

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 low-level sample types

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

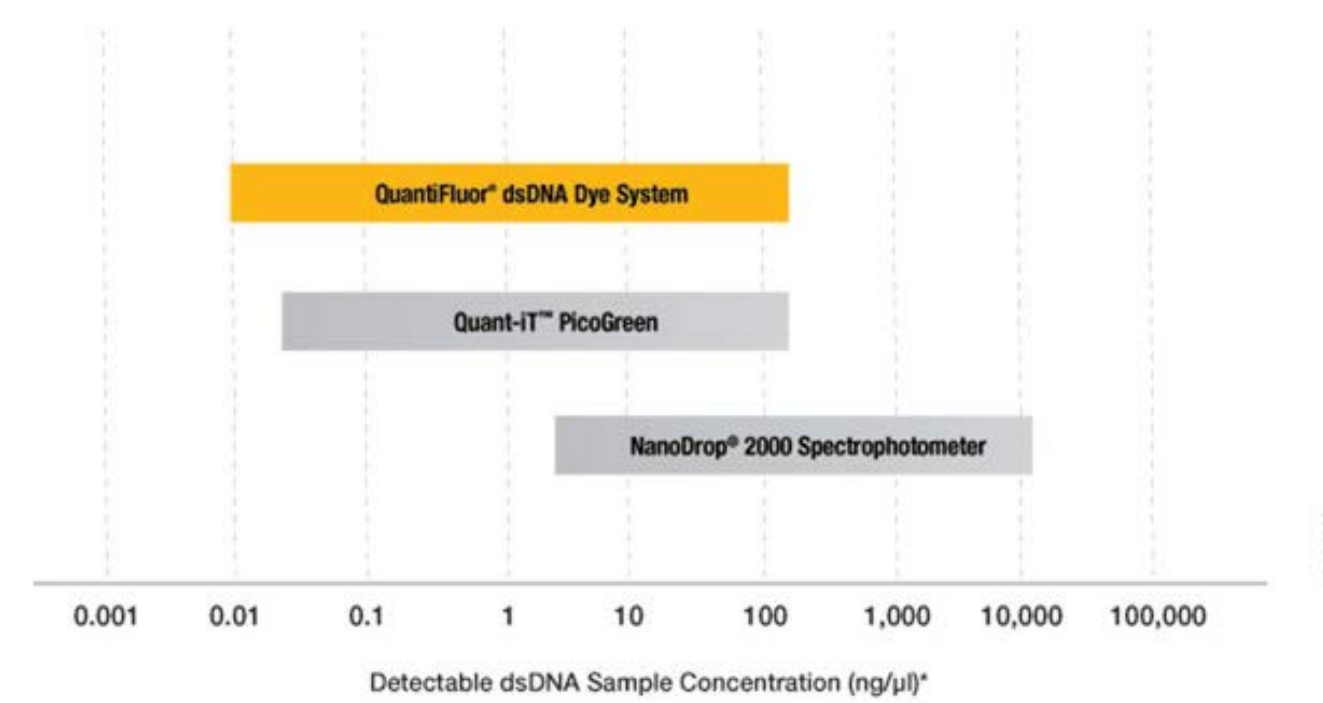


Figure 1. dsDNA quantitation range comparing QuantiFluor® Dyes with competitor methods.

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.



Figure 2. The Quantus™ Fluorometer and QuantiFluor® Dye

Quantus is **cost effective**, bringing users **high value**

3. Intuitive and Easy to Navigate

The color LCD display makes navigation very simple.

Quantus calculates your sample concentration, so you don't have to. Simply input the volume of sample, select your preferred unit of measure, and quantitate 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 easily be calibrated using a simple process

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

Simple Workflow

- Automatically measure samples using the Lid-Close feature
- Save calibration data for future use
- Ensure protocol setup is accurate with automatic Quality-Check

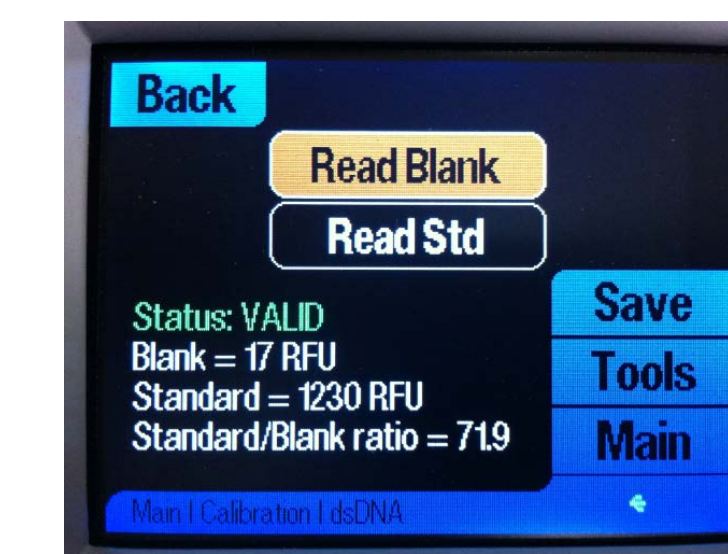
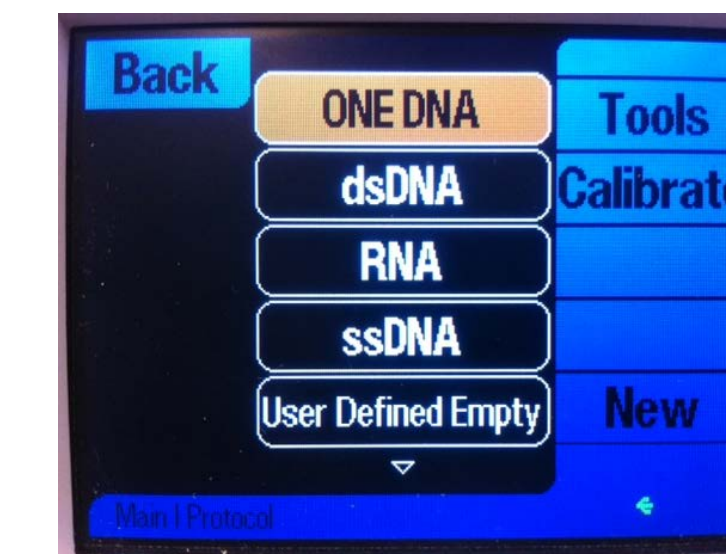


Figure 4. The Quantus™ Fluorometer Protocol Screen (top) and Calibration Screen (bottom)

5. Ideal for Quantitating Maxwell™ FFPE Samples

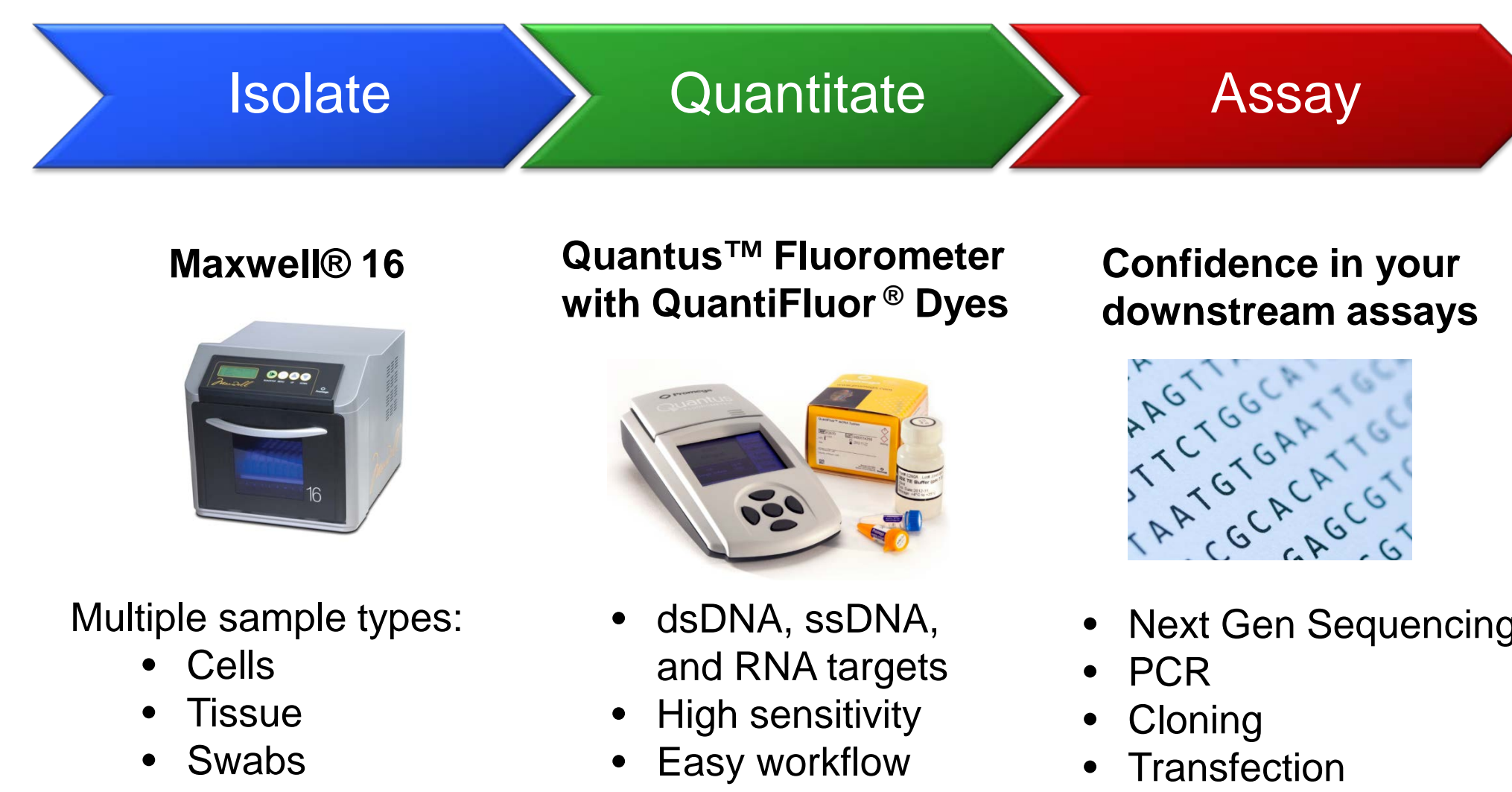


Figure 5. Nucleic Acid workflow

6. Quantus Provides Superior Quantitation Sensitivity

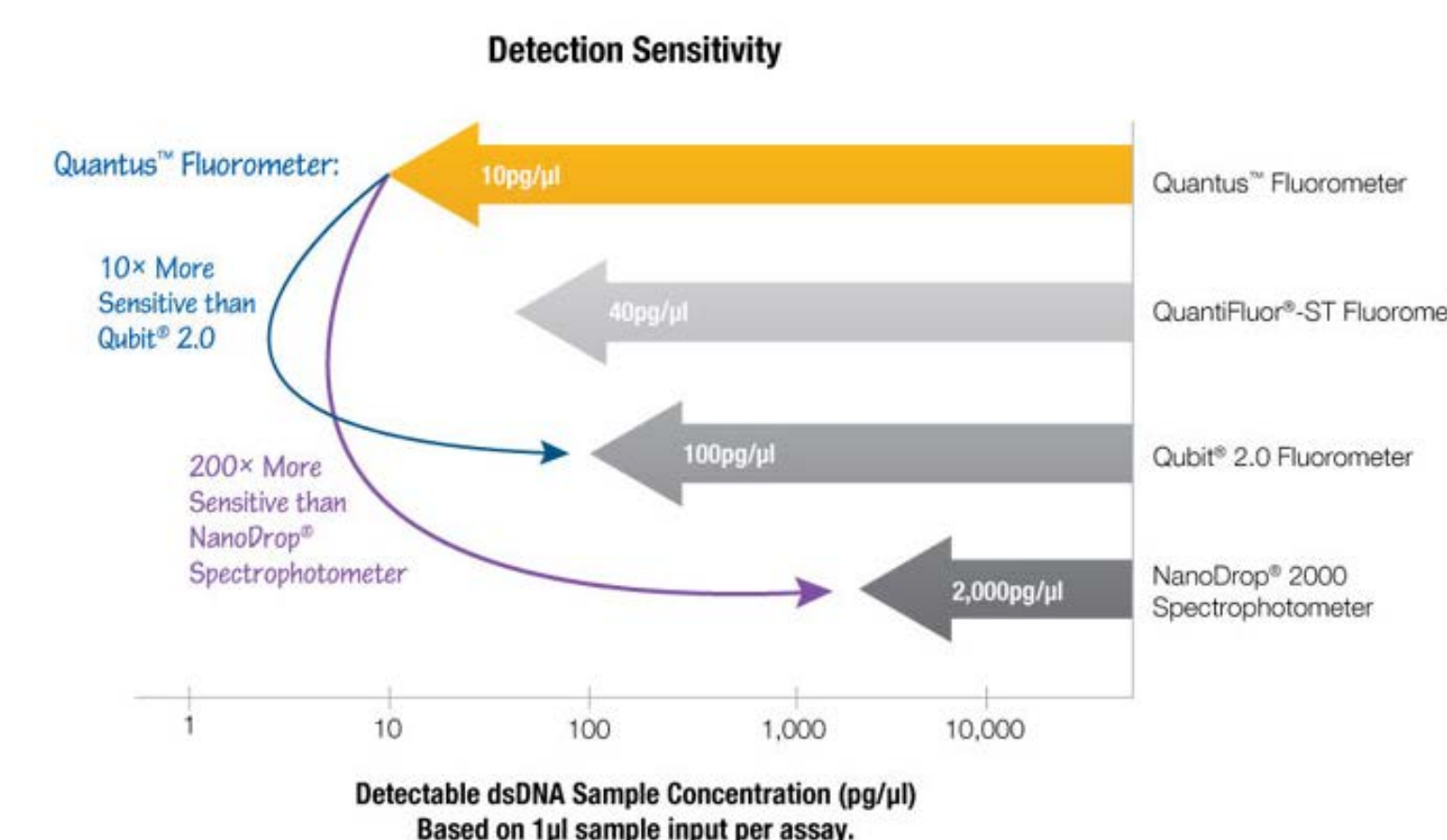


Figure 6. Quantus is 10 times more sensitive than Qubit® 2.0, and 200 times more sensitive than NanoDrop® 2000.

7. QuantiFluor® ONE dsDNA: Easy and Ready-Use

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**

Simple Workflow:

1. Add 1ul of DNA sample from Maxwell purification with 199ul of the QuantiFluor® ONE Dye
2. Add 1ul of the DNA Standard with 199ul of the QuantiFluor® ONE Dye to a 0.5ml PCR tube
3. Mix and Incubate for 5 minutes at RT protected from light.
4. Measure fluorescence
 - a) Use the Quantus™ Fluorometer – select the "ONE DNA" protocol on the instrument

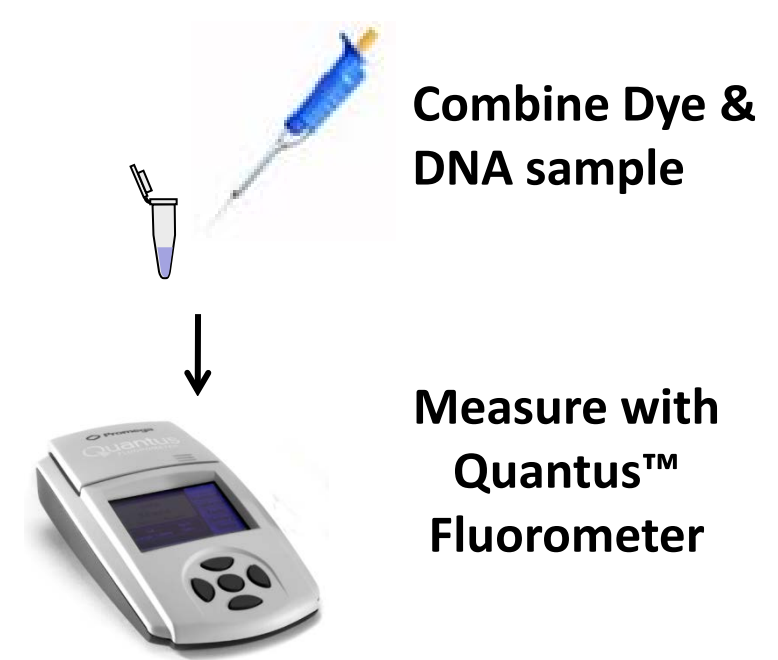


Figure 7. QuantiFluor® ONE with Quantus™ Fluorometer workflow

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%**

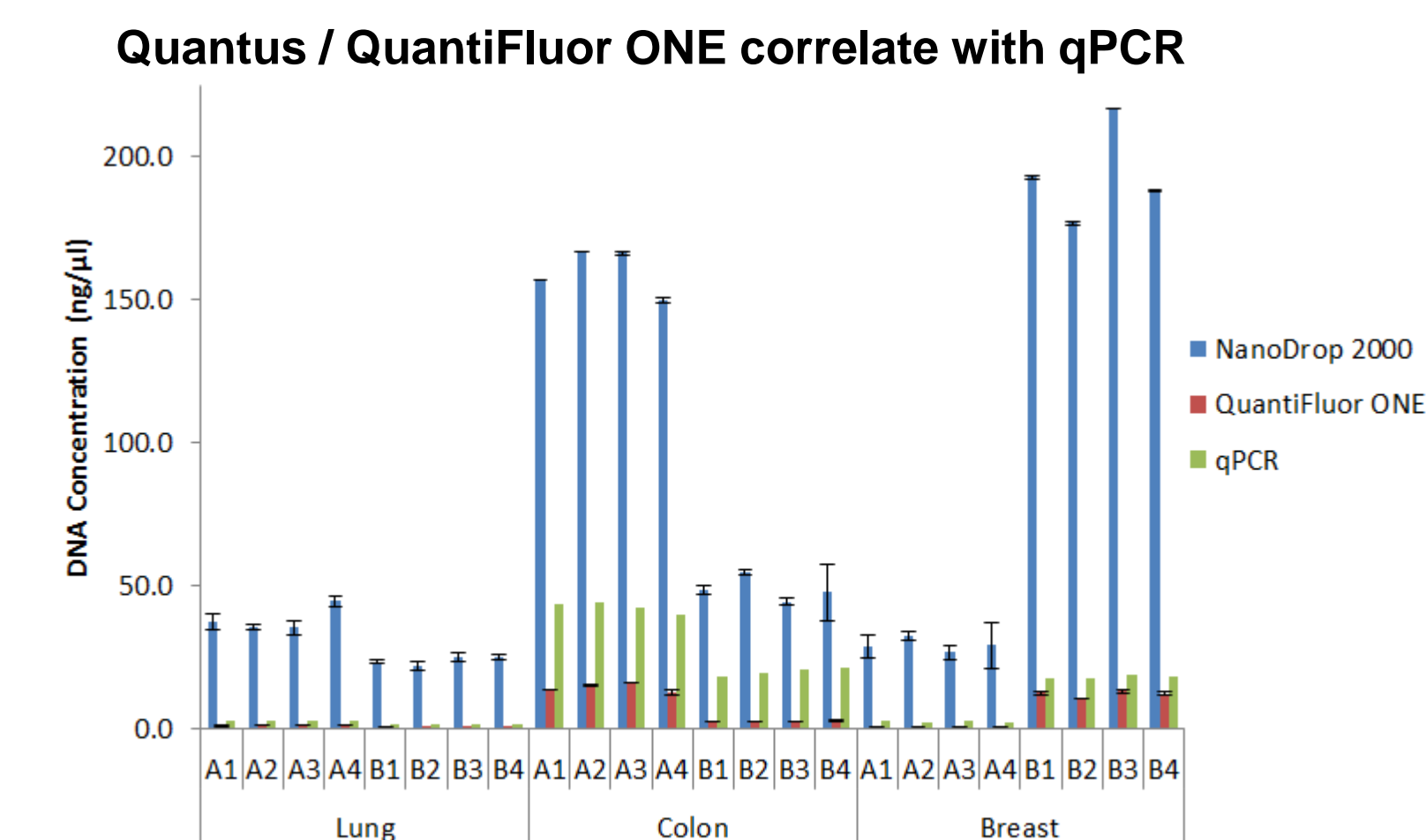


Figure 8. DNA purified from lung, colon and breast FFPE tissue curls using the Maxwell CSC DNA FFPE kit on the Maxwell CSC instrument. Four FFPE curls were sampled from two separate tissue blocks for all three tissue types. DNA quantitated using the NanoDrop 2000, QuantiFluor ONE dsDNA dye and TaqMan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

9. Summary

The Quantus™ Fluorometer and QuantiFluor ONE dsDNA Dye are **ideal** for low-to-medium throughput **Nucleic Acid workflows that require sensitive and accurate quantitation**, especially with FFPE samples.

Designed and optimized with Promega QuantiFluor® Dyes, to allow scientists a **plug-and-play** system to easily and accurately quantitate nucleic acid samples.

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

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