LifeTec Group

01 _ PRECLINICAL CRO

02 _ TECH & TRAINING

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# VASCULAR BIOREACTOR PLATFORM

ADVANCING RESEARCH, DEVELOPMENT AND TRAINING

# VASCULAR BIOREACTOR PLATFORM (VABIO)

*a versatile platform to assess the performance of vascular interventions, diagnostic devices and therapies*

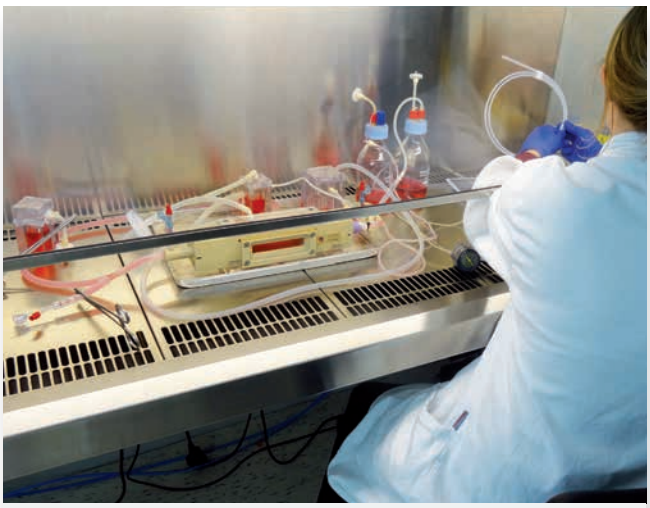
VABIO (VAscular BIOreactor) is an ex vivo platform to culture blood vessels, developed to bridge the gap between existing non physiological in-vitro studies and time consuming, costly in-vivo animal studies.

The LifeTec Group vascular bioreactor is an innovative platform that allows for both acute and long term studies on isolated blood vessels in a controlled and physiological environment.

The use of slaughterhouse tissue helps in decreasing the need for animal research, maintaining the importance of real biological conditions.

The platform provides control over hemodynamic parameters and allows for live monitoring of the main culture parameters, being compatible with several imaging modalities. VABIO is suitable for testing your vascular interventions, devices and therapies.

## FEATURES & BENEFITS



*"Setting up a long-term culture of a porcine blood vessel in LifeTec Group's vascular bioreactor"*

- Use of living blood vessels allows for true anatomy, tissue properties and biological response and physiology.
- In vivo-like hemodynamic conditions e.g. pulsatile pressure and flow allow for realistic settings.
- Full control over temperature, humidity and $CO_2$ level ensures physiological culturing.
- Detailed analyses can be performed on the vessel and on tissue response, e.g. combination of ultrasound imaging and tissue and cell-based assays.
- Tailor-made autoclavable components allow for meeting the high standards required for pre-clinical studies and prolonged vascular culturing.
- Culture parameters can be tuned to simulate different clinical scenarios on the vessel e.g. hypertension, diabetes, hypoxia.
- Size and structure allow for easy handling.
- Full accessibility makes it possible to intervene, access and monitor the tissue in real time.
- Full compatibility with ultrasound imaging and fluoroscopy.
- Optimized medium with blood-mimicking characteristics and automatic medium exchange.
- Sterile entry ports allow for catheter and device insertion or drug injection.

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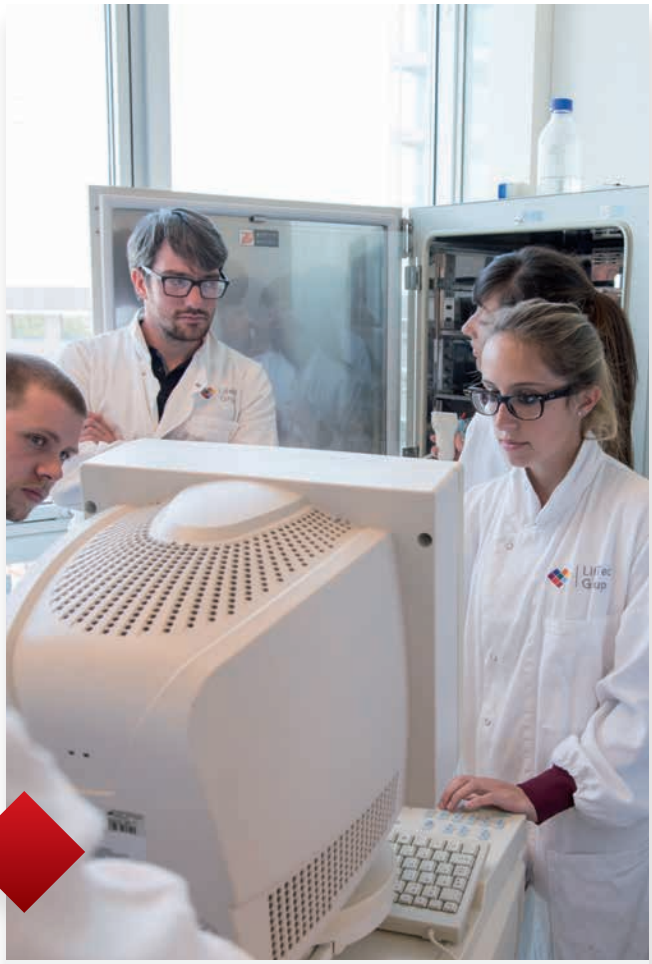
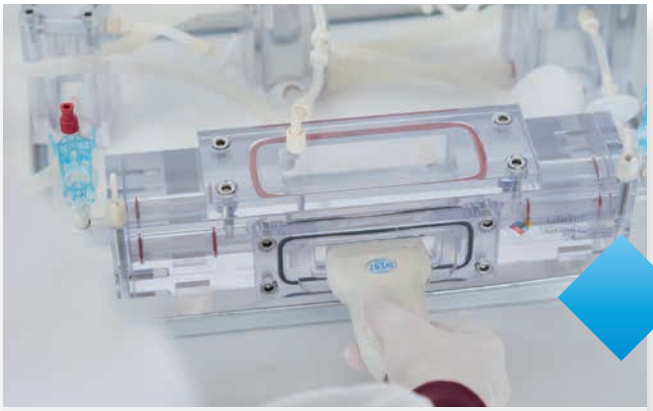


*"Skilled LifeTec Group personnel operate and monitor the vascular bioreactor platform"*

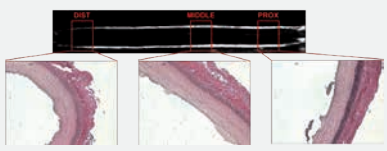


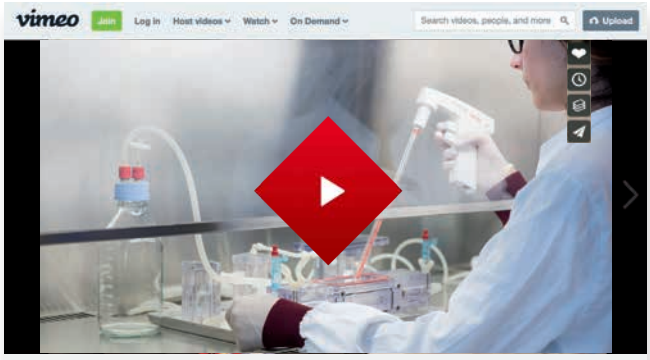
*"Ultrasound imaging on the blood vessel during the culture"*

## EXAMPLES OF USE

- Assess the performance of devices and therapies such as balloon angioplasty, stenting, drug elution, vascular grafts, aneurysm coiling and ablation.
- Evaluate the effects of pharmaceutical compounds and regenerative therapies on vascular function and viability.
- Assess and validate the performance of interventions and/or diagnostic tools and methods.


*"Ultrasound and histological analyses of cultured vessels"*



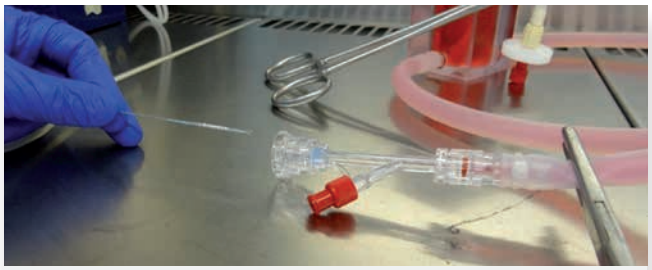




*"https://vimeo.com/lifetecgroup"*

# VASCULAR BIOREACTOR PLATFORM

*"VABIO is a platform as a service"*

## WHAT'S IN IT FOR YOU?



*"Stent implant, an application of the vascular bioreactor platform"*

- Obtaining relevant acute and long-term data in a realistic and highly controlled test environment.
- Innovative time and cost efficient testing method without the need for animal testing.
- Customized culturing protocols and analyses can be drafted according to your specific needs.
- Multi-functional analyses on prototypes will speed up the development of your novel products.

For further information  please contact: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Certification

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