

Product Information

AccuGreen™ Broad Range dsDNA Quantitation Kit

For use with handheld fluorometers such as the Qubit®

Kit Contents

Component	31069-T 100 assays	31069 500 assays
AccuGreen™ Broad Range dsDNA Quantitation Solution	50 mL 31070-T	250 mL 31070
AccuGreen™ Standard 1 (0 ng/uL)	1 mL 99819-T	5 mL 99819
AccuGreen™ Standard 2 (100 ng/uL)	1 mL 99838-T	5 mL 99838

Reagents to be supplied by user

0.5 mL clear PCR tubes

Storage and Handling

Store all kit components at 4°C. The Solution is also stable for storage at room temperature for at least 6 months, protected from light. Product is stable for at least 6 months from date of receipt when stored as recommended.

Spectral Properties

Ex/Em: 500/530 nm (bound to dsDNA).

Product Description

The AccuGreen™ Broad Range dsDNA Quantitation Kit is designed for use with handheld fluorometers such as the Qubit® fluorometer from Thermo Fisher. Unlike absorbance-based measurements, AccuGreen™ Solution is highly selective for double-stranded DNA over single-stranded DNA or RNA.

The linear range of the AccuGreen™ broad range assay is 2 to 1000 ng of DNA per tube. DNA samples with concentrations between 100 pg/uL and 1000 ng/uL may be quantified using sample volumes between 1 and 20 uL (for example, 1 uL of 1000 ng/uL is 1000 ng total, and 20 uL of 100 pg/uL is 2 ng total, which will both fall within the linear range of the assay). If you use the most common sample volume of 10 uL, the sample concentration range is 200 pg/uL to 100 ng/uL.

The AccuGreen™ kits provide enough reagents to quantify approximately 100 samples (31069-T) or 500 samples (31069), plus the two standards. There are enough reagents for 250 reactions (31069-T) or 1,250 reactions (31069) including the standards.

Biotium also offers standalone AccuGreen™ Broad Range dsDNA Quantitation Solution (31070). While the AccuGreen™ Kit comes with a calf thymus DNA standard, the AccuGreen™ Solution does not provide a DNA standard. It is intended for those who wish to use their own standard.

Biotium also offers the AccuGreen™ High Sensitivity dsDNA Quantitation Kit (31066) for use with the Qubit® fluorometer. The high sensitivity kit is linear between 0.1 and 100 ng of dsDNA per assay.

Protocol for reading the AccuGreen™ broad range assay on the Qubit® Fluorometer

This protocol describes how to measure AccuGreen™ fluorescence on a Qubit® 3.0 Fluorometer using the pre-programmed dsDNA Broad Range program. Instructions may vary for older Qubit® models.

Note: The linear range for this assay on the Qubit® 3.0 is 2-1000 ng DNA in the assay tube. However, samples even slightly below 2 ng will return the error message "Out of Range." Therefore for best results use more than 2 ng DNA per assay.

1. Warm all components to room temperature before use. You can place all kit components in a 37°C water bath for rapid warming; be sure to allow solutions to cool to room temperature before using.
2. For each sample and standard, pipette 190 uL of the Quantitation Solution into a clear 0.5 mL PCR tube (if using the Qubit® fluorometer).
3. Into one tube, pipet 10 uL of AccuGreen™ Standard 1 (0 ng/uL).
4. Into a second tube, pipet 10 uL of AccuGreen™ Standard 2 (100 ng/uL).
5. Pipette 1-20 uL of each DNA sample to be quantified into its own tube.
6. Incubate the tubes at room temperature for at least 2 minutes.
7. Turn on the Qubit™ 3.0 instrument. On the home screen select dsDNA. Choose the Broad Range assay.
8. Follow the prompts on the screen, and first read the AccuGreen™ Standard 1 and then the AccuGreen™ Standard 2. The program will use these values to quantify your unknown samples.
9. One at a time, measure each of your samples.
10. The data can be recorded manually or exported as a csv file.

Considerations for Data Analysis

Calf thymus DNA can serve as a reference for most plant and animal DNA because it is double-stranded, highly polymerized and is approximately 58% AT (42% GC). Lambda dsDNA yields similar results. You may wish to use a standard similar to your unknown samples in DNA length, structure (i.e., linear vs. circular), or GC content. For bacterial DNA, a species-specific standard may be desired because the GC content varies widely depending on the species.

Related Products

Catalog number	Product
31070	AccuGreen™ Broad Range dsDNA Quantitation Solution
31066	AccuGreen™ High Sensitivity dsDNA Quantitation Kit
31068	AccuGreen™ High Sensitivity dsDNA Quantitation Solution
31060	AccuBlue® NextGen dsDNA Quantitation Kit
31028	AccuClear® Ultra High Sensitivity dsDNA Quantitation Kit with 7 DNA Standards
31007	AccuBlue® Broad Range dsDNA Quantitation Kit with 9 DNA Standards
31073	AccuBlue® Broad Range RNA Quantitation Kit
41003	GelRed® Nucleic Acid Gel Stain, 10,000X in water
41005	GelGreen® Nucleic Acid Gel Stain, 10,000X in water
31041	Forget-Me-Not™ EvaGreen® qPCR Master Mix (2-Color Tracking)
31045-T	Forget-Me-Not™ EvaGreen® qPCR Master Mix (low ROX)
31046-T	Forget-Me-Not™ EvaGreen® qPCR Master Mix (high ROX)
31043	Forget-Me-Not™ Universal Probe Master Mix
41024-4L	Water, Ultrapure Molecular Biology Grade
31030	DNA Gel Extraction Kit
CD501	RNAstorm™ Kit for Isolation of RNA from FFPE Tissue Samples
CD502	DNAstorm™ Kit for Isolation of RNA from FFPE Tissue Samples

Please visit our website at www.biotium.com for information on our life science research products, including environmentally friendly EvaGreen® qPCR master mixes, fluorescent CF® dye antibody conjugates and reactive dyes, apoptosis reagents, fluorescent probes, and kits for cell biology research.

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