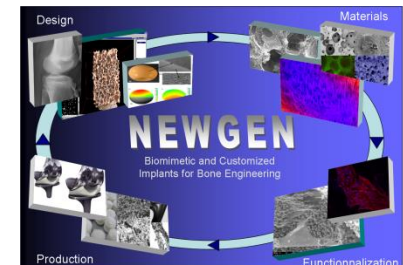


- **Complete denomination:** Adult Stem Cell Group, Institute of Biosciences and Medical Technology, University of Tampere
- **Location (city, country):** Tampere, Finland
- **Director:** Hannu Hanhijärvi (director of the BioMediTech)
- **Contact person in NEWGEN:** Adj. Prof. Susanna Miettinen or Dr. Sari Vanhatupa
- **Working Group involvement:** Member of the working group 4 (Prof. Fernando Monteiro)
- **Staff:** 4 Post Docs, 10 PhD students, 3 technicians, undergraduate students
- **Research topics:** Bone tissue engineering and clinical use of human stem cells isolated from adipose tissue, bone and dental tissues.
- **Researchers expertise:** Characterization and differentiation of adult stem cells, tissue engineering and bone regeneration, clinical applications and regulatory issues of advanced therapy medicinal products (ATMP)

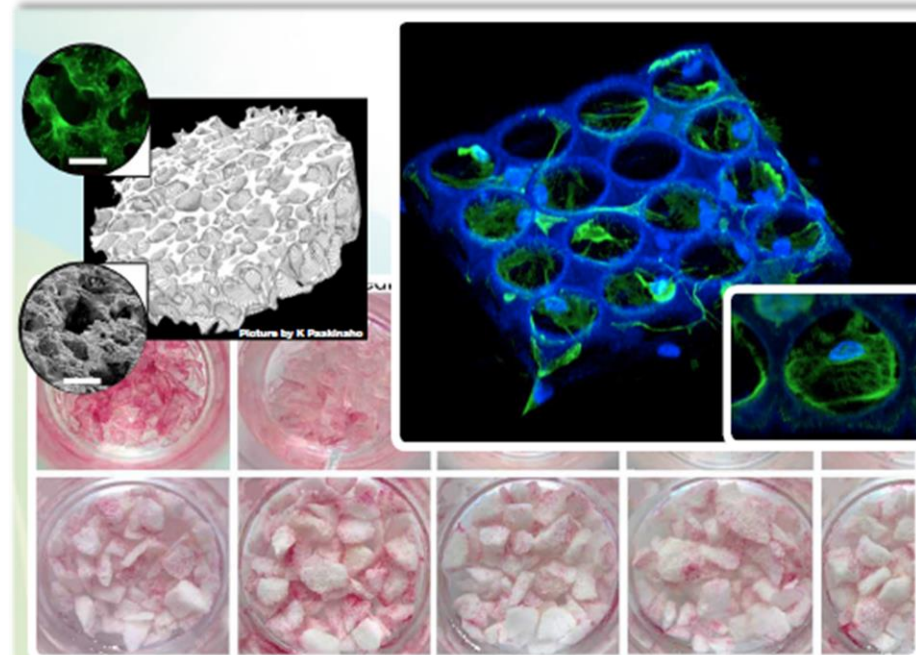
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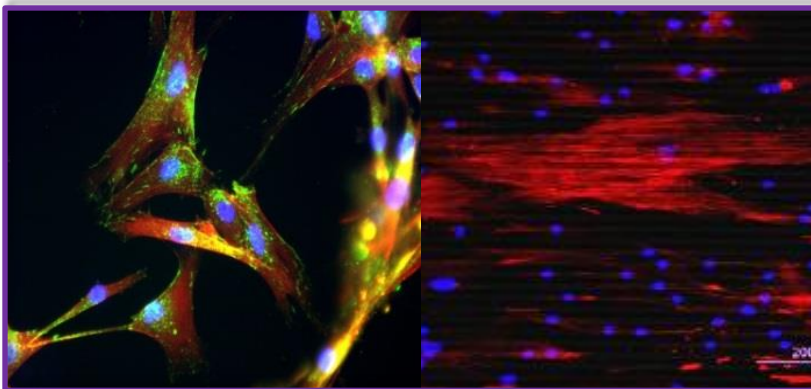


COST Action MP1301

- Cell tests with 2D and 3D biomaterials
 - human adipose stem cells (hASC)
 - other cell types
- Proliferation and cell viability assays in 2D and 3D environment
- Analysis of osteogenic differentiation
 - alkaline phosphatase assays (qALP)
 - mineralization
 - gene expression of osteomarkers
 - protein translation and production of osteomarkers

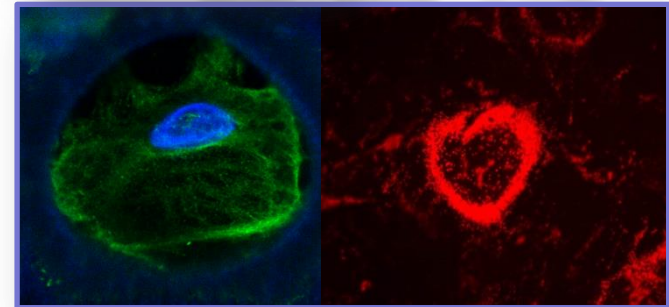
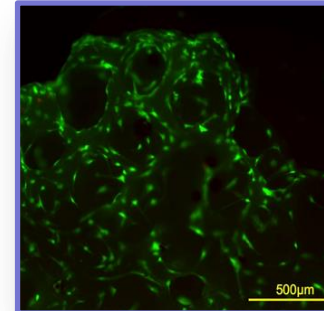
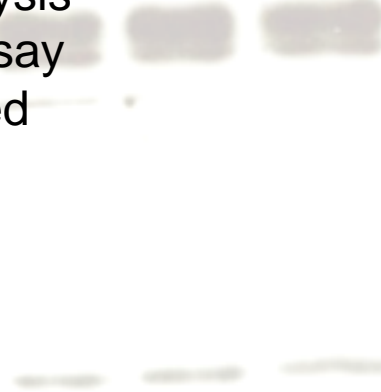


- Characterization of cells in different culture conditions and differentiation processes
- Cell attachment on the material surfaces
 - integrin and focal adhesions
- Cytoskeletal arrangements and morphological changes
 - actin filaments, alignment of cells due to surface topography
- Molecular mechanisms in stem cell differentiation

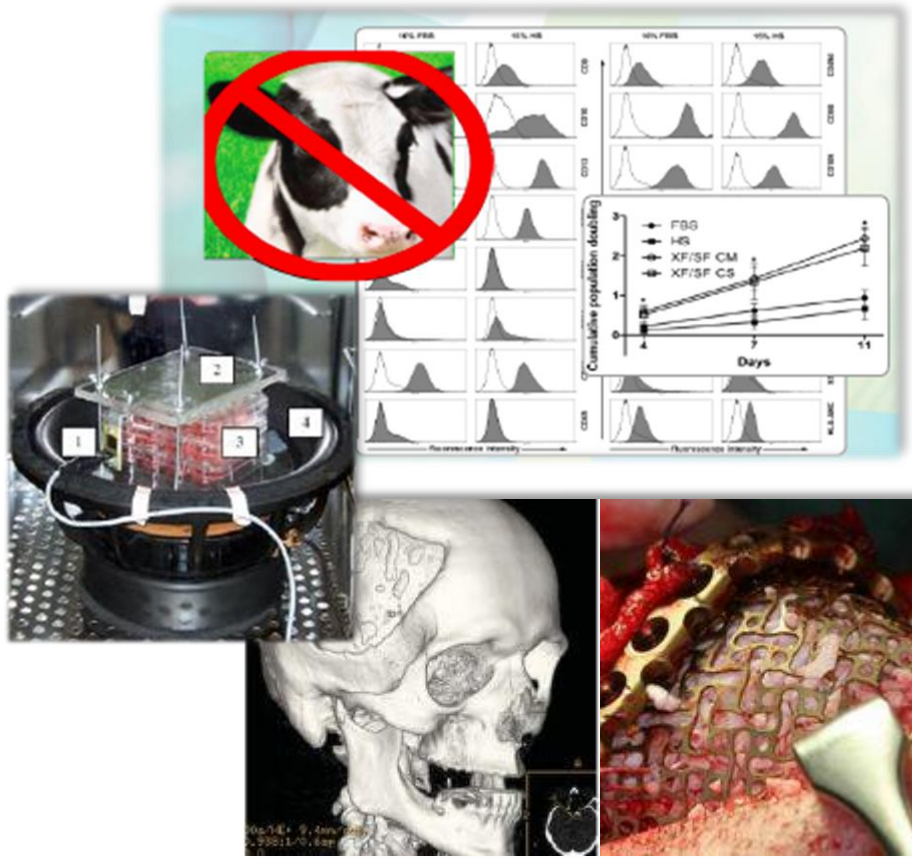


- LIVE/DEAD cytotoxicity analysis
- CyQuant cell proliferation assay
- qALP assays and Alizarin Red
- FACS analysis
- Immunocytochemistry
- Fluorescence microscopy
- Confocal microscopy
- Western blot
- μ CT
- hASC cultures
- osteoblast cultures
- GMP level clean rooms

- core facilities: <http://cofa.uta.fi/>



- Molecular mechanisms of stem cell differentiation; cell signaling
- Mechanical stimulations of stem cells
 - vibration loading
 - stretching devices
- Immunological tests
- Animal derived material free work flows
- Clinical cell therapy
 - bone defects in cranio-maxillofacial area
 - urinary incontinence
 - regulatory issues (with Regea Cell Center and Tissue Bank)



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