

Bio Tools

The goal of tissue engineering is tissue and organ reconstruction by using cells and scaffolds, through the combination of cell biology and biomaterials science. 3D scaffolds must be designed to fulfill physical requirements while also inducing and guiding cells to form functional tissues.

Scaffold physical properties control the material interaction with cells and direct the architecture of the forming tissues.

The use of dynamic cell cultures that mimic physiological conditions can trigger cell adhesion, proliferation, differentiation as well as synthesis of new extracellular matrix (tissue).

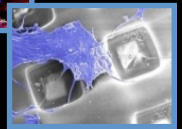
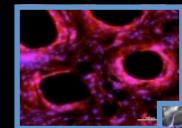
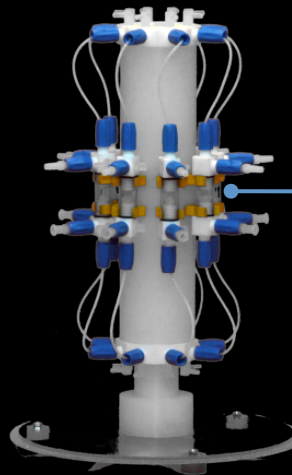
By using scaffolds, cells can be delivered to a specific anatomic site in the body. Thus, scaffolds represent the space where the tissue will develop and provide the physical bioactive support for cell growth.

Designs and Makes

- Scaffolds made of different materials and with different characteristics for cell cultures;
- Bioreactors for dynamic cell cultures;
- Computer controlled machines for scaffolds microfabrication.

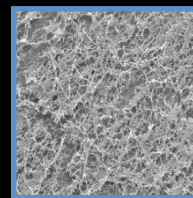
Bioreactors from Bio Tools

Bioreactors designed to apply controlled mechanical loading to cell seeded scaffolds. Also configurable as a mechanical testing machine.

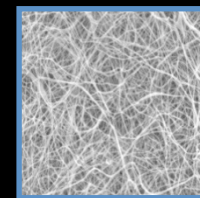


Perfusion bioreactors with multiple disposable reaction chambers allowing parallel biological tests.

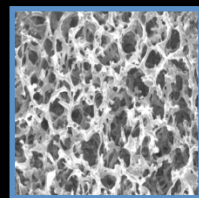
Scaffolds



Electrodeposited surface



Electrospun mesh



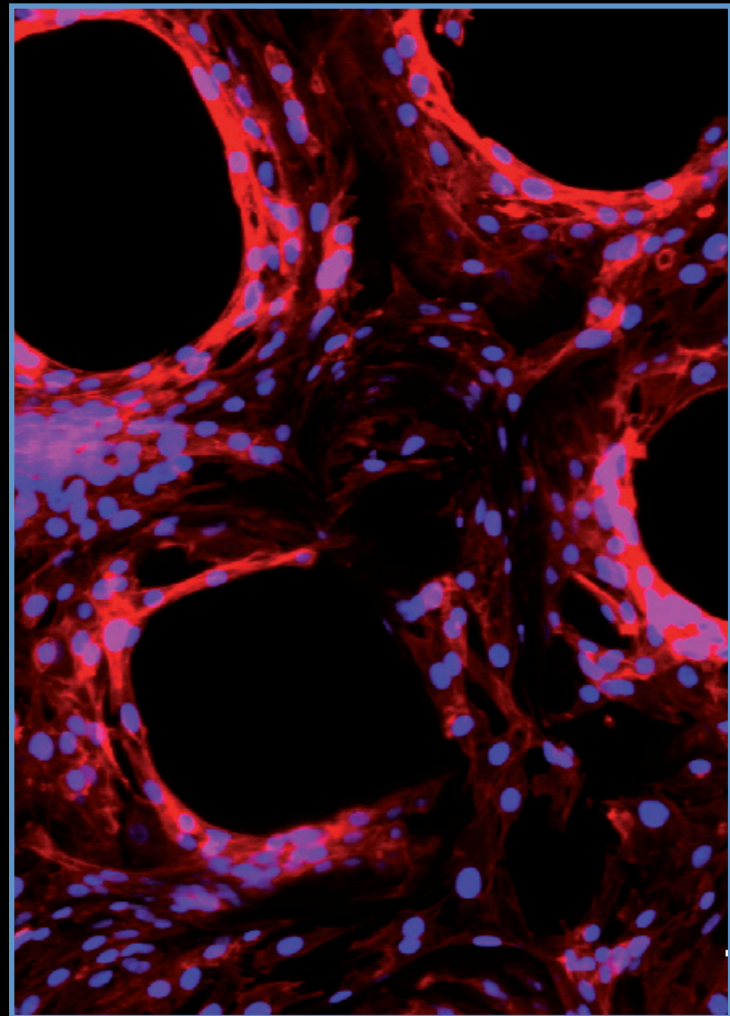
Salt leached sponge

Bio Tools

Bio Tools is a startup company of the University of Trento and of the EU Network of Excellence Expertissues, founded in the year 2010.

We research and develop bioreactors for cell cultures, microfabrication apparatus and 3D scaffolds with applications in tissue engineering and regenerative medicine.

Tools for biomedical applications



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