ThermoFisher SCIENTIFIC

GENE EXPRESSION UNIVERSITY

Tuesday, Oct 6th: qPCR 101: Introduction to Real-Time PCR

Presenter: Marcia Slater

This webinar will review the basics of Real-Time PCR. Topics include:

- How Real-Time PCR is different from traditional end-point PCR
- Chemistry choices of TaqMan and SYBR Green; 1-step and 2-step
- How a passive reference works to improve data quality
- Selecting an endogenous control
- The mathematics of using ddCt to determine changes in gene expression
- Other tips for running impactful qPCR experiments

Thursday, Oct 8th: Real-Time PCR Assay Design Best Practices

Presenter: Kevin Kelly

Real-time PCR is an extraordinarily powerful tool that is widely used for a multitude of applications. But the quality of your real-time PCR data is only as good as the quality of your assay. This webinar discusses important considerations to keep in mind when it comes to assay design and will showcase several tools available through Thermo Fisher Scientific to help you to design and choose assays that enable your success performing real-time PCR.

Tuesday, Oct 13th: Real-Time PCR Basics Part 2: How to Produce the Best Quality Data

Presenter: Kevin Kelly

Gene expression quantification is one of the most commonly performed, yet complex and demanding real-time PCR applications. But how do you know your results are accurate? This webinar discusses

fundamentals of real-time PCR technology, as well as the challenges and vulnerabilities of gene expression experiments, and how to address them.

Thursday, Oct 15: Set-Up and Analysis of a Real-Time PCR Experiment Using the QuantStudio 3 or QuantStudio 5 Software

Presenter: Lihong Zhang

This webinar will demonstrate two methods to set-up and analyze gene expression data in the QuantStudio 3/5 instrument software: the relative standard curve method and the Delta-Delta-Ct method. It will include designating endogenous controls and reference samples. The software contains several features that allow a researcher to determine the quality of the amplification data. You will learn how to evaluate the quality of your qPCR data and how to use troubleshooting tools in the software when needed.

Tuesday, Oct 20th: Analyzing qPCR Data in Thermo Fisher Connect

Presenter: Maura Andrews

This presentation will focus on Real-Time PCR gene expression analysis using Thermo Fisher Connect – a free online platform for cloud-based data storage, scientific analysis applications and peer collaboration tools. It offers advanced tools for analyzing Real-Time PCR data. In this session, we will walk through uploading data, creating projects for collaboration with peers, and online review of data using the Relative Quantification app

Thursday, Oct 22th: Getting More from Your Real-Time PCR Machine: It Can Do So Much More than Gene Expression!

Presenter: Min Le

This seminar reviews DNA, RNA, and protein applications that can be performed on Real-time PCR instruments. DNA applications include: Single Nucleotide Polymorphism (SNP) genotyping; Copy Number Variation (CNV) analysis; rare mutation detection (castPCR and digital PCR); and High Resolution Melt (HRM) analysis. RNA applications include: microRNA profiling; gene expression and lnc RNA analysis. Protein applications include: protein quantification assays and Protein Thermal Shift (PTS) analysis.

Tuesday, Oct 27th: Strategies to Confirm Accuracy of Gene Expression Studies

Presenter: Zana Kapustina

As gene expression data is generated at an increasing pace, it can be tempting to assume that "all data is valid." The recent retractions in peer-reviewed journals remind us of the value of confirming data validity prior to downstream analysis and publication. Zana Kapustina, doctoral researcher at Thermo Fisher, will share current techniques to confirm gene expression validity for qPCR and NGS gene expression studies.

Thursday, Oct 29th: Multiplexing in Real-Time PCR Experiments

Presenter: John Pfeifer

Multiplexing in real-time PCR (Polymerase Chain Reaction) is the amplification and detection of multiple gene targets in the same reaction. Multiplexing is more complex than only selecting reporter dyes for each probe. These complexities increase with the number of gene targets being multiplexed. This presentation focuses on what is needed to design a real-time PCR multiplex and test it to ensure it is working properly.

ThermoFisher SCIENTIFIC

GENE EXPRESSION UNIVERSITY