Fast, Accurate, Fluorescence Quantitation of FFPE Samples from Maxwell® 16 using QuantiFluor® ONE dsDNA Dye and the Quantus™ Fluorometer

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1. Introduction
Nucleic Acid quantitation improve success in a variety of downstream assays such as PCR, Cloning, Next Gen Sequence (NGS), and DNA transfections.

Some sample types, such as formalin-fixed paraffin-embedded (FFPE) tissues, contain low levels of nucleic acid due to their harsh sample preservation methods.

Absorbance quantitation methods, such as NanoDrop®, lack adequate detection sensitivity as well as target-specificity for nucleic acid due to their harsh sample preservation methods.

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Spurious nanograms to micrograms of RNA are common in FFPE samples, so accurate quantification is important to downstream applications.

Fluorescence methods provide 200 times more sensitivity than NanoDrop® Spectrophotometry, allowing researchers to accurately quantify these samples.

Figure 1. dsDNA quantitation range comparing QuantiFluor® Dyes with competitor methods.

2. Quantus™ Fluorometer
The Quantus Fluorometer is a dual-channel, single-tube fluorometer designed for high sensitivity and broad dynamic range for low and high-level nucleic acid quantitation.

Developed with Promega’s QuantiFluor® Dyes, the system provides plug-and-play integration for easy quantitation, yet remains an open-use platform for non-Promega dyes.

The single-tube format for 0.5mL PCR tubes requires no added accessories, and it’s small footprint saves valuable bench space.

Quantus is cost effective, bringing users high value.

Figure 2. The Quantus™ Fluorometer and QuantiFluor® Dye

3. Intuitive and Easy to Navigate
The color LCD display makes navigation very simple.

Quantis calculates your sample concentration, so you don’t have to. Simply input the volume of sample, select your preferred unit of measure, and quantify your sample.

Easy to use interface
- Sample concentration display
- Volume and units selection
- Select / Create protocols
- View / Export results
- Optional PC-software

Figure 3. The Quantus™ Fluorometer Main Screen.

4. Simple Workflow provides Plug-and-Play Setup for Promega QuantiFluor® Dyes
Select from a menu of pre-programmed protocols, or create your own. Each protocol can be easily calibrated using a simple process.

Quantis saves your calibration data for future use, so you don’t have to re-calibrate each time.

Figure 4. The Quantus™ Fluorometer Protocol Screen (top) and Calibration Screen (bottom).

5. Ideal for Quantitating Maxwell™ FFPE Samples
Multiple sample types:
- Cells
- Tissue
- Swabs
- FFPE

Figure 5. Nucleic Acid workflow

6. Quantus Provides Superior Quantitation Sensitivity
QuantiFluor® ONE dsDNA Dye and the Quantus™ Fluorometer are designed with a free demo!

www.promega.com/Quantus

Visit www.promega.com/Quantus to request a free demo!

Simple Workflow:
1. Add 1ul of DNA sample from Maxwell purification with 199ul of the QuantiFluor® ONE Dye to a 0.5mL PCR tube
2. Add 1ul of the DNA Standard with 199ul of the QuantiFluor® ONE Dye to the 0.5mL PCR tube
3. Mix and Incubate for 5 minutes at RT protected from light
4. Measure fluorescence
a.Use the QuantiFluor® Fluorometer – select the “ONE DNA” protocol on the instrument
b.Use the QuantiFluor® ONE with QuantiFluor® ONE with pre-diluted DNA

Figure 7. Quantus™ Fluorometer workflow

8. Quantitate FFPE Samples with Confidence

- Correlation to gold standard qPCR, yet provides a quick, easy, and less expensive alternative
- Sensitivity and Specificity similar to qPCR
- NanoDrop 2000 overestimation of FFPE DNA concentrations by up to 800%

Figure 8. DNA purified from lung, colon and breast FFPE tissue curls using the Maxwell CSC DNA FFPE kit on the Maxwell CSC instrument. Four FFPE curls were sampled from two separate tissue blocks for all three tissue types. DNA quantitated using the NanoDrop 2000, QuantiFluor ONE dsDNA dye and TaqMan qPCR amplification on the ABI 7500.

9. Summary
The QuantiFluor® ONE dsDNA Dye System is a ready-to-use dye for dsDNA quantitation. It uses an add-n-measure format, providing high convenience for users. The system comes with pre-diluted DNA standards to streamline the whole process.

Together with the Quantus™ Fluorometer, these products provide a simple workflow as easy as the NanoDrop®, but with the added benefit of fluorescence sensitivity and target specificity.

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