

1× SEQQX® dsDNA HS Assay Kit

Cat. no. LM801001

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Product Information

Cat. No.	Product name	Pack size
LM801001	1× SEQQX® dsDNA HS Assay Kit	100 T
		500 T

One test (T) corresponds to a single fluorescence measurement of a dsDNA sample using the ready-to-use working solution. Please state the required pack size when ordering.

Kit Contents

Contents	Description
SEQQX® dsDNA HS Detection Working Solution	Ready-to-use premixed fluorescent dye solution; add directly to the sample, no further dilution or preparation required
dsDNA HS Standard #1	For two-point standard curve calibration (Qubit® fluorometer workflow)
dsDNA HS Standard #2	For two-point standard curve calibration; may be serially diluted in 1× TE buffer to generate a multi-point linear curve when using a fluorescence microplate reader

Storage

Store at 2–8 °C. Shelf life: 1 year from the date of manufacture.

Applicable Instruments

Qubit® Fluorometer; fluorescence microplate reader (black microplate recommended; Ex = 480 nm, Em = 520 nm).

Applicable Samples

Double-stranded DNA (dsDNA) samples for next-generation sequencing (NGS) workflows, including input DNA quantification and DNA library quantification.

Introduction

1× SEQQX® dsDNA HS Assay Kit is a rapid, sensitive and precise fluorescence-based quantification kit for double-stranded DNA (dsDNA). The kit shows high selectivity for dsDNA over other nucleic acid species and gives an excellent linear response across the 0.2–100 ng range. Operation is simple: the ready-to-use detection working solution is mixed directly with the dsDNA sample, and the result can be read within minutes using a Qubit® fluorometer or a fluorescence microplate reader. The assay is well suited to large-scale dsDNA quantification in NGS workflows, such as input DNA quantification and DNA library quantification, and shows good tolerance to common contaminants such as residual proteins and salts (use with Qubit®-specific assay tubes, e.g. Cat. no. 83509ES, is recommended).

Features

1. Fast — ready-to-use premixed working solution; results are obtained within 5 minutes.
2. Sensitive — accurate quantification of dsDNA samples across the 0.2–100 ng range.
3. Accurate — deviation against a competitor reagent is controlled within 10%, with minimal batch-to-batch variation.
4. Stable — consistent performance across different production batches.
5. Tolerant — good tolerance to common contaminants such as residual proteins and salts.

Notes Please be sure to read this precaution before using the kit.

1. This product is for scientific research use only. Not for use in diagnostic or clinical procedures.
2. For your safety and health, wear a laboratory coat and disposable gloves when handling this product.
3. Protect the standards and working solution from prolonged exposure to strong light; avoid repeated freeze-thaw cycles.
4. Use Qubit®-specific assay tubes for measurement on a Qubit® fluorometer to ensure a correct optical path and accurate reading.

Protocol

A. Standard Curve Preparation

1. Prepare two calibration points using dsDNA HS Standard #1 and dsDNA HS Standard #2, each mixed with the detection working solution in the same way as the samples (see part B).
2. When measuring on a Qubit® fluorometer, the two standards are sufficient to generate the standard curve.
3. When measuring on a fluorescence microplate reader, dsDNA HS Standard #2 may be serially diluted in 1× TE buffer to obtain additional calibration points and confirm a good linear relationship across the working range.

B. Sample Measurement

Component	Volume
SEQQX® dsDNA HS Detection Working Solution	As required by the instrument protocol
dsDNA sample or standard	As required by the instrument protocol

Mix the detection working solution directly with the dsDNA sample or standard, vortex briefly, and incubate at room temperature, protected from strong light, before reading. No separate dilution buffer is required, as the working solution is supplied ready-to-use.

C. Measurement

Read the samples and standards using a Qubit® fluorometer following the instrument's dsDNA High Sensitivity workflow, or using a fluorescence microplate reader (black microplate recommended; Ex = 480 nm, Em = 520 nm).

D. Compatible Instruments

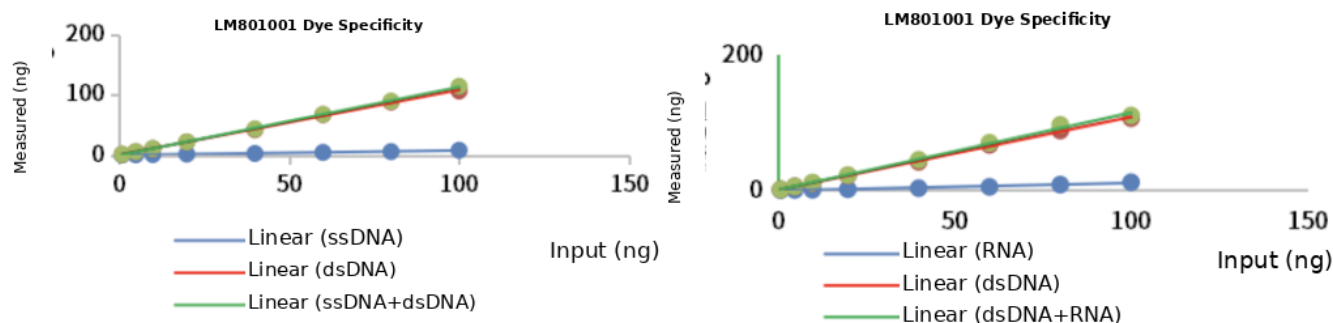
Fluorometer: Qubit® 2.0/3.0/4.0 Fluorometer.

Microplate reader: any fluorescence microplate reader capable of Ex = 480 nm / Em = 520 nm detection with a black microplate.

Application Cases

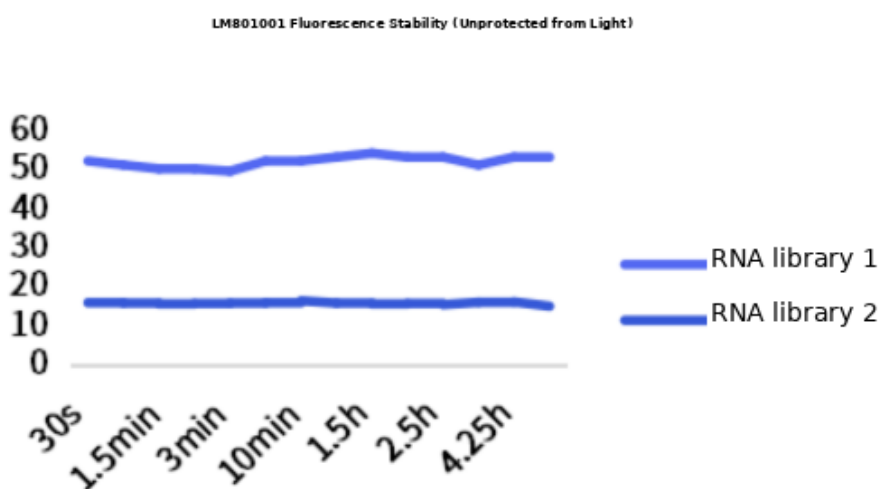
1. Excellent Dye-Binding Specificity

1× SEQQX® dsDNA HS Assay Kit shows a strong, near-linear fluorescence response to dsDNA input (0–100 ng), while the signal from ssDNA or RNA at equivalent input amounts remains close to baseline. Mixed ssDNA+dsDNA and dsDNA+RNA samples track the pure-dsDNA response closely, confirming that the measured signal reflects the dsDNA content of the sample with minimal interference from other nucleic acid species.



2. Fast Dye-Binding Kinetics and Sustained Fluorescent Signal

Fluorescence signal was monitored from 30 seconds to 4.25 hours after mixing, without protecting the samples from ambient light. The signal for both RNA library samples tested was essentially stable and reproducible throughout the observation window, showing that dye binding is fast and that the resulting fluorescent signal is stable enough for high-throughput workflows that cannot guarantee strict light protection.



3. Batch-to-Batch Stability

Four independent samples were measured with three different production batches of 1× SEQQX® dsDNA HS Assay Kit and compared against a competitor reagent (T*). The deviation between batches and the competitor reagent remained within approximately $\pm 10\%$ across all batches and samples tested, demonstrating consistent quantification performance across production lots.

