

Helixyte™ Fluorimetric RNA Quantification Kit *5-100 ng High Sensitivity*

Catalog number: 17696
Unit size: 500 Test

Component	Storage	Amount (Cat No. 17696)
Component A: Helixyte™ Red RNA HS	Freeze (< -15 °C), Minimize light exposure	1 vial (0.25 mL, 100X in DMSO)
Component B: RNA Assay Buffer	Refrigerated (2-8 °C)	1 bottle (100 mL)
Component C: RNA Standard	Freeze (< -15 °C)	1 vial (RNA: 2 mg/mL)

OVERVIEW

The Helixyte™ Fluorimetric RNA Quantification Kit – High Sensitivity is designed for accurate and ultra-sensitive measurement of RNA at very low concentrations. Ideal for precious or limited RNA samples, this kit uses an advanced RNA-selective fluorescent dye to achieve high specificity and minimal background noise, offering a clear advantage over traditional UV absorbance methods.

Helixyte™ Fluorimetric RNA Quantification Kit is a high-capacity format providing reagents sufficient for 500 tests. It provides reliable quantification across a variety of sample types like total RNA, mRNA, or small RNA fragments. Its streamlined protocol and ready-to-use format make it easy to integrate into existing workflows, saving time and giving consistent results. This kit is compatible with many downstream applications of RNA like RT-qPCR, RNA-seq, or cDNA synthesis.

AT A GLANCE

Protocol summary

1. Add Helixyte™ Red RNA HS reagent working solution (200 µL).
2. Add test samples (10 µL).
3. Incubate at room temperature for 5 minutes.
4. Monitor fluorescence intensity at Ex/Em = 643/675 nm.

Important: The following protocol is provided as an example for quantifying total RNA with Helixyte™ Red RNA HS. Warm all the components to room temperature before opening. No data are available for the mutagenicity or toxicity of Helixyte™ Red RNA HS stain. Because this reagent binds to nucleic acids, it should be treated as a potential mutagen and handled with appropriate care. The DMSO stock solution should be handled with particular caution as DMSO is known to facilitate the entry of organic molecules into tissues.

KEY PARAMETERS

Fluorescence microplate reader

Cutoff	665 nm
Emission	675 nm
Excitation	640 nm
Recommended plate	Solid black

PREPARATION OF STANDARD SOLUTIONS

For convenience, use the Serial Dilution Planner:
<https://www.aatbio.com/tools/serial-dilution/17696>

RNA Standard

Dilute 2 mg/mL RNA standard (Component C) to 10, 8, 6, 4, 2, 1, 0.5 ng/µL in RNA Assay Buffer (Component B).

PREPARATION OF WORKING SOLUTION

Add 2.5 µL Helixyte™ Red RNA HS (Component A) into 1 mL of RNA Assay Buffer (Component B) and mix well. Protect the working solution

from light by covering it with foil or placing it in the dark.

Note: 1 mL of working solution is enough for 5 tests.

Note: We recommend preparing this solution in a plastic container rather than glass, as the dye may adsorb to glass surfaces. For best results, this solution should be used within a few hours of its preparation.

SAMPLE EXPERIMENTAL PROTOCOL

Table 1: Layout of RNA standards and test samples in a solid black 96-well microplate. RS=RNA Standards (RS1-RS7, 100 to 5 ng/well); BL=Blank Control; TS=Test Samples

BL	BL	TS	TS
RS1	RS1	TS	TS
RS2	RS2	TS	TS
RS3	RS3		
RS4	RS4		
RS5	RS5		
RS6	RS6		
RS7	RS7		

Table 2: Reagent composition for each well.

Well	Volume	Reagent
RS1-RS7	10 µL	Serial Dilutions (100 to 5 ng/well)
BL	10 µL	Assay buffer
TS	10 µL	Test Sample

1. Add 200 µL of dye working solution to each well of RNA Standard, blank control, and test samples. For a 384-wellplate, add 100 µL of dye working solution into each well instead.
2. Prepare RNA Standards (RS), blank controls (BL), and test samples (TS) according to the layout provided in Tables 1 and 2. For a 384-well plate, use 5 µL of RNA standards or test samples per well instead of 10 µL.
3. Incubate the reaction at room temperature for 5 minutes, protected from light.
4. Monitor the fluorescence intensity with a fluorescence plate reader at Ex/Em = 640/675 nm (cut off at 665 nm).

EXAMPLE DATA ANALYSIS AND FIGURES

We recommend using the Online Linear Regression Calculator which

can be found at:

<https://www.aatbio.com/tools/linear-logarithmic-semi-log-regression-onlinecalculator/>

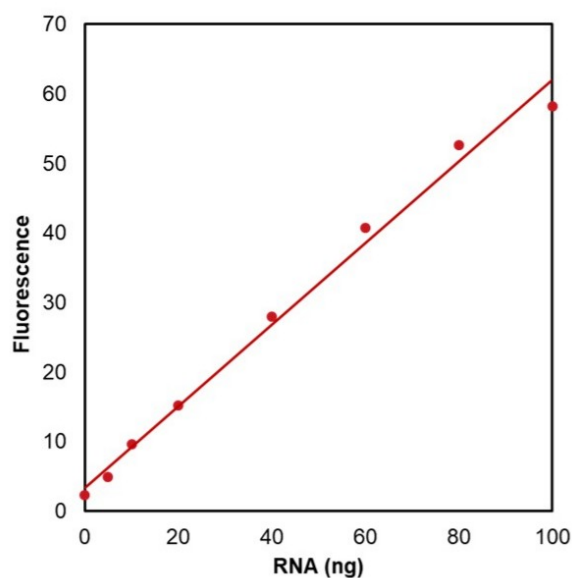


Figure 1. RNA dose response was measured with Helixyte™ Fluorimetric RNA Quantitation Assay Kit *High Sensitivity* in a 96-well solid black plate.

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