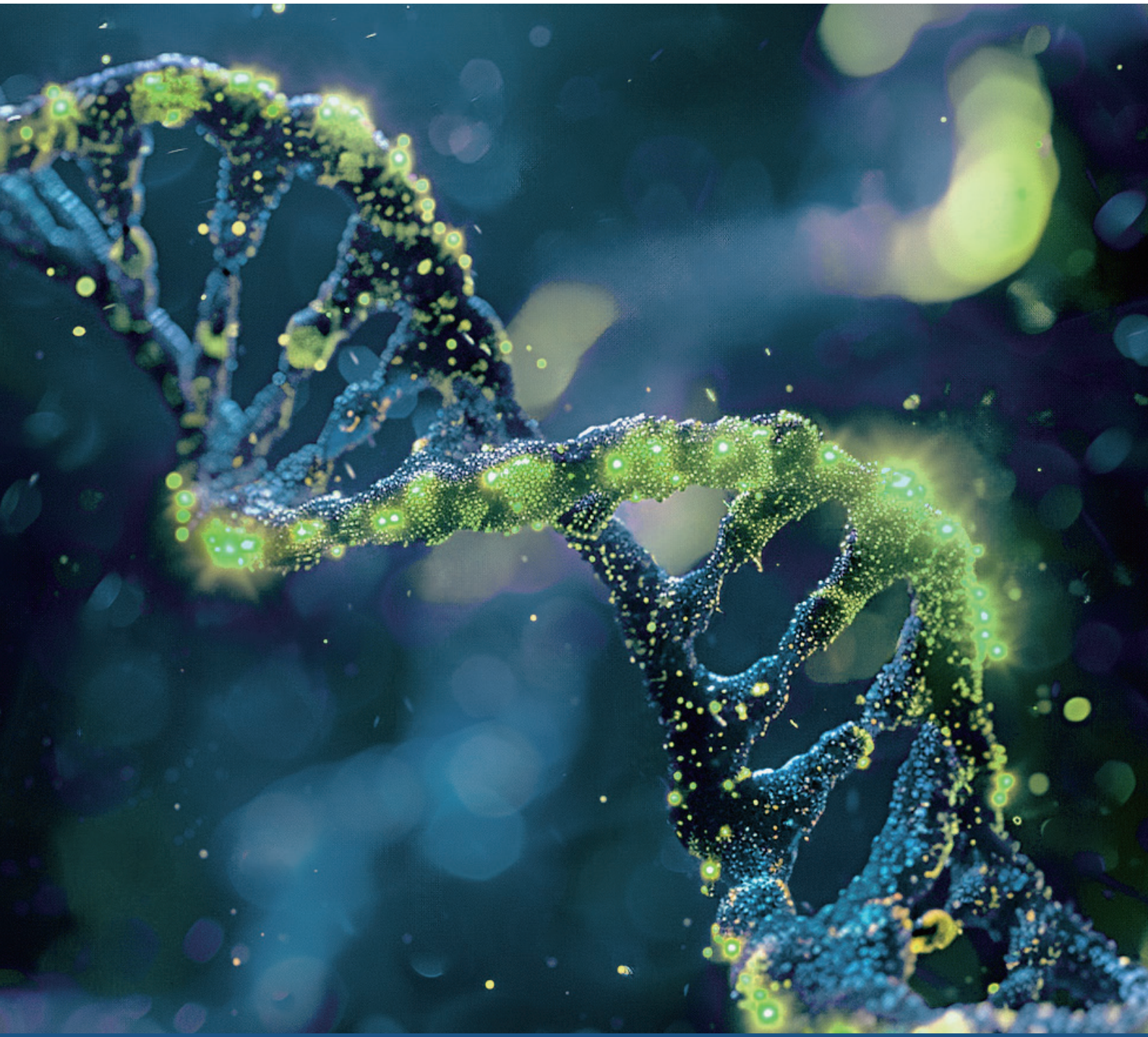
ALLSHENG



High-Throughput Sequencing NGS Assistant

Feyond-F100 Fluorescence Microplate Reader

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The library quality is crucial for the data quality produced by high-throughput sequencing (NGS), and underestimating or overestimating the library quality can seriously affect the effectiveness of sequencing.

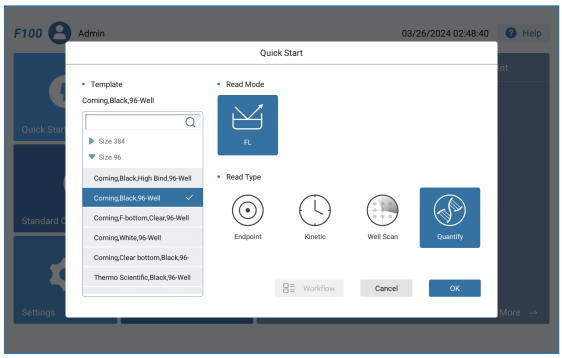
At present, the most commonly used quantitative reagent is the fluorescent dye with Picogreen as the main component. It can only emit fluorescence when it binds to the double stranded DNA, and the generated fluorescence is proportional to the DNA concentration within a certain range, thus achieving accurate quantitation of DNA samples.

The most common instruments used with such reagents are fluorometers and fluorescence microplate readers. Common fluorometers include Thermo's Qubit4 and Qubit Flex, as well as Allsheng's own products Fluo-200 and Fluo-800. However, the throughput of fluorometers is relatively low, and can only achieve up to 8 channels. To detect samples in 8 channels simultaneously, standard calibration for 8 channels is also required, which is very wasteful of reagents. When using a fluorescence microplate reader as a detection tool, although the detection throughput increases, there is a problem of establishing a standard curve. Due to the significant influence of the environment on fluorescent dyes, a new standard curve needs to be established each sample detection. If the standard curve is not ideal, a new standard curve needs to be prepared, which increases the experimental burden.

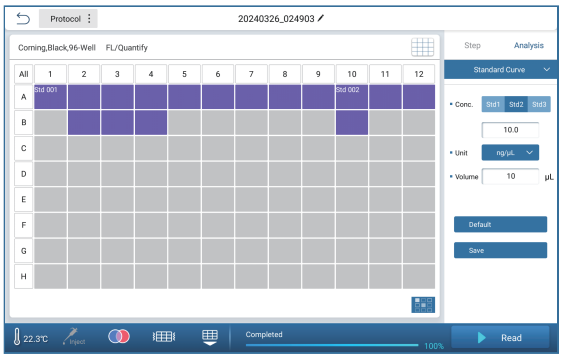
Allsheng Feyond-F100 fluorescence microplate reader can not only perform fluorescence experiments such as cell viability, GFP, RFP, ORAC, and Ca^{2+} flow analysis, but also add quantitative detection functions that combine the convenience of the fluorometer with the high-throughput of the microplate reader. No standard curve needs to be established, and only calibration of standard points is required to achieve precise quantitation of 96 samples, with a minimum detection limit of 0.1 ng/μL (10 μL sample size).

Software Features

01 Besides fluorescence detection, a quantitative mode has been added

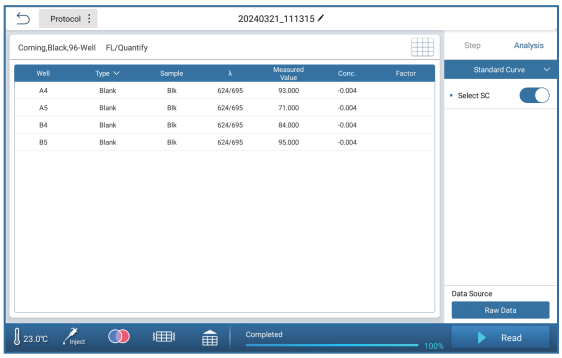


02 Simply lay out two standard points to complete curve calibration



03 Built-in standard curves, simply calling up, also can create curves to save

04 Simply enter the sample volume and see the results at a glance



Excellent Performance

Dilute the 10 ng/μL standard gradient to 8, 6, 4, 2, 1, 0.4, and 0.2 ng/μL. When the sample size is 1 μL or 10 μL, the deviation between Feyond-F100 and Q is within 10%.

Volume	Sample type	Q quantitation	Feyond-F100	Difference	Deviation
10	Standard	0.189	0.1941	-0.0051	-2.7%
10	Standard	0.378	0.3854	-0.0074	-2.0%
10	Standard	0.982	0.9739	0.0081	0.8%
10	Standard	1.93	1.9675	-0.0375	-1.9%
10	Standard	4	4.0883	-0.0883	-2.2%
10	Standard	5.94	6.0796	-0.1396	-2.4%
10	Standard	7.78	7.8077	-0.0277	-0.4%
10	Standard	10.2	10.0803	0.1197	1.2%
1	Standard	1.03	1.095	-0.065	-6.3%
1	Standard	1.92	1.997	-0.077	-4.0%
1	Standard	4.1	4.12	-0.02	-0.5%
1	Standard	6.18	6.043	0.137	2.2%
1	Standard	8.14	7.895	0.245	3.0%
1	Standard	10.5	10.059	0.441	4.2%

Table 1 Standard Testing Results

When testing library samples and cfDNA samples, the deviation between Feyond-F100 and Q can also be within 10%.

Volume	Sample type	Q quantitation	Feyond-F100	Difference	Deviation
1	Library	104	105.079	-1.079	-1.0%
1	Library	74.2	74.102	0.098	0.1%
1	Library	77.4	75.628	1.772	2.3%
1	Library	22.6	22.245	0.355	1.6%
1	Library	Out of range	148.53	/	/
1	Library	52.4	53.455	-1.055	-2.0%
1	Library	84.6	87.402	-2.802	-3.3%
1	Library	11.5	10.8	0.7	6.1%
2	cfDNA	0.456	0.482	-0.026	-5.7%
2	cfDNA	1.27	1.287	-0.017	-1.3%
2	cfDNA	0.625	0.622	0.003	0.5%
2	cfDNA	0.758	0.794	-0.036	-4.7%
2	cfDNA	1.45	1.522	-0.072	-5.0%
2	cfDNA	1.48	1.542	-0.062	-4.2%

Table 2 Sample Testing Results

Feyond-F100 is an economical, single fluorescence microplate reader. Its high-quality optical path design makes it have excellent optical performance. This product is designed for bioluminescence scientific research.

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