

Inhibition of PBEF is a possible therapeutic target for pulmonary hypertension

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Inhibition of pre-B Cell Colony-Enhancing Factor (PBEF) could be a potential therapeutic target for pulmonary hypertension (PH), according to a preclinical study in an animal model of PH.

"PBEF expression appears to be significantly increased in PH. Accordingly, we examined whether inhibiting PBEF could prevent and reverse PH in rats," said Roberto Machado, MD, associate professor of medicine at the University of Illinois at Chicago. "We found that PBEF not only prevented the development of PH, but was able to reverse established PH, suggesting its potential use as a therapy for PH in humans."

The results will be presented at the ATS 2012 International Conference in San Francisco.

In the study, rats were given one dose of monocrotaline to induce PH. Two sets of experiments were performed: prevention experiments, in which inhibition of PBEF was performed simultaneously with administration of monocrotaline, and reversal experiments, in which PBEF inhibition was performed two weeks after administration of monocrotaline when PH was already established in the animals.

In the prevention experiments, inhibition of PBEF prevented the development of PH and right ventricular hypertrophy. In the reversal experiments, inhibition of PBEF reversed established PH. In additional experiments in a cell culture model using human pulmonary arterial

[smooth muscle cells](#), treatment with recombinant PBEF enhanced store-operated calcium entry, which is involved in sustained pulmonary vasoconstriction and [cell proliferation](#), suggesting a possible mechanism for the observed effects of PBEF inhibition in PH.

"If the prevention and reversal of PH with PBEF inhibition that we observed in our preclinical model can be replicated in humans, it might offer a new approach to the treatment of patients with PH," said Dr. Machado. "Further studies are needed to confirm and expand upon our early results."

More information: "Inhibition Of Pre-B Cell Colony-Enhancing Factor (PBEF) Prevents And Reverses Monocrotaline-Induced Pulmonary Hypertension" (Session C17, Tuesday, May 22, 2012: Room 2001-2003, Moscone Center; Abstract 29757)

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