

## PRESS RELEASE

### OSTA BIOTECHNOLOGIES INC. ANNOUNCES SIGNIFICANT FINDINGS IN A STUDY OF HUMAN PTH (1-34) IN ITS MOUSE MODEL FOR OSTEOPOROSIS

MONTREAL, QC – September 27, 2005 - Osta Biotechnologies Inc., today announced the publication of a landmark study in which its researchers have shown for the first time that the Parathyroid Hormone Related Peptide (PTHrP) derived from bone forming cells (osteoblasts) is a potent endogenous peptide for bone formation. It modifies the therapeutic efficacy of administered human PTH 1-34, a peptide similar in structure to Forteo, the only bone anabolic agent approved by the FDA currently on the market for the treatment of osteoporosis. The article entitled “*Osteoblast-derived PTHrP is a Potent Endogenous Bone Anabolic Agent That Modifies the Therapeutic Efficacy of Administered PTH 1-34*” is published in the online edition of *The Journal of Clinical Investigation* (JCI) at [www.jci.org](http://www.jci.org).

Dr. Andrew Karaplis, Osta’s President and Chief Scientific Officer commented: “We are very pleased with these findings demonstrating a previously unrecognized capacity of the PTHrP produced within the skeletal microenvironment to regulate bone turnover, to empower the process of bone formation and to influence the anabolic properties of administered Parathyroid hormone. We have demonstrated that the osteoporotic phenotype of the *Pthrp*<sup>+/-</sup> mice arises from defective bone formation due to impaired bone marrow precursor cell recruitment and increased osteoblast/osteocyte apoptosis. Moreover, by generating mice with osteoblast-specific targeted disruption of PTHrP we have solidified the pivotal role of osteoblast-derived PTHrP in the process of bone formation. We have shown that osteoblast-derived PTHrP functions as a powerful endogenous bone anabolic agent to promote the recruitment of osteogenic cells and prevent the apoptotic death of osteoblasts and osteocytes. Finally, we report that the anabolic action of administered PTH 1-34 is amplified in the background of PTHrP haploinsufficiency, indicating that the therapeutic efficacy of PTH 1-34 arises in part by modulating downstream signals in osteogenic cells that are normally regulated by endogenous PTHrP. ”

A commentary has been written on these breakthrough findings about the PTHrP protein in JCI by the discoverer of PTHrP protein, Prof. Jack Martin, John Holt Fellow, St. Vincent's Institute, Emeritus Professor of Medicine, The University of Melbourne.

Prof. Martin stated in his commentary “In this issue of the *JCI*, the authors present compelling evidence supporting the notion of a paracrine role for PTHrP as a pivotal endogenous stimulator of bone formation that acts on committed osteoblast precursors in order to enhance their differentiation and, furthermore, to reduce osteoblast apoptosis. The authors raise the plausible possibility that PTHrP deficiency could enhance the therapeutic response to PTH, thus identifying osteoporotic patients more likely to respond to this treatment. This new insight into the role of PTHrP in bone physiology poses a number of intriguing questions. The maintenance of skeletal integrity is an essential survival function for mammals. Participation in this process by PTHrP might be sufficient to explain the remarkable conservation of PTHrP amino acid sequence among mammalian species. Finally, answers to the questions raised by this work will surely influence future approaches to anabolic therapies for the skeleton”.

This pioneering study conducted by Osta's researchers has shown that mice heterozygous for targeted disruption of *Pthrp* exhibit by three months of age, diminished bone volume and skeletal microarchitectural changes indicative of advanced osteoporosis. Impaired bone formation arising from decreased bone marrow precursor cell recruitment and increased apoptotic death of osteoblastic cells was identified as the underlying mechanism for low bone mass. The osteoporotic phenotype was recapitulated in mice with osteoblast-specific targeted disruption of *Pthrp* generated using Cre-LoxP technology and defective bone formation was reaffirmed as the underlying etiology. Daily administration of PTH 1-34 to *Pthrp*<sup>+/-</sup> mice resulted in profound improvement in all parameters of skeletal micro-architecture, surpassing those observed in treated wild type littermates. These findings establish a pivotal role for osteoblast-derived PTHrP as a potent endogenous bone anabolic factor that potentiates bone formation by altering osteoblast recruitment and survival and whose level of expression in the bone microenvironment influences the therapeutic efficacy of exogenous PTH 1-34.

***Osta Biotechnologies Inc.***

Osta is a biopharmaceutical company listed on the TSX Venture Exchange (TSXV: OBI). Osta is dedicated to developing novel diagnostics and therapeutics for the aging population particularly in the areas of Osteoporosis, Osteoarthritis and Alzheimer's disease.

The TSX Venture Exchange does not accept responsibility for the adequacy or accuracy of this release.

*Certain information in this press release is forward-looking and is subject to numerous risks and uncertainties. By their nature, such forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those contemplated by the forward-looking statements. These risks include actions of Osta's competitors, and those inherent in scientific research and development.*

For further information, please contact:  
Mr. Alain Geahchan  
Director of Investor Relations  
Telephone: (450) 781-1317