

**Botaniker Tagung 2024: Workshop 2 on 16<sup>th</sup> of September 2024, 12:45 AM – 1:45PM**

## **Assay Design Guidelines for qPCR and dPCR**

PCR is a cornerstone of scientific research, with applications that reach far beyond agarose gel analysis. In this comprehensive workshop, participants will gain expertise in designing PCR assays and exploring chemical modifications of oligos. Additionally, the fundamental principles of quantitative PCR (qPCR) and digital PCR (dPCR) will be thoroughly explained.

### **Workshop Content**

#### **In silico design**

- Principles of primer and probe design
- MIQE guidelines
- Optimal Fluorophore and quencher combinations
- In silico design assay design workflow and parameters
- Multiplexing strategies

#### **Interpretation of PCR data**

- Melt curve interpretation
- Primer and probe concentrations and their impact in the analysis
- Unspecific binding and its interpretation in qPCR and dPCR
- SYBR Green vs TaqMan

#### **Post PCR analysis methods**

- qPCR: AUC-value,  $\Delta\Delta Cq$
- dPCR: Copies per  $\mu$ l
- housekeeping genes / calibrators
- Copy number variation measurement (CNV) in dPCR vs. southern blot

### **Target group**

Researchers from all fields.

### **Speaker**

Dr. Martin Becker, Principal Application Scientist Stilla Technologies, is an expert in PCR assay development, GMO production, and gene editing in crops.