Motivation

Regenerative Medicine:
Help the body heal itself

Help the body heal itself
Only faster
Technology

Assembly of 3D porous structures incorporating a pre-vascular network with several applications in tissue regeneration.

Biopolymer or biopolymer and ceramic

Pre-vascular network
Technology’s Applications

Veterinary

Dentistry

Orthopedics

Plastic Surgery
Problem

Bone volume lost due to trauma, tumors or congenital disorders.

**Slow regeneration** due to the lack of a **vascular network** to nourish the cells.

Brydone, 2010
Current practice

BONE GRAFTING

2.2 million surgical procedures every year.

Giannoudis et al., 2005
Autograft: The *gold standard* solution

- Multiple surgeries
- Donor site complications
- Limited availability
Other Solutions

Synthetic
- ORTHOVITA®
- SYNTHES®
- OSTEO TECH®
- Exactech®
- Stryker®

Allograft (cadaver)
- AlloSource
- MTF
- RTI BILOGICS

Proteins
- BIOMIMETIC
- OLYMPUS
- Medtronic

Long regeneration time
Limited availability
Very expensive

... Less than ideal solutions!
Ortho NovaOss

Faster bone regeneration (2-3x)
No rejection risk

Adjustable to the grafting site
Pre-vascular network
Always ready for use

“The product sounds extremely promising (...)
Charles N. Cornell, Clinical Director of Orthopedic Surgery
(Hospital for Special Surgery, New York, US #1 in Orthopedics)
# Ortho NovaOss vs Other Solutions

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>Autograft (patient’s own bone)</th>
<th>Proteins</th>
<th>Allograft (cadaver)</th>
<th>Synthetic</th>
<th>Ortho NovaOss</th>
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</thead>
<tbody>
<tr>
<td>Vascularization</td>
<td>Vascularized</td>
<td>Not vascularized</td>
<td></td>
<td></td>
<td>Pre-vascular Network</td>
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<tr>
<td>Shapable</td>
<td>Difficult</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td>Yes</td>
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<tr>
<td>Availability</td>
<td>2 surgeries</td>
<td>Very expensive</td>
<td>Limited</td>
<td>Unlimited</td>
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### Roadmap

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<th>Year</th>
<th>2011</th>
<th>2012</th>
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<th>2015</th>
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<td>Proof of concept</td>
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<td>Intellectual Property Rights</td>
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</table>

Animal tests!
“This indeed sounds very good”
Robert Meek
(Orthopaedic and Trauma, Southern General Hospital, Glasgow, UK)

“Your work elaborates exactly the area of interest for orthopedic surgeons”
Philipp Lichte
(Department of Trauma Surgery, University Hospital of the RWTH Aachen, Aachen, GER)

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