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LinRegPCR and Biogazelle's qbase^{PLUS} speak RDML to process qPCR data

While the practical performance of a quantitative PCR experiment is relatively straightforward, many users struggle with the data-analysis. It is therefore not surprising that user-friendly software tools emerged and became indispensible for data handling. Such tools help applying validated procedures and guide the experimenter to highest quality results.

In 2009, the Minimum Information for Publication of Quantitative Real-Time PCR Experiments (MIQE) guidelines were introduced to ensure the relevance, accuracy, correct interpretation and repeatability of qPCR experiments. Biogazelles's qbase^{PLUS} is the only third party qPCR data-analysis software that is MIQE compliant. qbase^{PLUS} offers a flexible solution for state-of-the-art data-analysis rendering true confidence in the final results. The software can also import and export RDML data files. According to the MIQE guidelines, the open RDML file format is a recommended option and is becoming the industry standard for qPCR data exchange and storage. As of today, this RDML format enables the communication between LinRegPCR and qbase^{PLUS}.

LinRegPCR is an independent program for primary analysis of raw qPCR data. It calculates Cq and PCR efficiency values based on fluorescent amplification curves. Jan Ruijter and colleagues first launched LinRegPCR in 2003, for the analysis of quantitative PCR data based on PCR efficiency values derived from individual amplification curves (so-called single curve efficiency estimation). As of today, LinRegPCR can export raw data, baseline, efficiency values, Fq and Cq values to RDML. Such an RDML file can easily be imported in qbase^{PLUS}, combining raw qPCR data processing (from LinRegPCR) with relative quantification and statistical analysis (in qbase^{PLUS}) in a continuous workflow.

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About LinRegPCR and Jan Ruijter

Jan Ruijter is trained as a medical biologist and worked in endocrinology, neurobiology and ophthalmology. He is currently appointed in the Department of Anatomy, Embryology & Physiology (Academic Medical Centre, Amsterdam, the Netherlands) where he is heading a research group studying the relation between gene expression and the development of the heart with molecular, image analysis and 3D reconstruction techniques. The statistical analysis of these research data resulted in the development of the LinRegPCR program for the analysis quantitative PCR data based on PCR efficiency values derived from individual amplification curves.
After the first implementation of LinRegPCR in 2003, when efficiency values per well were used, it was shown that the mean of those efficiency values per amplicon greatly reduced the variation in the results. Moreover, it was shown that the fluorescence baseline significantly affected the estimated PCR efficiency. In 2009 a version of LinRegPCR based on the mean efficiency per amplicon was released, which in 2010 was extended to the use of different DNA monitoring chemistries. In 2012 LinRegPCR was made RDML compliant.

The LinRegPCR program, together with a comprehensive manual, can be downloaded from http://LinRegPCR.hfrc.nl

About Biogazelle

Biogazelle is the real-time PCR data analysis company, built upon a decade of experience in real-time PCR experiment design, assay development and data-analysis. Groundbreaking papers published by Biogazelle's founders Jo Vandesompele and Jan Hellemans on normalization of gene expression and data-analysis have been cited more than 3,500 times.

Biogazelle's expert knowledge and experience form the basis for its complete solution portfolio. The products and services are designed to accommodate the needs of all academic and industrial qPCR users.
Biogazelle's primary focus is providing state-of-the-art qPCR data-analysis software that guides users towards sound and powerful data-analysis. Other activities include 2-day qPCR training courses and consultancy where specialist knowledge is needed. Biogazelle is also an experienced service provider for academic and industrial customers, amongst others providing whole genome microRNA and long non-coding RNA gene expression profiling and data-analysis service.

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