



## Study Results Suggest Oral Salmon Calcitonin Using Eligen(R) Drug Delivery Technology May Reduce Cartilage and Bone Degradation in Osteoarthritis

CEDAR KNOLLS, N.J., Oct 15, 2009 (BUSINESS WIRE) -- Emisphere Technologies, Inc. (OTCBB: EMIS) announced study results in which twice-daily oral salmon calcitonin using Emisphere's proprietary Eligen<sup>(R)</sup> Drug Delivery Technology significantly suppressed markers of cartilage and bone degradation versus placebo in men and women with osteoarthritis, the most common form of arthritis. The study, a Phase I, placebo-controlled, double-blind, double-dummy, randomized, gender-stratified clinical trial, was conducted on behalf of Emisphere's partner Novartis Pharma AG by Nordic Bioscience, and published online in the September 2009 issue of *Osteoarthritis and Cartilage*.

A total of 73 male and female subjects aged 57 to 75 years with painful osteoarthritis of the knee received twice-daily 0.6 mg or 0.8 mg doses of oral salmon calcitonin with the Eligen<sup>(R)</sup> Technology or placebo administered over 14 days. Doses of 0.8mg compared with 0.6mg produced significantly higher  $C_{max}$  and AUC(0-4 hrs), of calcitonin,  $P=0.03$ . This resulted in significant reductions in CTX-I and CTX-II which are biochemical markers of bone degradation and of cartilage degradation, respectively. Gender had no observable influence on results. Oral sCT doses were well tolerated; 44 adverse events and no serious adverse events were reported in this study. For further details please consult the original publication which is available online (Karsdal MA et al; The effect of oral salmon calcitonin delivered with 5-CNAC on bone and cartilage degradation in osteoarthritic patients: a 14-day randomized study; *Osteoarthritis and Cartilage*; available online September 1, 2009).

"We are pleased that emerging data continue to indicate oral salmon calcitonin in combination with our absorption-enhancing Eligen<sup>(R)</sup> Technology may be a potential therapeutic option for women and men with osteoarthritis, which affects more than 20 million people in the [United States](#)," said Michael V. Novinski, President and Chief Executive Officer, Emisphere Technologies. "We look forward to further validating these results in the extensive ongoing Phase III clinical trial program."

Emisphere announced in June 2009 that recruitment had been completed for the planned second multi-center Phase III study exploring the safety and efficacy of oral salmon calcitonin using the Eligen<sup>(R)</sup> Technology to treat patients with osteoarthritis of the knee. Enrollment in the first Phase III trial for osteoarthritis was completed in September 2008.

Oral salmon calcitonin using Eligen<sup>(R)</sup> Technology is also being investigated in a Phase III study for osteoporosis being conducted by Novartis Pharma AG and Nordic Bioscience.

### About Osteoarthritis

Osteoarthritis ("OA") is a clinical syndrome in which low-grade inflammation results in joint pain, caused by a wearing-away of [cartilage](#) that cushions the joints and the destruction or decrease of [synovial fluid](#) that lubricates those joints. As OA progresses, pain can result when the patient bears weight upon the joints, when walking or standing. OA affects nearly 21 million people in the [United States](#), accounting for approximately 15 percent of visits to [primary care physicians](#). It is estimated that 80 percent of the population will have [radiographic](#) evidence of OA by age 65.

Bone and cartilage degradation are normally tightly coupled in the pathogenesis of OA, indicating an optimal approach to counter the progression of OA may be to target both bone and cartilage degeneration. Recent preclinical experience and preliminary data from clinical settings suggest that calcitonin may have positive effects on both bone and cartilage.

### About Emisphere Technologies, Inc.

Emisphere is a biopharmaceutical company that focuses on a unique and improved delivery of therapeutic molecules or nutritional supplements using its proprietary Eligen<sup>(R)</sup> Technology. The Eligen<sup>(R)</sup> Technology can be applied to the oral route of administration as well as other delivery pathways such as buccal, rectal, inhalation, intra-vaginal or transdermal. The company's website is [www.emisphere.com](http://www.emisphere.com).

### Safe Harbor Statement Regarding Forward-Looking Statements

*The statements in this release and oral statements made by representatives of Emisphere relating to matters that are not historical facts (including without limitation those regarding the timing or potential outcomes of research collaborations or clinical trials, any market that might develop for any of Emisphere's product candidates and the sufficiency of Emisphere's cash and*

*other capital resources) are forward-looking statements that involve risks and uncertainties, including, but not limited to, the likelihood that future research will prove successful, the likelihood that any product in the research pipeline will receive regulatory approval in the United States or abroad, the ability of Emisphere and/or its partners to develop, manufacture and commercialize products using Emisphere's drug delivery technology, Emisphere's ability to fund such efforts with or without partners, and other risks and uncertainties detailed in Emisphere's filings with the Securities and Exchange Commission, including those factors discussed under the caption "Risk Factors" in Emisphere's Annual Report on Form 10-K for the fiscal year ended December 31, 2008, filed on March 16, 2009, and as amended on Form 10-K/A as filed on April 30, 2009, and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2009, filed on May 7, 2009.*

SOURCE: Emisphere Technologies, Inc.

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