

EXECUTIVE SUMMARY

OVERVIEW

Bonus BioGroup (TASE: BONS) is a biotechnology company applying a proprietary, innovative technology to generate live tissue-engineered bone grafts. The company strives to become a world leader in the field of tissue engineering and bone transplantation.

Bonus BioGroup was founded to commercialize over ten years of bone regeneration research carried out by Dr. Shai Meretzki, the founder and former CEO of Pluristem Therapeutics Inc. (NASDAQ: PSTI, TASE:PLTR), in cooperation with leading scientists of the Technion – Israel Institute of Technology, Rambam Health Care Campus and other prominent research institutes.

The company is targeting a multi-billion dollar worldwide market for the treatment of skeletal disorders, such as bone- and cartilage-related arthritis, and various types of bone and joint trauma (e.g., hip fractures, knee injuries). This market involves over 2 million bone graft procedures annually.

Bonus BioGroup has developed a unique method for growing three dimensional (3D) high-density live bone graft, derived from the patient's own (autologous) cells. The bone graft is constructed of a variety of cell types, cultured in a bioreactor system. This unique technology generates a bone graft *ex-vivo* (outside the human body), which can then be better and more rapidly accepted by the patient's body, in comparison to alternative bone grafts.

This technology allows, for the first time, fabrication of a human tissue graft tailored to the patient's biological, physical and clinical needs, optimizing the patient's body response to the live bone graft, while avoiding risk of immune reactions and graft rejection.

In April 2014, the company launched a clinical trial to test the safety and efficacy of injectable live human bone grafts in repairing maxillofacial bone deficiencies, including upper and lower jawbone cavitation. The grafts were comprised of cells originating from the patients' own fat tissue.

The live human bone grafts are manufactured in Bonus BioGroup's manufacturing facility at Matam Advanced Technology Park, Haifa, Israel. The manufacturing facility includes a set of clean rooms as well as quality control and assurance units. The facilities follow good manufacturing practice (GMP) regulations and are GMP- and ISO-9001 certified.

Bonus BioGroup generates personalized live human bone grafts using a unique technology, which combines disciplines such as biology, tissue engineering, material engineering and tailored medicine. Bonus BioGroup aims to provide innovative therapeutic solutions that will position it as a global leader in the fields of bone tissue engineering and regenerative medicine.

THE NEED

Bone tissue engineering represents one of the most challenging emergent scientific and clinical fields. Bone reconstruction is medically required to repair, strengthen, or improve the function of injured, diseased or traumatized bone. These conditions arise in a multitude of situations, including trauma, accidents, bone cancer, periodontal diseases, restricted growth and congenital bone diseases.

The gold standard medical approach for repairing bone defects involves autologous bone grafting, during which bone is relocated from one organ to another in the patient's body. This approach accounts for almost half of all bone reconstruction procedures performed worldwide. However, autologous bone grafting bears several inherent shortcomings, including a considerably invasive surgical procedure, donor site morbidity, inadequate bone graft quality and imprecise fit to the defect size and shape.

The ideal bone graft is biocompatible, functionally and structurally similar to the patient's bone, easily transplantable and cost-effective. Failure rates of current bone reconstruction techniques have encouraged researchers to seek new biomaterials which can promote bone repair or regeneration. Recent progress has been made in application of tissue engineering principles to generate functional bone tissue for transplantation.

Bonus BioGroup addresses the key hurdles to bone grafting procedures by providing a breakthrough solution that enables the production of live bone grafts derived from the patient's own fat tissue.

AN INNOVATIVE SOLUTION

Bonus BioGroup has developed a breakthrough solution for bone reconstruction. The novel method is based on the development of a unique high-density bone graft, generated from multi-cell 3D cultures, which is designed to readily integrate into the designated anatomical site and treat a variety of bone and joint pathologies. Cultured from the patient's own cells, this innovative bone graft is better tolerated by the patient's immune system, eliminating the risk of tissue rejection and surgery failure. Additionally, this new method enables tailoring of the 3D shape of the manufactured bone tissue to precisely fit the deficient anatomical site in each patient.

In summary, Bonus BioGroup's bone grafts are available on demand, personalized to each patient, safe, cost-effective, and more efficient than any other solution available to date.

THE PRODUCT – BONOFill™

BonoFill™ is an exclusive 3D, high-density bone graft, derived from the patient's own cells, extracted from a small sample of fat tissue obtained in a simple and minimally invasive procedure. A heterogeneous population of cells is then rapidly isolated from the patient's tissue sample. The cells are cultured and expanded in a

bioreactor system, on a supportive matrix (scaffold), in Bonus BioGroup's manufacturing facility, under good manufacturing practices (GMP) conditions, suitable for clinical utilization.

BonoFill™ is a multi-cell graft, consisting of both mature and premature bone cells, which maintain their ability to proliferate and secrete growth factors, as well as endothelial cells which enhance vascularization (formation of blood vessels and capillaries in a living tissue). This exceptional cell composition, together with the specific scaffold, promotes tissue regeneration and induce de-novo bone formation and recovery mechanisms in the transplantation site.

Once formed, the bone graft is transplanted into the patient's bone lesion, where its inherent repair mechanisms are immediately activated to trigger new growth and stimulate surrounding tissue to regenerate healthy bone tissue.

Cultured from the patient's own cells, BonoFill™ eliminates the risk of harmful immunological responses and tissue rejection, which could lead to surgery failure. Bone regeneration is completed within several weeks, rendering BonoFill™ a very efficient product, compared with other solutions. BonoFill™'s biological superiority is further enhanced by its flexibility and tailorable configuration.

Two BonoFill™ based bone graft types are currently available:

1. **Injectable bone graft**, suitable for confined defects, such as maxillofacial bone voids and cysts. This bone graft is comprised of bone-induced cells seeded on matrix particles. The graft is delivered by a syringe via an injectable hydrogel.
2. **Anatomically pre-designed bone graft**, a cut-to-shape graft designed to precisely match the dimensions of the patient's bone gap as determined by 3D Computed Tomography (CT) imaging. The personalized scaffold pattern is then cultured with the patient's cells in a bioreactor and in controlled conditions, to generate the transplantable, live bone graft.

PRODUCT PIPELINE

Bonus BioGroup is developing solutions for several clinical indications, including critical-sized orthopedic bone defects and knee injuries, which require a combined bone and cartilage (osteochondral) graft.

The company is also actively seeking innovative technologies that can be integrated into its current products and platforms, mainly in the field of graft vascularization and the generation of standalone shelf products for tissue reconstruction. The company is currently collaborating with strategic partners at Massachusetts Institute of Technology (MIT), Harvard University and the Technion – Israel Institute of Technology.

CLINICAL TRIALS

In April 2014, Bonus BioGroup commenced a clinical trial designed to test the safety and efficacy of the injectable BonoFill™ in the repair of human maxillofacial bone deficiency, including upper or lower jawbone cavitation. This was the first utilization of the injectable graft – a modality which both facilitates the surgical

procedure by reducing the number and complexity of the required intervention and also hastens the rehabilitation process experienced by the patient.

Two additional clinical trials are being planned, the first is aimed at repairing craniomaxillofacial (involving the skull and face) deficiencies whereas the second is aimed at repairing orthopedic limb bone defects. Both clinical trials will evaluate the safety and efficacy of the Company's second generation injectable graft, which was developed to exhibit enhanced properties, including shorter manufacturing period, reduced manual processing, lower manufacturing costs and suitability for mass production. Broadening the array of clinical indications treatable by BonoFill™ will expand the treatment options available to potential patients and cover more complex medical conditions.

The Company estimates that its live bone graft demonstrates qualities superior to any other non-living bone graft. As the manufactured live human bone graft originates from an autologous fat sample, the company's expects the graft to be fully tolerated, without induction of any immune responses or graft rejection.

MANUFACTURING FACILITY

In July 2013, Bonus BioGroup successfully inaugurated a first-of-its-kind human bone graft production facility, in its 1,000 square meter production center, laboratory and office complex at Matam Advanced Technology Park in Haifa, Israel. The facility consists of three divisions:

- **Manufacturing facility** for producing human bone grafts to be utilized for clinical trials. The manufacturing facility includes a set of clean rooms as well as quality control and assurance units. The facility was designed in compliance with the European Good Manufacturing Practice (GMP) instructions and meets all advanced therapy regulations in regard to the production of clinical-grade cellular products suitable for human therapy. The GMP-grade operational manufacturing facility allows Bonus BioGroup full control over the entire process of bone graft production.
- **R&D Center** committed to ongoing pursuit of performance excellence and innovation and to exploring additional applications of the company's current and future products.
- **Headquarters** for Bonus BioGroup's management team, which supervises its R&D activities in Israel and in the United States.

OUR VISION

Bonus BioGroup aspires to ascertain its position as a global leader in the field of tissue engineering and live bone transplantation. Its unique product, BonoFill™, is designed to replace the current lacking medical solutions as the optimal therapeutic modality and the new standard of care in bone repair.

BREAKTHROUGH PRODUCT – An autologous bone graft with optimal properties

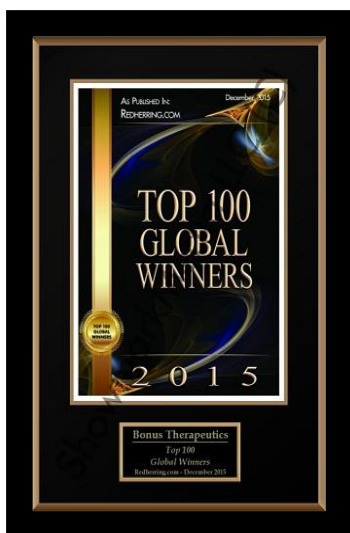
BonoFill™ has numerous benefits to both patients and physicians. It is made of autologous (self) cells derived from patients own adipose (fat) tissue, which can be easily harvested by a minimally invasive procedure. It is injectable and provided in a ready-to-use syringe, allowing for a simple injection procedure, and it is optimally personalized to precisely match the defect size of each patient. Moreover, BonoFill™'s exceptional cell composition and scaffold employment, promotes tissue regeneration and induce de-novo bone formation and recovery mechanisms in the transplantation site. Once formed, the bone graft is transplanted into the patient's bone lesion, where its inherent repair mechanisms are immediately activated to trigger new growth and stimulate surrounding tissue to regenerate healthy bone tissue.

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WORLDWIDE ACTIVITY

The worldwide incidence of bone disorders and conditions has trended sharply upward and is expected to double by 2020. Various parameters contribute to this market growth, including the rise in aging population, especially when coupled with obesity and poor physical activity, the increase in accidents and trauma-induced injuries. This rise represents a billion dollar market potential, which Bonus BioGroup wishes to explore globally. BonoFill™ was designed to be utilized in a wide array of clinical settings requiring bone augmentation and regeneration. Bonus BioGroup's vision is to render BonoFill™ an all-round optimal therapeutic solution to a variety of bone conditions, including those secondary to trauma, bone resection following surgery, ageing, metabolic or genetic skeletal disorders, and to provide it internationally.

RECOGNITION



In April 2015, Bonus Therapeutics Ltd., a wholly owned subsidiary of Bonus BioGroup Ltd., was selected a winner of the 2015 edition of **Red Herring's Top 100 Europe Award**. Red Herring performs daily and periodical analytic reviews of technology companies around the world and selects 100 technology companies, which, to the best of their judgment, demonstrate the greatest business opportunities across Europe.

In November 2015, Bonus Therapeutics Ltd. was selected a winner of the 2015 edition of **Red Herring's Top 100 Global Award** as one of the most innovative and promising companies across all technological sectors worldwide for year 2015.

At the closing ceremony of the event, Alex Serge Vieux - publisher and CEO of Herring International - congratulated Bonus: "I am proud to give the reward of "2015 Red Herring 100 Global" winner to "Bonus Therapeutics", a company

that will help millions of peoples, all over the world. Thank you Bonus Therapeutics for your contribution to mankind, you do make a difference ".

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