propanc Biopharma