Upgrade your cell culture technique to the next dimension!

**U-CUP is:**
- efficient with many cell types and sources
- compatible with different 3D porous scaffolds
- easy and ready to use

**U-CUP offers:**
unprecedented performance in cell culture and tissue generation within 3D scaffolds through:
- uniform cell seeding
- efficient nutrition and waste removal
- improved reproducibility by minimizing manual operations

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**What happens in the bioreactor?**
Cells and medium directly perfuse through the pores of the 3D scaffold, in alternate directions.

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Porous scaffolds, providing a 3D template for cells to settle and grow or develop a tissue, are also available through our website.
CELLEC BIOTEK AG was founded as a spin-off of a lab of the University Hospital Basel, Switzerland, active in the world of Tissue Engineering and Regenerative Medicine. We are an international team of engineers, biotechnologists and clinicians. We develop and commercialize bio-reactors for 3D cell culture and tissue generation. Our products allow growing 3D living tissues, as advanced model systems for tissue development and drug testing, applied to life sciences and pharmaceutical research, or potentially as biological grafts for tissue and organ regeneration, applied to clinical translation in regenerative medicine.

**Options for cell or tissue culture in U-CUP**

**Cell retrieval:**
Cells are retrieved by enzymatic digestion then analyzed with typical lab equipment (e.g. RT-PCR, FACS)

**Tissue harvesting:**
Tissue constructs are employed as such for in vitro analyses (e.g. histology) or pre-clinical use (e.g. in vivo implantation)

**Scientific results using U-CUP bioreactor system**

10+ years of experience in bioreactors and 3D cell culture

**Engineered osteogenic tissue**

Braccini et al., Stem Cells 2005; Scherberich et al., Stem Cells 2007

**Engineered vasculogenic tissue**

Scherberich et al., Stem Cells 2007; Güven et al., Biomaterials 2011

**Engineered cartilage**

Wendt et al., Bioreology 2006; Santoro et al., Biomaterials 2010

**Engineered stroma for hematopoietic cells**

Di Maggio et al., Biomaterials 2011

**Engineered multi-cell co-culture model of bone organ**

Papadimitropoulos et al., Eur Cell Mater 2011

**Engineered decellularized extracellular matrix**

Sadr et al., Biomaterials 2012

**U-CUP technical specifications**

<table>
<thead>
<tr>
<th>System size</th>
<th>Scaffolds type</th>
<th>Scaffolds size</th>
<th>Working volume</th>
<th>Perfusion velocity</th>
<th>Cell density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack hosts up to 10 independent U-CUP bioreactors and fits into an incubator</td>
<td>Rigid or soft; ceramic, synthetic or natural polymer based</td>
<td>Thickness: 2 – 4 mm Diameter: 6 – 8 – 10 mm</td>
<td>6 ml to 14 ml per bioreactor</td>
<td>1 µm/s to 10 000 µm/s (or higher if required)</td>
<td>Wide range (up to tens of millions per bioreactor)</td>
</tr>
</tbody>
</table>

If you need advice to set up your experiments, you can contact us on: support@cellecbiotek.com