CFX Maestro™ Software

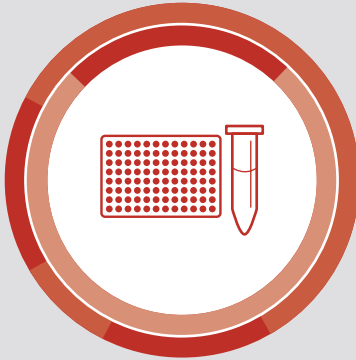**For Bio-Rad CFX Real-Time PCR Instruments**

BIO·RAD

CFX Maestro Software is real-time PCR software that not only collects data, but understands your data and what you want to do with it, combining data collection, statistics, and publication tools into one comprehensive package.

Whether you are a novice researcher running your first qPCR experiment, or are analyzing thousands of samples across hundreds of runs, CFX Maestro was built with your needs in mind and to work in whatever way is best for you.

IT'S qPCR SOFTWARE **THAT WORKS** LIKE YOU DO

CFX Maestro Software for CFX Real-Time PCR Instruments

An easy to learn, yet powerful system for push-button data collection, data analysis, and data visualization.

Easy Plate Setup and Reference Gene Selection
- Quickly set up multivariate experiments with both technical replicates and biological groups
- Identify reference gene stability and select ideal reference genes
- Simplify experimental design and primer design with PrimePCR™ Assay integration

Push-Button Data Analysis and Statistics
- Automatically calculate Cq values and reaction efficiency
- Easily perform statistical analysis including *t*-tests, and one- and two-way ANOVA
- Efficiently analyze multi-plate studies

Publication-Ready Graphics
- Visualize your results in bar charts, box and whisker graphs, clustergrams, and volcano plots
- Edit and annotate graphs and export for publication or presentations

EASY PLATE SETUP
AND REFERENCE GENE SELECTION

Intuitive Plate Setup

CFX Maestro is built to help you quickly get started collecting data. Set up plates using a visual interface that color codes replicates for confirmation of accurate layout. Multivariate studies can be designed with both technical replicates and biological groups.

Plate setup can be performed before, during, or even after your real-time PCR run is complete — at whatever time is most convenient for you.
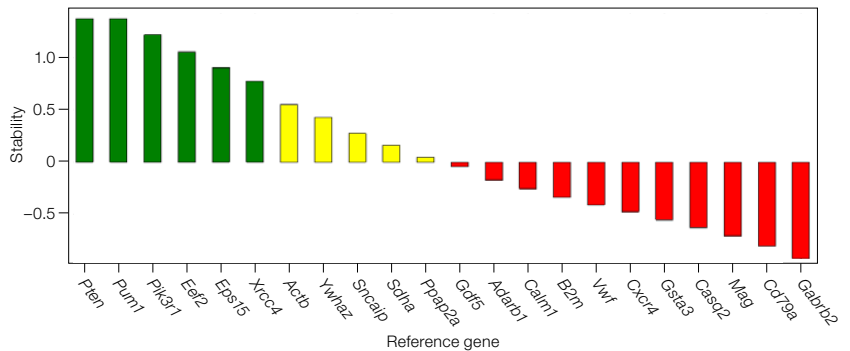
Select Your Ideal Reference Genes

Stable reference genes are essential when performing gene expression analysis. CFX Maestro Software's Reference Gene Selection Tool will compare the stability of multiple reference genes, providing you with information about which reference genes are most likely to be expressed at consistent levels in all your samples throughout your runs, helping to ensure reliable relative expression data.

PrimePCR Assay Integration

Want to simplify your primer design, run design, and setup? With CFX Maestro and PrimePCR it's easy. Drag and drop a PrimePCR run file into CFX Maestro to automatically populate plate setup and run conditions. Post run, ensure run quality with included PCR controls (no template, gDNA, and RT controls).

Quickly visualize and confirm plate layout. Wells can be color-coded by sample, by biological replicate, and by technical replicate.

Automatically identify ideal reference genes. Results of a PrimePCR Reference Gene Plate analysis, showing the ideal and most stable reference genes in green.

PUSH-BUTTON
DATA ANALYSIS
AND STATISTICS

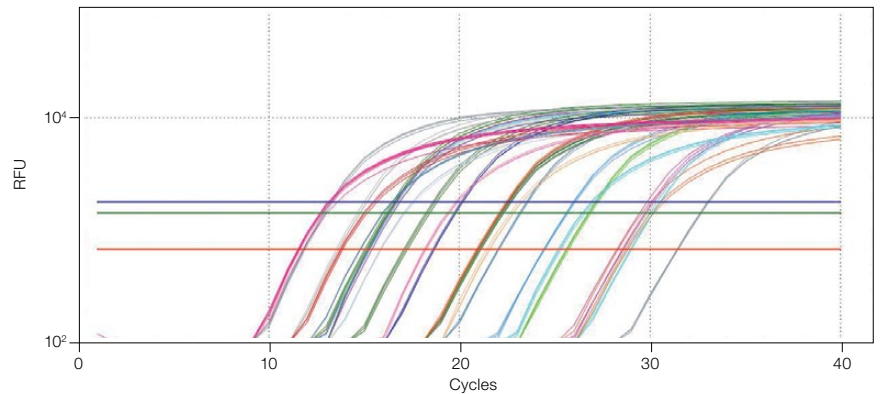### Automatic Cq and Efficiency Calculation

CFX Maestro Software's tools allow you to view, analyze, and understand your data. A baseline threshold will automatically be set for each reaction target to calculate Cq value, or you can adjust thresholds yourself by simply clicking and dragging the threshold line. If a standard curve is present, CFX Maestro will automatically calculate reaction efficiency.
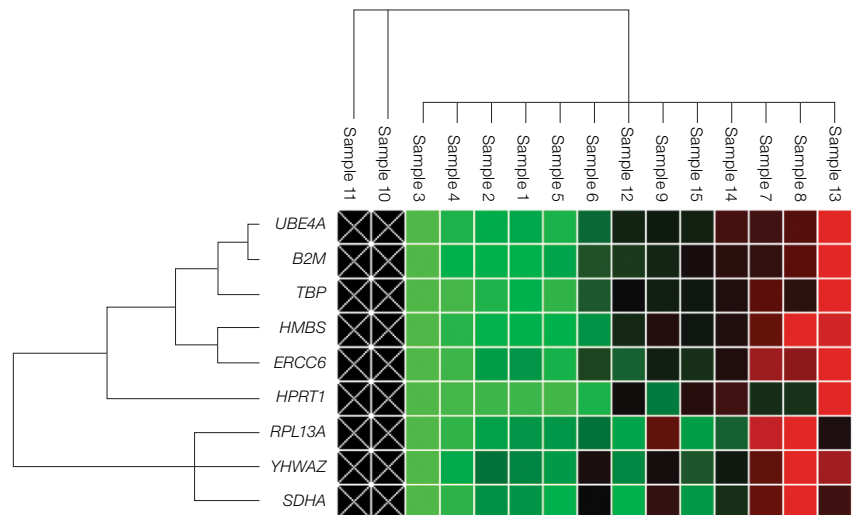
Statistical Analysis in Seconds

With just a few mouse clicks you can perform allelic discrimination, view normalized expression levels, perform *t*-tests, or analyze your data with one- and two-way ANOVA.

Streamlined Multi-Plate Study Analysis

CFX Maestro can also automate data analysis for multi-plate studies. Combine dozens or even hundreds of plates using the Gene Study function and perform statistical analysis on all your data in aggregate, without the need to export and combine large datasets in a separate software program.

View each individual amplification trace and color code them by target, sample, or randomly by well. RFU traces and baseline thresholds for three different target genes.

Combine multiple runs for analysis. Clustergram showing gene expression levels grouped by hierarchical similarity in a 15-plate study.
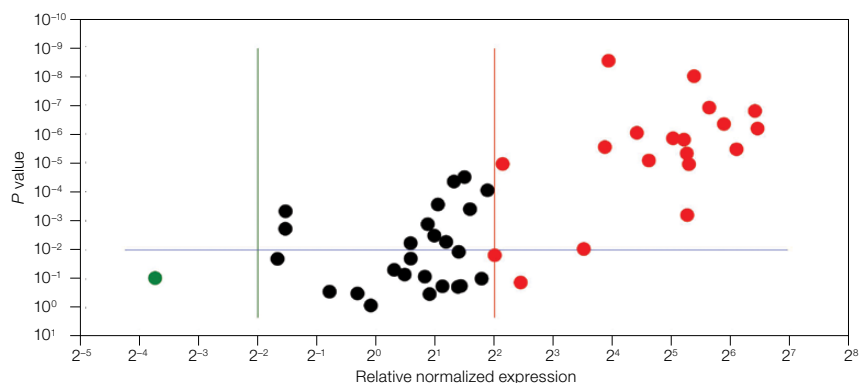
PUBLICATION-READY
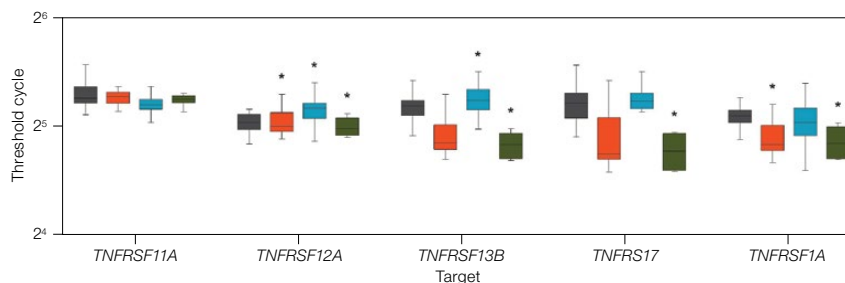# GRAPHICS

Multiple Data Visualization Options

Visualize your data to suit your needs using bar charts, dot plots, box and whisker plots, and more. Change colors, fonts, titles, and legends and annotate your graphs with *P* values, text, and arrows to call out specific data.
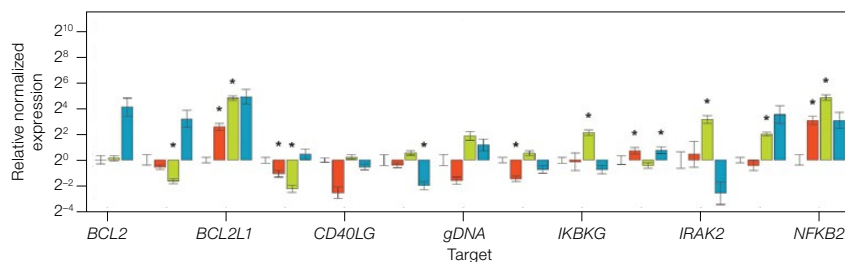
Export High-Resolution Graphics

With CFX Maestro Software, creating publication-quality images for posters, presentations, or journals is painless. Simply choose which data view to export then set your image size and resolution, and CFX Maestro will generate a beautiful graph of your data in JPEG, png, or bitmap format.

Volcano plots support rapid identification of genes of interest with statistically significant fold-level changes.
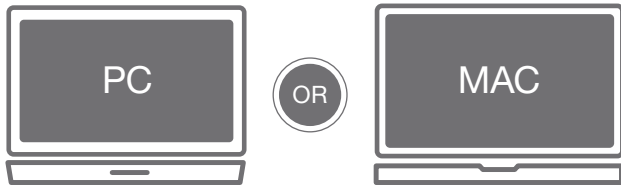

Box and whisker plots provide a visual representation of data medians and quartiles.

Bar charts provide a standard means to view relative normalized gene expression levels, and can also be annotated with *P* values to provide statistical significance of your data.

WORK ANYWHERE
ON PC OR MAC

Work on your own computer, anywhere, without the need for an Internet connection. CFX Maestro Software for Mac now lets both PC and Mac users utilize the integrated data analysis, statistics, and publication tools of CFX Maestro.

REGULATORY
COMPLIANCE TOOLS

U.S. FDA 21 CFR Part 11 Tools

CFX Maestro Security Edition provides tools to support 21 CFR Part 11 compliance, such as:

- Mandatory password-protected log-in — log-in required; administrator sets user privileges

- Time- and date-stamped audit trails — edit information is tracked and saved with each specific data file for easy tracking

- Electronic signatures — multiple electronic signatures can be applied to a single file at any editing step

- File encryption — file cannot be opened or edited by another program, minimizing risk of data corruption

INSTRUMENT INTEGRATION
AND HIGH-THROUGHPUT
SOLUTIONS

Designed to Work with CFX Real-Time PCR Instruments

CFX Instruments feature:

- Optical design that ensures superior data uniformity

- Block controls for accurate target temperatures

- 2–5 color multiplexing

- Thermal gradient to optimize run temperatures

LIMS and Automation System Integration

CFX Maestro and CFX Real-Time Instruments are designed for high-throughput qPCR:

- Data export into a designated LIMS folder

- Remote notification of run completion with attached data file

- Multi-instrument connectivity

- Automation systems configuration with the API Reference Guide

Specifications

CFX Maestro Software

Operating systems	Windows 7, Windows 8, Windows 10, Mac OS X El Capitan, Mac OS Sierra
Memory	Minimum 1 GB
Data analysis modes	PCR quantification with standard curve
	Melt curve analysis
	Gene expression analysis by relative quantity (ΔCq) or normalized expression ($\Delta\Delta$Cq) with multiple reference genes and individual reaction efficiencies
	Data analysis options include bar chart, box and whisker plot, dot plot, clustergram, scatter plot, volcano plot
	Statistical analysis with t-tests, one-way ANOVA, and two-way ANOVA
	Multiple file gene expression analysis for comparison of an unlimited number of Cq values for multi-plate studies
	Allelic discrimination
	End-point analysis
Image export	Image size: any
	Resolution: 72–600 dpi
	Image format: jpg, png, bmp
Data export	Save, copy, and print all spreadsheets and data from right-click menu
	Export specified data in multiple formats
	Copy and paste into Microsoft Word, Excel, or PowerPoint file
	Customizable reports containing run settings, data graphs, and spreadsheets can be printed directly or saved as PDFs

Ordering Information

Catalog #	Description
12004110	**CFX Maestro Software**
12004128	**CFX Maestro Software for Mac**
12005258	**CFX Maestro Software**, **Security Edition**, includes 1 license
12005259	**CFX Maestro Software**, **Security Edition**, includes 5 licenses
12005260	**CFX Maestro Software**, **Chinese Edition**
12005678	**CFX Maestro Software**, **Russian Edition**
1855195	**CFX96 Touch™ Real-Time PCR Detection System**
1855485	**CFX384 Touch™ Real-Time PCR Detection System**
1855201	**CFX Connect™ Real-Time PCR Detection System**
1854095	**CFX96 Touch Deep Well Real-Time PCR Detection System**

Visit **bio-rad.com/web/CFXMaestro** for more information.

Bio-Rad's real-time thermal cyclers are covered by one or more of the following U.S. patents or their foreign counterparts owned by Eppendorf AG: U.S. Patent Numbers 6,767,512 and 7,074,367.

Miscrosoft, Excel, Powerpoint, and Windows are trademarks of Microsoft Corporation. Mac and Mac OS are trademarks of Apple Inc.

Bio-Rad Laboratories, Inc.

Life Science Group