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## iBio Anti-Fibrosis Portfolio Expanded to Include Orally Delivered Peptides

NEW YORK, NY -- (Marketwired) -- 09/21/15 -- iBio, Inc. (NYSE MKT: IBIO), a leader in plant-based biotechnology for developing and manufacturing biopharmaceutical products, today announced further discoveries by iBio's scientific collaborator, Carol Feghali-Bostwick, PhD, the SmartState™ and Kitty Trask Holt Endowed Chair and Professor of Medicine at the Medical University of South Carolina. Dr. Feghali-Bostwick's team, in a new report in the peer-reviewed journal, *International Immunopharmacology*, has demonstrated efficacy of an orally-dosed peptide version of iBio's protein candidate against fibrotic diseases.

The results of newly-reported experiments extend Dr. Feghali-Bostwick's earlier discovery that a peptide derived from endostatin (E4) can prevent or ameliorate fibrosis as determined by lung histology and hydroxyproline content in a widely accepted animal model of the disease. This new information demonstrates that E4 can be dosed orally, and will also prevent or modify the disease in either a single-dose, or repeat-dose oral administration regimen. This is the first demonstration that an orally-dosed peptide is effective in treating fibrosis in an animal model.

"Oral dosing of drugs is generally a patient-preferred route versus injections because of ease of administration, particularly for chronic conditions that require relatively long-term use of a drug. However, oral administration of peptides or protein drugs is rarely found to be effective due to presumed action of digestive enzymes," said Terence Ryan, Ph.D., iBio's Chief Scientific Officer. "The success of oral E4 is unexpected but gratifying, and we look forward to evaluating further product candidates using this route of administration."

In the reported experiments, pulmonary fibrosis was induced in mice by intratracheal instillation of bleomycin, and orally administered E4 was given concurrently with or subsequent to bleomycin. A single dose of 20ug E4 per mouse was sufficient to prevent or ameliorate fibrosis, while lower doses of E4 required multiple administrations to ameliorate the disease. These results show that oral administration of E4 results in sufficient bioavailability of the peptide and suggest that the oral route of administration could open up additional therapeutic opportunities for this and related endostatin-derived product candidates.

The E4 used in these experiments was produced by chemical synthesis, a process that is difficult, expensive, and previously regarded as commercially infeasible for peptides to be dosed orally. In collaboration with Dr. Feghali-Bostwick, iBio has developed a variant of the E4 peptide, IBIO-CFB03, intended for use in humans, manufactured using its proprietary iBioLaunch™ transient expression system in whole green plants. iBio's continuing work to advance its product candidates for the treatment of fibrosis through clinical development is being assisted by the previously announced grant awarded in support of the program by the

National Institutes of Health.

"By using our iBioLaunch technology, we have been able to create and assess multiple protein variants for improved pharmacologic and therapeutic properties more quickly than could be done using chemically-synthesized peptides," said Robert Erwin, iBio's President. "We also expect our plant-manufactured variants to be dramatically less costly to produce than they would be using chemical synthesis."

Dr. Feghali-Bostwick's paper is available online at the website of *International Immunopharmacology* as a paper in press. The full reference is as follows: Nishimoto, T., Mlakar, L., Takihara, T., Feghali-Bostwick, C. An endostatin-derived peptide orally exerts anti-fibrotic activity in a murine pulmonary fibrosis model. *International Immunopharmacology* (2015) doi:10.1016/j.intimp.2015.07.039

### **About iBio, Inc.**

In addition to its fibrosis therapeutic product program, iBio also offers proprietary products and product licenses to others based on its proprietary iBioLaunch gene expression and iBioModulator™ thermostable immunomodulator protein platforms, providing collaborators full support for turn-key implementation of its technology for protein therapeutics and vaccines. In Brazil, iBio has formed a subsidiary company, iBio do Brasil Biofarmaceutical Ltda., and has been collaborating with the Oswaldo Cruz Foundation (Fiocruz) to develop a recombinant yellow fever vaccine based on iBio technology. The iBioLaunch gene expression platform is a proprietary, transformative technology for development and production of biologics using transient gene expression in unmodified green plants. The iBioModulator platform is designed to significantly improve vaccine products with both higher potency and greater duration of effect. Further information is available at: [www.ibioinc.com](http://www.ibioinc.com).

### **FORWARD-LOOKING STATEMENTS**

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Source: iBio, Inc.