

# Innovative method for producing analytical suspension cell lines

## Field of application

Analytical cell-based assays, used in diverse applications such as the risk assessment of chemicals as well as pharmaceuticals or the investigation of stem cell propagation stages, currently employ adherent cell lines.

## State of the art

Adherent cell lines come with serious drawbacks. Most importantly, extensive measures are needed for the propagation of said cells. Each transfer between culture dishes requires a cumbersome procedure, which is time-consuming and cost intensive. In addition, fetal calf serum (FCS) is needed as a supplement, potentially contaminating the cell culture and biological products obtained thereof. Furthermore, FCS is inconsistent in quality, which leads to massive problems in cell-based processes.

## Innovation

Scientists at the RWTH Aachen University invented a method of adaptation and stably growing any analytical (reporter) cell line to/in suspension and an optimized serum-free, chemically defined medium (CDM).

Briefly, the technique enables the versatile transition of an adherent cell line into a suspension cell line. On top of that, the latter can also be generated from stem cells or primary cells by maintaining the cell type- as well as organ-specific metabolic capacity. Thus, analytical cells can be stably cultured in a suspended state and optionally be converted to the desired 3D- or 2D-culture systems by adding tailor-made supplements. This enables high cell density growth and bulk applications towards tissue engineering as well as toxicity testing. Furthermore, high-throughput screening efficiency and cost effectiveness is profoundly enhanced.

Moreover, in contrast to adherent cell lines, the technique no longer requires fetal calf serum (FCS), which increasingly constitutes a cost driver and quality problem for analytical cell-based assays.

## Your benefits at a glance

- ✓ Significant increase of high throughput screening efficiency
- ✓ Fetal calf serum no longer required
- ✓ Custom-made suspension cell line is stable in growth, morphology and response
- ✓ Diverse field of application:
  - Risk assessment of industrial chemicals and pharmaceuticals (eco-/toxicity testing)
  - Investigation of tumor progression as well as metastasis (personalized medicine)
  - Tissue engineering

## Technology transfer

Technologie-Lizenz-Büro GmbH is charged with the commercialization of this technology.

The inventors currently set up the RWTH Aachen spin-off company EWOMIS.

## Patent portfolio

A European Patent (EP) application was filed on 31 August 2016.

## Contact

For further information please contact:

Dr. Egenhard Link

[link@tlb.de](mailto:link@tlb.de)

Technologie-Lizenz-Büro (TLB)

der Baden-Württembergischen Hochschulen GmbH

Ettlinger Straße 25, D-76137 Karlsruhe

Tel. 0721 79004-0, Fax 0721 79004-79

[www.tlb.de](http://www.tlb.de)

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