

The whole story of quantitative PCR – from Tissue Preparation to Bioinformatics

Press Release

The qPCR 2005 Event is organized jointly by Chair of Physiology, Technical University of Munich (TUM), and TUMTech-GmbH, Munich, Germany

The Physiology Weihenstephan at the Technical University of Munich with support from TUM-Tech GmbH have taken the initiative to organize the qPCR 2005 Event. From 5th – 9th September 2005 more than 350 scientists from 45 countries will exchange ideas, share experiences, and discuss the exciting future of the perhaps most powerful analytical technology ever developed in the life sciences area – **the quantitative real-time polymerase-chain-reaction (qPCR)**. Parallel to the symposium, an industrial exhibition takes place where 26 worldwide leading biotechnology companies will present their newest PCR technologies, e.g. real-time PCR cyclers, nucleic acid extraction robots, DNA and RNA detection and amplification chemistry, as well as software applications.

qPCR, is an improved technology based on PCR that was awarded 1993 years Nobel price in Chemistry. Using qPCR the amount of target nucleic acid in a complex sample can be determined with high precision, absolute correctness, excellent specificity and the ultimate sensitivity of detecting even single molecule. The technique has revolutionized all molecular sciences and diagnostic applications. Hospital laboratory tests that used to take hours, sometime days to perform, and required the handling of hazardous chemicals, can today be made quickly in fully automated systems. Conference presentations will show that in near future, using improved instrumentation, sample preparation, extraction, and qPCR application will take a minimum of time and the test results will be delivered while waiting. The combination with reverse transcription enables determination of mRNA and widely opens the window for “*Transcriptomics*” – the first step of gene expression and functional genomics.

The subtitle of the conference is: **The whole story of quantitative PCR – from Tissue Preparation to Bioinformatics**
In the meeting the most critical steps in real-time qPCR will be discussed in detail. More than 50 invited international speakers from all over the world present their knowledge around qPCR. There is almost no field in life sciences not open to many qPCR applications for nucleic acid analysis.
Presentations at the conference are divided in specialized sessions, starting with pre-analytical steps, e.g. improving nucleic acid extraction and stabilizing. In the biggest section, called new applications, the focus is on single-cell and single-molecule qPCR, development of new detection and application methods, using various multiplexed dyes in qPCR, and verification of array results via qRT-PCR. Parallel session will show how sampling and amplification performance can be increased by optimization and standardization procedures, e.g. in the tropics or in cancer diagnostics. Totally new normalization techniques will be presented on the basis of ALU repeats or total DNA. Further developments of qPCR technology focus on miniaturization, higher throughput, cost efficacy, validity, and flexibility.
Accurate GMO quantification in food samples, identification and quantification of pathogens in plant/ animals are further key topics. Goal is to develop fast, sensitive, and highly reproducible GMO real-time amplification methods.
A highlight of the symposium are the qPCR Bioinformatics. New algorithms and quantification software will be presented to improve the real-time data acquisition, amplification efficiency calculation, detection of outliers, normalization of gene expression, and multi-factorial data management of real-time results (e.g. qBASE, REST, DATAN, KOD).

In connection with the symposium two independent practical qPCR workshops take place from 7th – 9th Sept.: TATAA Application Workshop and the qPCR Matrix Workshop. Application workshop is hosted by the TATAA Biocenter (<http://www.tataa.com>), which is the leading qPCR service provider in Europe. TATAA is associated with Chalmers University of Technology and the University of Göteborg, Sweden. The 11 sessions of the Matrix Workshop will present a broad variety of new cyclers, hot technologies and detection chemistries. The Matrix Workshop sessions are hosted by the R&D scientists from biotechnology companies and by international renown molecular biologists.

The Physiology Weihenstephan at the Center of Life and Food Sciences at Technical University of Munich, chaired by Prof. Heinrich H. D. Meyer, is a leading authority in the molecular physiology of mammalian species. Cutting edge biochemical and molecular biology techniques are established for basic and applied research on the regulation of reproduction, lactation, immunology, and growth. Both traditional endocrinology and paracrine regulations are studied in numerous tissues. Dr. Michael W. Pfaffl is developing qRT-PCR methods, software algorithms, and tools for quantitative gene expression analysis. <http://www.gene-quantification.info>

For more information about the qPCR 2005 Event see <http://qpcr2005.gene-quantification.info> or contact Dr. Michael W. Pfaffl qPCR2005@wzw.tum.de or Dr. Ulrich Wild ulrich.wild@tumtech.de