

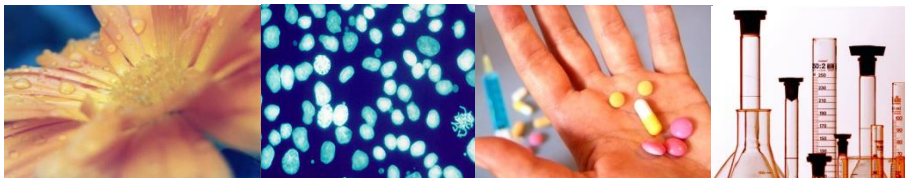


***Services
in
microRNA Research***



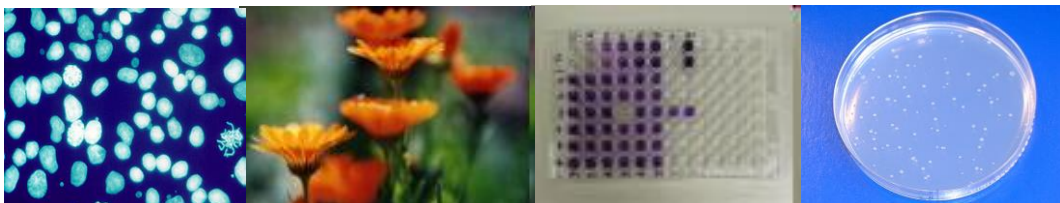
Company Profile

- Vivacell Biotechnology GmbH (Germany) is a privately owned contract-based research organisation (CRO) that provides specialised in vitro and in vivo models for testing and developing pharmaceutical, nutraceutical, phytopharmaceutical and health care products (compounds or extracts).
- VivaCell's preclinical services include standard protocols and protocols adapted to the needs of the customers using a variety of in vitro and in vivo systems.
- VivaCell is combining highly qualified cellular and molecular biology knowledge and expertise in various fields with a focus on immunology, CNS, oral care, nutraceuticals and natural products.
- At VivaCell, we offer you complete research projects from basic R&D up to pre-clinical research (GLP) in one hand. Our clients do not have to gather the research data from various CROs.
- We have demonstrated our expertise in a variety of research projects and scientific publications.
- VivaCell has a more than 5 years successful track record in miRNA research projects





- microRNAs (miRNAs) have recently been identified as important gene regulators. They exert their function by suppressing specific target genes at the post-transcriptional level. It has been estimated that miRNAs may be able to regulate up to 30 % of the protein-coding genes in the human genome.
- Studies have shown that miRNAs have a unique expression profile in cells that participate in innate and acquired immunity and have vital roles in the regulation of cell development, function and aging.
- Moreover, aberrantly expressed miRNAs can contribute to various pathological conditions, such as neurodegenerative disorders, cancer, cardiovascular disorders, metabolic disorders, aging, viral infection and inflammatory related disease conditions. In addition, they have shown to be useful as diagnostic marker and disease prognostic indicators.
- VivaCell has demonstrated its expertise in the microRNA research in various successful projects and publications. We offer our technological platform to study miRNA expression and their functions according to your needs. We offer the analysis of miRNA expression in a variety of different samples such as cell culture, blood components, serum/plasma, various cells and tissues.





VivaCell's services include for standard protocols and protocols adapted to the needs of the customers using a variety of indications specific *in vitro* and *in vivo* systems. Our miRNA analysis services include:

- **miRNA isolation from serum, cells, tissues or total RNA**

VivaCell can purify small RNA molecules, including miRNA in your sample using the best commercially available miRNA Isolation Kit. RNA quality control is proved prior to expression analysis by using Bioanalyzer or NanoDrop devices.

- **miRNA Microarray Expression Profiling**

VivaCell offers to study miRNA expression patterns providing comprehensive microRNA profiling service based on microRNA arrays in various types of cells, tissues, disease, developmental and aging states, providing insights into their role in gene regulation with tremendous accuracy and sensitivity. You send us samples and we deliver the data!

- **miRNA quantitation and expression (mature and precursor miRNAs) analysis using state of the art real time-PCR**

The amplification of a mature or precursor miRNA using specifically designed Taqman based primers, delivers excellent sensitivity in the quantification of miRNA. VivaCell provides a flexible assay for quantifying almost any miRNA as soon as the sequence of any known miRNA.



- **miRNA gain- and loss- of function studies using mimics or inhibitors by cell transfection**

VivaCell developed an in-house experimentally validated technique for transfecting miRNA mimics or inhibitors for the overexpression or knockdown of the endogenous levels of specific miRNA in variety of cells with improved transfection efficiency

- **miRNA target prediction using *in silico* approach**

VivaCell offers the expertise in using the computational approach to predict the miRNA target

- **miRNA target validation studies using plasmid based luciferase reporter assay.**

VivaCell offers miRNA target validation studies in cell lines using luciferase reporter assays with excellent accuracy.

Besides various cellular models, including human and rodents primary cell cultures, VivaCell offers highly specialised tissue models to approach the *ex vivo* situation..

- VivaCell offers the analysis of miRNAs on various research aims including cell differentiation and proliferation, aging, phagocytosis, apoptosis, migration, and many others

- Moreover, identifying the role of miRNA in parameters linked to inflammation and aging.



Our miRNA publications (please ask for full versions)

Kumar A, Bhatia HS, de Oliveira AC, Fiebich BL. microRNA-26a modulates inflammatory response induced by toll-like receptor 4 stimulation in microglia. J Neurochem. Dec;135(6):1189-202.

Stratz C, Nührenberg T, **Fiebich** BL, Amann M, Kumar A, Binder H, Hoffmann I, Valina C, Hochholzer W, Trenk D, Neumann FJ. Controlled type II diabetes mellitus has no major influence on platelet micro-RNA expression. Results from micro-array profiling in a cohort of 60 patients. Thromb Haemost. 2014 May 5;111(5):902-11.

Stratz C, Nührenberg TG, Binder H, Valina CM, Trenk D, Hochholzer W, Neumann FJ, **Fiebich** BL. Micro-array profiling exhibits remarkable intra-individual stability of human platelet micro-RNA. Thromb Haemost. 2012 Apr;107(4):634-41.

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