

## Bone Therapeutics and Partners awarded over €0.5 million M-ERA.net research funding to develop 3-D patient-tailored bone tissue engineered products

*Funding will support a study into the feasibility of combining Bone Therapeutics' first-in-class allogeneic osteoblastic bone tissue products with 3-D bioresorbable scaffolds*

**Gosselies, Belgium, 17 July 2014 - BONE THERAPEUTICS**, the regenerative therapy company addressing unmet medical needs in the field of bone diseases and orthopaedics, today announces it will lead an expert consortium which has been awarded an M-ERA.net grant totalling €576,000. The M-ERA.net EU fund supports European research collaboration programmes in materials science and engineering and health-related technology innovation.

The two year-long study, CERACELL<sup>1</sup>, aims to assess the feasibility of developing 3-D patient-tailored bioresorbable bone tissue engineered products for the reconstruction of bone defects. In a highly innovative approach, the study will use Bone Therapeutics' fully differentiated bone-forming (osteoblastic) cells that will add osteogenic<sup>2</sup> capacity on top of the osteoconductive<sup>3</sup> capacity of the 3-D scaffold. The scaffold will be tailored to the patient need, designed to replace the missing bone part as accurately as possible, matching mechanical properties to the host bone tissue. This enhanced tissue engineering approach is expected to produce a favourable environment for bone regeneration and could be utilised in conditions such as large bone defects (e.g., reconstruction of bone metastasis resection).

Bone Therapeutics is pleased to be collaborating with two European research and industrial partners with complementary expertise: CT-scan images of bone defects will be analyzed by the UK Company Image Analysis, using 3-D reconstruction algorithms. A contour approach based upon an atlas shape of normal bone will be used to accurately determine the set of image voxels that constitute the missing volume of bone, giving a 3-D bit-map of the shape to be printed which will be converted to the required formats for the printer. The Belgian research center SIRRIS will be responsible for the additive manufacturing process of the 3-D pieces. Cell adhesion, survival, proliferation and colonization will be determined by Bone Therapeutics on printed scaffolds, and the cell's biomechanical properties will be tested.

**Enrico Bastianelli, CEO of Bone Therapeutics, commented**, "One of the major challenges of modern medicine is to improve treatment of serious conditions such as large bone defects, as where treatments exist they are often not fully satisfactory. In order to be efficient and safe, the next generation of products should combine allogeneic osteoblastic cells – harvested from a universal donor – and 3-D bioprinted personalized synthetic scaffold."

<sup>1</sup> "Development of 3-D patient-tailored bone tissue engineered products combining osteoblasts and scaffold for the repair of massive bone defects", or CERACELL.

<sup>2</sup> Osteogenic: inherent capacity to produce new bone.

<sup>3</sup> Osteoconductive: mechanistic support for ingrowth of bone from the borders of the defect.

**Thierry Dormal, Technological Manager Additive Manufacturing of SIRRIS, commented,** “For SIRRIS, this interdisciplinary research program will be a unique opportunity to test patient-tailored 3-D-scaffold rapid prototyping for bone applications.”

**Mark Hinton, CTO of Image Analysis, commented,** “Image Analysis is delighted to be using its image processing and computer science expertise to enable these ground breaking approaches to treating massive bone defects. Bringing advanced algorithms into clinical practice is at the core of our ethos.”

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### **About Bone Therapeutics**

Bone Therapeutics is a regenerative therapy company specializing in addressing unmet medical needs in the field of orthopaedics via a minimally invasive approach. Utilizing the Company’s unique knowledge of the bone/joint physiology and long-standing expertise in cell therapy and cell transplantation, Bone Therapeutics has created a fully integrated business with an advanced product pipeline comprising novel bone cell products, tailored in-house production methods and minimally invasive treatment techniques.

Bone Therapeutics autologous bone cell product, PREOB<sup>®</sup>, is currently in phase III clinical trials for the treatment of osteonecrosis and non-union fractures. Bone Therapeutics is also developing an allogeneic bone cell therapy product, ALLOB<sup>®</sup>, which entered the clinic in 2014 for the treatment of delayed union fractures. All of Bone Therapeutics’ cell therapy products are manufactured to the highest GMP standards, comply with all regulations and are protected by a rich IP estate.

The bone disease and reconstruction market is one of the largest healthcare markets in the world, with more than 4 million procedures requiring bone grafts performed annually in Europe and the USA alone. Bone Therapeutics is operating in areas where demand for new products is high and competition is low. Founded in 2006, Bone Therapeutics is privately held and headquartered in Gosselies (south of Brussels), Belgium. Further information is available at: [www.bonetherapeutics.com](http://www.bonetherapeutics.com)

**About M-ERA.Net:** M-ERA.Net project is a network of agencies and programs involved in funding science and materials engineering. The objective of this EU funding is to support and enhance the coordination of national and regional budgets and research efforts to develop a community of strong research and development-focused organizations to benefit industry and society across Europe. For more information on M-ERA.Net visit: <http://www.m-era.net/>

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