

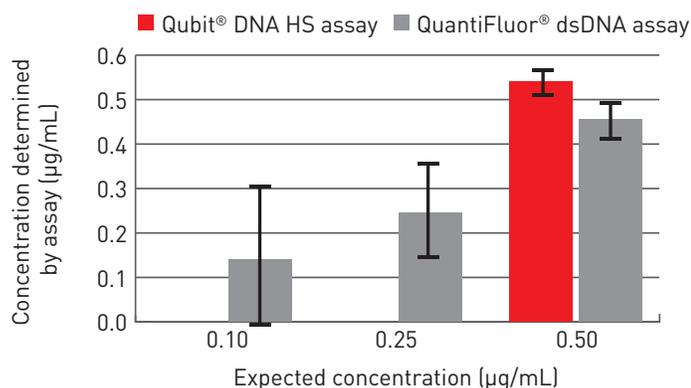
# Qubit® Fluorometer vs. Quantus™ Fluorometer

## Accurate, sensitive, intuitive

The Qubit® Fluorometer is an analytical instrument for DNA, RNA, and protein quantitation with a small benchtop footprint and an intuitive user interface. The instrument works with Qubit® assay kits to enable greater sensitivity and accuracy than UV absorbance measurements, and is ideal for applications including cloning, sequencing, transfection, qPCR, and protein assays. Here we compare accuracy and specificity data for the Qubit® Fluorometer and assays with the Quantus™ Fluorometer and QuantiFluor® assays from Promega.

### DNA assay sensitivity

Promega claims that dsDNA assays on the Quantus™ Fluorometer are 10x more sensitive than Qubit® Fluorometer dsDNA assays,\* but assay precision is compromised for both instruments at concentrations below 0.5 ng/mL (Figure 1). The Qubit® Fluorometer gives an out-of-range message when the calculated value exceeds a CV of 20%, providing you with confidence in the results. Table 1 summarizes these results along with other attributes of each instrument.



**Figure 1. Assay sensitivity.** Comparable results are achieved at 0.5 ng/mL, but the coefficient of variation (CV) for the QuantiFluor® assay is 112% at 0.1 ng/mL. The Qubit® fluorometer reports an out-of-range message at levels >20% CV; the Quantus™ Fluorometer does not.

**Table 1. Comparison of dsDNA quantitation data and other instrument features.**

|                        | Qubit® Fluorometer and assays                           | Quantus™ Fluorometer and QuantiFluor® assays   |
|------------------------|---|--|
| Sensitivity (dsDNA)    | 0.5 ng/mL (10% CV)                                      | 0.1 ng/mL (112% CV)  |
| Dynamic range† (dsDNA) | 0.5 ng/mL to 5 µg/mL                                    | 0.1 ng/mL to 1 µg/mL   |
| Detection limit        | Yes—out-of-range message at low and high ends of assays | No—gives concentration values for any sample with fluorescence signal above background |
| Display                | Large, intuitive touch screen                           | Push-button navigation   |
| Data storage           | 1,000 samples   | 20 samples   |
| Data transfer          | USB thumb drive or cable                                | Indirect—need to download software onto computer                                       |
| Footprint              | Small   | Similar to the Qubit® 2.0 Fluorometer  |

†Combined range of Qubit® Broad Range and High Sensitivity assays.

\* Promega Quantus™ Fluorometer sensitivity claim is stated at [www.promega.com/quantus](http://www.promega.com/quantus).

## RNA quantitation accuracy in the presence of DNA

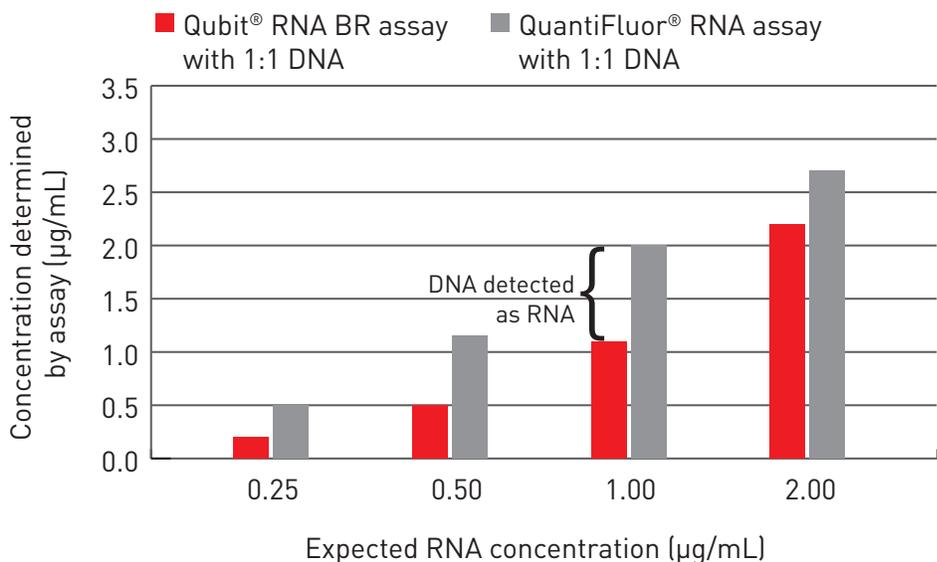
Qubit® RNA assays are designed to be specific and accurate for RNA even in the presence of a 1:1 mixture of RNA and DNA, whereas the QuantiFluor® RNA assay on the Quantus™ Fluorometer cannot distinguish RNA from DNA below 3 µg/mL (Figure 2). This is critical for limited, low-concentration samples that may also contain DNA.

## The Qubit® Fluorometer has more compatible assays

The Qubit® Fluorometer supports assays for high-sensitivity or broad-range dsDNA and RNA quantitation (Table 2). Assays for oligos, ssDNA, protein, and microRNA quantitation are also available.

## Trusted when accuracy matters

Qubit® instruments and assays have a proven track record, with over 3,000 citations and hundreds of testimonials. With high sensitivity for DNA, high specificity for RNA, and a broad range of available assays, the Qubit® Fluorometer is the instrument of choice when accuracy matters most.



**Figure 2. Accuracy in the presence of DNA.** The Qubit® RNA BR (broad range) assay demonstrates high specificity, even at low concentrations and in the presence of DNA. A significant amount of DNA is detected as RNA with the QuantiFluor® assay.

**Table 2. Assays available for each fluorometer.**

| Assay <sup>†</sup> | Qubit® assays for the Qubit® Fluorometer | QuantiFluor™ assays for the Quantus™ Fluorometer |
|--------------------|--|--|
| dsDNA              | Yes                                      | Yes  |
| RNA                | Yes                                      | Yes <sup>§</sup>                                 |
| microRNA           | Yes                                      | No   |
| Protein            | Yes                                      | No   |
| ssDNA or oligos    | Yes                                      | Yes  |

<sup>†</sup>New assays including cholesterol, glucose, and peroxide can be added to the Qubit™ 2.0 or 3.0 fluorometers.

<sup>§</sup>QuantiFluor™ RNA assay for the Quantus™ Fluorometer also detects DNA.

*“Quick and easy with excellent repeatability; more reliable than spectrophotometry and more confidence in results.”*

—Kevin Barr  
University of Western Ontario

*“It gives me the possibility to measure very diluted samples. Good, quick, and easy.”*

—Sylvia Rodriguez  
Institute for Research in Biomedicine (IRB Barcelona)

## Ordering information

| Product                                      | Starting sample concentration range | Assay range  | Cat. No. |
|--|-------------------------------------|--------------|----------|
| Qubit® dsDNA HS (High Sensitivity) Assay Kit | 10 pg/μL–100 ng/μL                  | 0.1–100 ng   | Q32854   |
| Qubit® dsDNA BR (Broad Range) Assay Kit      | 100 pg/μL–1,000 ng/μL               | 0.2–1,000 ng | Q32853   |
| Qubit® ssDNA Assay Kit                       | 50 pg/μL–200 ng/μL                  | 1–200 ng     | Q10212   |
| Qubit® RNA HS (High Sensitivity) Assay Kit   | 250 pg/μL–100 ng/μL                 | 5–100 ng     | Q32852   |
| Qubit® RNA BR (Broad Range) Assay Kit        | 1 ng/μL–1 μg/μL                     | 20–1,000 ng  | Q10210   |
| Qubit® Protein Assay Kit                     | 12.5 μg/mL–5 mg/mL                  | 0.25–5 μg    | Q33212   |
| Qubit® microRNA Assay Kit                    | 50 ng/mL–100 μg/mL                  | 1–100 ng     | Q32880   |
| Qubit® 3.0 Fluorometer                       |                                     |              | Q33216   |
| Qubit® 3.0 Quantitation Starter Kit          |                                     |              | Q33217   |
| Qubit® 3.0 NGS Starter Kit                   |                                     |              | Q33218   |

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