January 8, 2020

CohBar Discovers Novel Peptide Inhibitors of CXCR4, a Key Regulator of Tumor Growth and Metastasis

Anti-tumor effects demonstrated in vivo in preclinical melanoma immuno-oncology model

MENLO PARK, Calif., Jan. 08, 2020 (GLOBE NEWSWIRE) -- CohBar, Inc. (NASDAQ: CWBR), a clinical stage biotechnology company developing mitochondria based therapeutics (MBTs) to treat chronic diseases and extend healthy lifespan, today announced the discovery of a series of novel mitochondrial peptide analogs with potent in vitro activity as selective inhibitors of C-X-C Chemokine Receptor Type 4 (CXCR4) and with preliminary in vivo efficacy in a mouse model of melanoma, including substantial reduction in tumor growth as compared to control animals. CXCR4 is a key regulatory receptor involved in tumor growth, invasion, angiogenesis, metastasis, and resistance to therapy.

“This new discovery offers the potential to develop novel therapeutics for difficult-to-treat cancers, based on peptides encoded in the mitochondrial genome,” said Ken Cundy, Ph.D., CohBar’s Chief Scientific Officer. “Inhibition of this key regulatory pathway is potentially applicable to a wide range of cancers, as well as orphan indications where CXCR4 signaling is dysregulated.”

Novel peptide analogs of a mitochondrially encoded peptide (MBT5) demonstrated potent and selective inhibition of human CXCR4 receptor in cell-based assays, with IC50 values in the low nanomolar concentration range. In a difficult-to-treat in vivo mouse model of melanoma, the B16F10 syngeneic tumor model, the combination of an analog of MBT5 administered subcutaneously with the chemotherapeutic temozolomide showed enhanced antitumor activity, reducing tumor growth after 11 days by 61% compared to control animals. The reduction in tumor growth produced by the combination exceeded the effect of either temozolomide used as a single agent, which reduced tumor growth by 38% compared to control, or the murine checkpoint inhibitor anti-PD-1 antibody, which had no effect on tumor growth in this model.

CohBar plans to further explore the efficacy of this new family of peptides in additional animal models with the goal of identifying a new clinical development MBT candidate.

“These new data further expand our understanding of the broad regulatory influence exerted by mitochondria and the therapeutic potential of analogs of peptides encoded in mitochondrial DNA,” said Steve Engle, CohBar CEO. “We are just beginning to scratch the surface of this previously untapped field.”

CXCR4 is overexpressed in more than 75% of cancers and high levels of the receptor are

associated with poor survival prognosis. Inhibition of the CXCR4 receptor has been shown to mobilize immune cells, enhance the effects of chemotherapy and immunotherapy in various cancers, and reduce the development of metastatic tumors by blocking the ability of tumor cells to evade immune surveillance. CXCR4 also regulates the homing and retention of hematopoietic stem cells and malignant cells in the bone marrow.

Further details of these new studies will be available on the CohBar website at www.cohbar.com.

About CohBar

CohBar (NASDAQ: CWBR) is a clinical stage biotechnology company focused on the research and development of mitochondria based therapeutics, an emerging class of drugs for the treatment of chronic and age-related diseases. Mitochondria based therapeutics originate from the discovery by CohBar's founders of a novel group of naturally occurring mitochondrial-derived peptides within the mitochondrial genome that regulate metabolism and cell death, and whose biological activity declines with age. To date, the company has discovered more than 100 mitochondrial-derived peptides. CohBar's efforts focus on the development of these peptides into therapeutics that offer the potential to address a broad range of diseases, including nonalcoholic steatohepatitis (NASH), obesity, fibrotic diseases, cancer, type 2 diabetes, and cardiovascular and neurodegenerative diseases. The company's lead compound, CB4211, is in the phase 1b stage of a phase 1a/1b clinical trial that includes an evaluation of biological activity relevant to NASH and obesity.

For additional company information, please visit www.cohbar.com.

Forward-Looking Statements

This news release contains forward-looking statements which are not historical facts within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and other future conditions. In some cases you can identify these statements by forward-looking words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "should," "would," "project," "plan," "expect," "goal," "seek," "future," "likely" or the negative or plural of these words or similar expressions. Examples of such forward-looking statements including but not limited to statements regarding the ability of mitochondrial peptide analogs to reduce tumor growth in mice; anticipated outcomes of research and clinical trials for our mitochondria based therapeutic (MBT) candidates; expectations regarding the growth of MBTs as a significant future class of drug products; and statements regarding anticipated therapeutic properties and potential of our mitochondrial peptide analogs and MBTs. You are cautioned that such statements are not guarantees of future performance and that actual results or developments may differ materially from those set forth in these forward looking statements. Factors that could cause actual results to differ materially from these forward-looking statements include: our ability to successfully advance drug discovery and development programs, including the delay or termination of ongoing clinical trials; our possible inability to mitigate the prevalence and/or persistence of the injection site reactions, receipt of unfavorable feedback from regulators regarding the safety or tolerability of CB4211 or the possibility of other developments affecting the viability of CB4211 as a clinical candidate or its commercial potential; results that are different from earlier data results

including less favorable than and that may not support further clinical development; our ability to raise additional capital when necessary to continue our operations; our ability to recruit and retain key management and scientific personnel; and our ability to establish and maintain partnerships with corporate and industry partners. Additional assumptions, risks and uncertainties are described in detail in our registration statements, reports and other filings with the Securities and Exchange Commission and applicable Canadian securities regulators, which are available on our website, and at www.sec.gov or www.sedar.com.

You are cautioned that such statements are not guarantees of future performance and that our actual results may differ materially from those set forth in the forward-looking statements. The forward-looking statements and other information contained in this news release are made as of the date hereof and CohBar does not undertake any obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise, unless so required by applicable securities laws. Nothing herein shall constitute an offer to sell or the solicitation of an offer to buy any securities.

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