

Schedule for TATAA Biocenter qPCR Application Workshop at the qPCR 2007 Event 29th – 30th March 2007

2-day qPCR Core Module

29th March 2007 - qPCR introduction, assay design and optimisation

- 09.00-11.00 Basic PCR and qPCR theory and applications
-Amplification and detection
-Detection chemistries
-Selected applications
- 11.00-12.00 qPCR experiment
-Practical considerations when preparing PCR reactions
-Demonstration of qPCR software
- 12.00-13.00 **LUNCH**
- 13.00-13.45 Primer and probe design and considerations
-What does primer design affect?
-What are primer dimers?
-How do we minimize formation of primer dimers?
-Design of Molecular Beacons and TaqMan probes
- 14.00-14.45 Data analysis
-How does qPCR software process the data?
-How are standard curves used and created?
-How are melt curves used?
-Principle of quantification using standard curves
-Principle of relative quantification
- 14.45-15.30 Analysis of performed qPCR experiment
- 15.30-16.15 Optimization of qPCR protocols
-What parameters can/should be optimized?
-An optimization strategy
-Multiplexing possibilities and problems
- 16.30-17.30 Principle of RT and different RT priming strategies
-Pros and cons of different methods
- 17.30-17.45 Discussion and Q&A
- 17.45 End of qPCR course day 1.

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30th March 2007 - Quantification and Normalization

- 09.00-09.45 Normalization of qPCR data
-What levels of normalization can be used?
-How to choose a good reference gene?
- 10.00-10.45 qPCR quantification strategies
-Standard curves
-Relative quantification
-How to compensate for inhibition in biological samples
- 10.45-12.00 **Experiment comparing different quantification strategies**
-Relative and standard curve quantification
- 12.00-13.00 **LUNCH**
- 13.00-14.00 Absolute Quantification strategies
-What is a suitable standard?
-Use of internal controls
- 14.15-15.15 Quantification calculation examples
-What effect will efficiency have on quantification?
-Quantification methods, and equations
- 15.15-16.45 **Analysis of experimental data**
-Differences in quantifications strategies
-Pros and cons of different methods
- 16.45-17.00 Discussion and Q&A
- 17.00 End of qPCR course day 2

Lunch and coffee are included in the course fee. The courses are focused on practical issues for qPCR and are partly hands-on, performed by the course participants in the lab (marked in blue).

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