

QuantFlex ssDNA Quantification Kit



Product Introduction

The QuantFlex ssDNA Quantification Kit provides a rapid, convenient, and highly accurate method for the quantification of single-stranded DNA (ssDNA) or oligonucleotides. Designed for use with the QuantFlex 800 Fluorometer or Qubit Fluorometer, this assay delivers reliable and sensitive detection across a broad initial concentration range of 10 pg/μL to 240 ng/μL, depending on sample input volume.

The assay demonstrates excellent tolerance to common contaminants, including salts, solvents, detergents, and proteins, ensuring accurate results even in complex sample matrices. It is suitable for quantifying both oligonucleotides and long single-stranded DNA. Free nucleotides and short single-stranded DNA fragments (≤ 6 bases) do not interfere with quantification.

Although optimized for ssDNA measurement, the fluorescent dye exhibits enhanced fluorescence when bound to double-stranded DNA (dsDNA) or RNA. Therefore, sample purity should be considered when interpreting results.

Product Specification

Parameters	Description
Detection Method	Fluorescence
Initial Sample Volume	1-20 μL
Quantitation Range	10 pg/μL~240 ng/μL
Initial Sample Concentration	0.2-240ng
Compatible Platform	QuantFlex 800, Qubit 2, Qubit 3, Qubit 4, and Qubit Flex
Compatible Consumables	BSH11S1-L 0.2mL PCR 8-Strip Tubes (With Attached Flat Caps)
Storage Condition	Store at 2-8°C, protected from light

Product Features

- **Easy to Use:** Ready-to-use working solution. Simply mix with sample and incubate. No dye reconstitution required.
- **High Sensitivity:** Excellent linearity from 10 pg/μL to 240 ng/μL with a wide dynamic range.
- **Inhibitor Tolerant:** Resistant to common contaminants such as salts, solvents, detergents, and proteins.
- **Broad Compatibility:** Suitable for ssDNA quantification from various sample sources.

Application Cases

Case 1

Single-stranded DNA (ssDNA) primers were quantified using this kit and a comparable imported kit. The synthetic primers were diluted into a series of concentration gradients, and the measured results are shown below.

Sample Type	Kit	Measured Concentration (ng/μL)					
ssDNA Primer 1 (22 bases)	Imported	8.14	4.06	1.99	0.96	0.44	0.18
	Bioer	7.91	3.96	1.89	0.93	0.45	0.22
ssDNA Primer 2 (35 bases)	Imported	9.13	4.57	2.12	1.04	0.47	0.20
	Bioer	9.01	4.48	2.17	1.06	0.55	0.30

Results: No significant difference was observed between this product and the comparable imported kit in the quantification of different single-stranded DNA primers, demonstrating equivalent performance.

Cases 2

Using M13 single-stranded DNA as the target, various types and concentrations of potential interfering substances were added. The ssDNA concentrations measured in the presence and absence of interferents were compared. The results are summarized below:

Interferent	Concentration	Effect on Fluorescence Signal
Ammonium acetate	50 mM	Decrease (<20%)
Sodium acetate	30 mM	Decrease (<10%)
Sodium chloride	100 mM	Decrease (<30%)
Zinc chloride	1 mM	Decrease (<50%)
Magnesium chloride	5 mM	Decrease (<40%)
Urea	2 M	Increase (<50%)
Phenol	0.2%	Decrease (<20%)
Ethanol	10%	Increase (<20%)

Interferent	Concentration	Effect on Fluorescence Signal
Chloroform	2%	Increase (<10%)
SDS	0.01%	Increase (<80%)
Triton X-100	0.1%	Increase (<20%)
BSA	2%	Increase (<20%)
IgG	0.1%	Decrease (<40%)
PEG	1%	Increase (<30%)
Agarose	0.1%	Increase (<10%)
ATP	0.1%	Increase (<30%)

Results: The product demonstrates strong tolerance to a wide range of potential interfering substances and performs comparably to the imported reference kit.

Ordering Information

Product Name	Cat. No.	Package	Storage Condition
QuantFlex ssDNA Quantification Kit	BSB116S1	250 T	2°C-8°C
QuantFlex ssDNA Quantification Kit	BSB116M1	1250 T	2°C-8°C



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