

ab156902 General DNA Quantification Kit

Instructions for Use

For the quantification of double stranded DNA isolated from any species.

This product is for research use only and is not intended for diagnostic use.

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1. Background

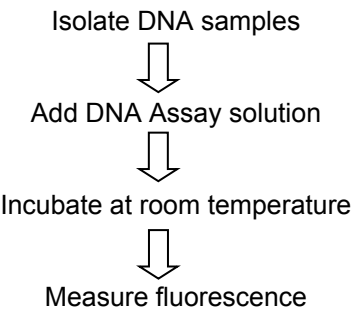
DNA quantification is common practice in molecular biology, genetics, and epigenetics. Accurate quantification of DNA concentration, especially when DNA is present at low concentrations, is critical in wide variety of biological applications. These applications include standard molecular biology techniques, as well molecular diagnostic techniques. Meanwhile, a rapid and convenient assay method would enable the determination of DNA to be easily performed.

The General DNA Quantification Kit (ab156902) provides a rapid and convenient method for DNA quantification. The kit has the following features:

- Very fast procedure (< 10 minutes).
- Sensitive and accurate: linear detection range 0.1 ng to 100 ng (1-1000 ng/ml) in 96-well plate assay.
- No interference: amount of fluorescence is directly proportional to DNA amount.

The General DNA Quantification Kit is suitable for quantifying double stranded DNA isolated from any species. It simply applies a proprietary DNA assay solution for DNA quantification. In this assay, the DNA samples are directly fluorescently quantified.

2. Assay Summary



3. Materials Supplied

Item	48 tests	96 tests	Storage (Before Preparation)
GDN1 (50X DNA Assay Solution)**	0.12 mL	0.24 mL	−20°C
GDN2 (Assay Dilution Buffer)	8 mL	16 mL	RT
GDN3 (DNA Standard, 10 µg/ml)*	0.1 mL	0.2 mL	−20°C
Microplate	1	1	RT

4. Storage and Stability

Store GDN1 and GDN3 at -20°C away from light. Store GDN2 and the microplate at room temperature ($15\text{-}25^{\circ}\text{C}$).

*For maximum recovery of the products, centrifuge the original vial prior to opening the cap.

** Thaw at room temperature for 5-10 minutes prior to use.

5. Materials Required, Not Supplied

- Adjustable pipette or multiple-channel pipette
- Aerosol resistant pipette tips
- Microplate reader capable of reading fluorescence Ex/Em = 480/520 nm

6. Reagent Preparation

Prepare GDN1 (50X DNA Assay Solution)

Dilute GDN1 (50X DNA Assay Solution) with GDN2 (Assay Dilution Buffer) to 1X DNA Assay Solution (ex: add 2 μL of GDN1 to 98 μL of GDN2).

7. Standard Preparations

Suggested Standard Curve Preparation: Dilute standard DNA (GDN3) with GDN2 at a 1:10 ratio (ex: add 10 μL of standard DNA to 90 μL of GDN2).

GDN2(μL)	Diluted Standard DNA (μL)	50X DNA Assay Solution (μL)
0	100	2
60	40	2
80	20	2
90	10	2
95	5	2
98	2	2
99	1	2

Add each solution to the wells of 96-well plate for measurement of fluorescence. The final concentration of DNA in the mixed solutions should be 100, 40, 20, 10, 5, 2, and 1 ng/100 μL , respectively (from the top to the bottom).

8. Sample Preparation

Isolate double stranded DNA from any species.

9. Assay Procedure

- Add 100 μL of 1X DNA Assay Solution to each well of a 96-well plate.
- Add 2-5 μL of DNA sample. Mix lightly. For negative control add 2-5 μL of 1X TE (pH 7.5) instead of sample.
- Incubate for 2 minutes at room temperature, protected from light.
- Measure fluorescence at Ex 480-500 and Em 520-550 nm using fluorescence microplate reader. Signal is stable for about 2 hours.

10. Data Analysis

Calculation: Plot RFU value versus amount of standard DNA and determine the slope as RFU/ng.

Calculate DNA concentration of sample using the following formula:

$$\text{DNA concentration} \left(\frac{\text{ng}}{\text{mL}} \right) = \frac{\text{Sample RFU} - \text{Blank RFU}}{\text{Sample volume } (\mu\text{l}) \times \text{slope}} \times 1000$$

NOTE: *This refers to DNA sample volume added into the well at step 9b.*

Typical Data:

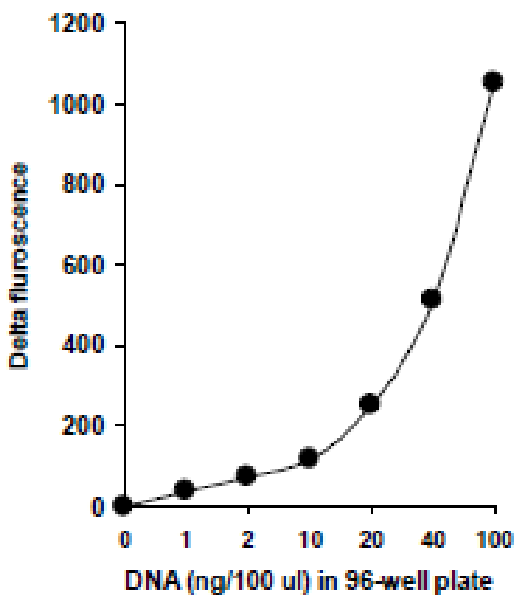


Figure 1. Typical Standard Curve generated using General DNA Quantification Kit (ab156902).

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