User Guide
High Sensitivity RNA (NR1) Cartridge Kit (C105111/C105211)

A. Specifications

Specification	Description
L.O.D	1 ng/μL
Sample Number	100 runs*
Shelf Life	4 months

B. Kit Components and Storage Conditions

Item	Storage Condition
High Sensitivity RNA Cartridge (C105111/C105211)	15-27°C (Do Not Freeze)
5X Lower Marker (C109120-100A, 100 μL)	Short-Term (≤ 3 months): 4-27°C Long-Term (> 3 months): -20°C
10X Separation Buffer (C104409-10X, 15mL)	4-27°C
10X Dilution Buffer (C104408-10X, 8mL)	4-27°C
Mineral Oil (C104404, 8mL)	4-27°C

C. Cartridge Unpacking Preparation

New cartridge must pass HV check and calibration before use. Please follow unpacking guide to unpack and use 5-times diluted 5X Lower Marker to do calibration.

D. Buffer and Marker Preparation

Buffer Preparation

- Separation Buffer (1X): 10X dilution from the stock with DEPC-treated water.
- Dilution Buffer (1X): 10X dilution from the stock with DEPC-treated water.

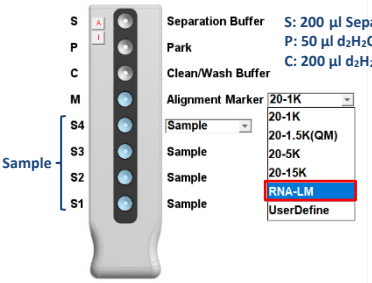
Marker Preparation

- Lower Marker (1X): 5X dilution with1X dilution buffer.

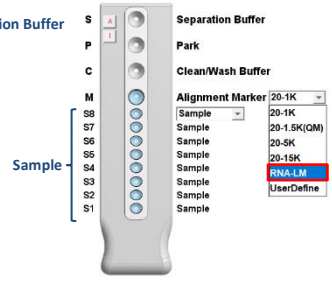
Material	Volume (μl)
5X Lower Marker (C109120-500A)	5
1X Dilution Buffer	20
Total Volume	**25**

Qsep$_{100}$

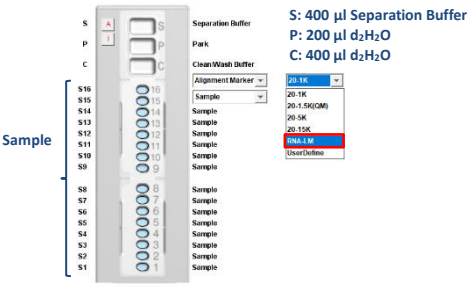
Qsep$_1$ 8-well tray



Qsep$_1$ 12-well tray



Qsep$_1$-Plus 16+3-well tray



E. Sample preparation

Heat-denature RNA samples at 70°C for 2 minutes and put on ice at least 5 minutes.

Sample Volume Requirements

0.2 ml tube: 20 μL Micro Vial (C104250): 2 μL

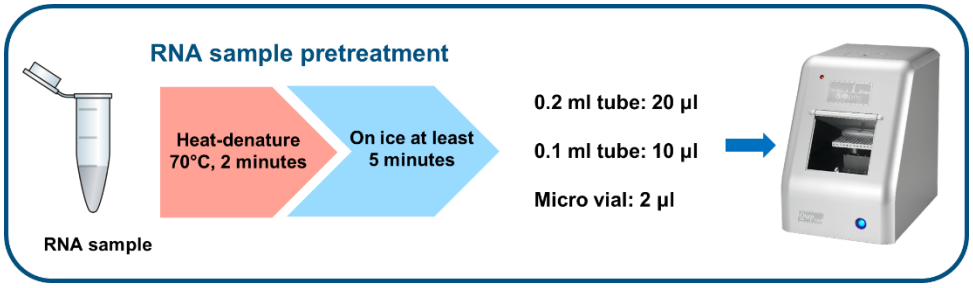
0.1 ml tube: 10 μL 16+3-Well Tube (C104254): 10 μL

Recommended Sample Concentration

RNA sample: 1-10 ng/μL

***NOTE: If sample concentration is over 10 ng/μL, dilute sample with 0.1-1X dilution buffer based on buffer condition.**

***NOTE: If sample is eluted in RNase-free water, add dilution buffer to make the sample into ≥ 0.1X dilution buffer condition.**



Contact Information:
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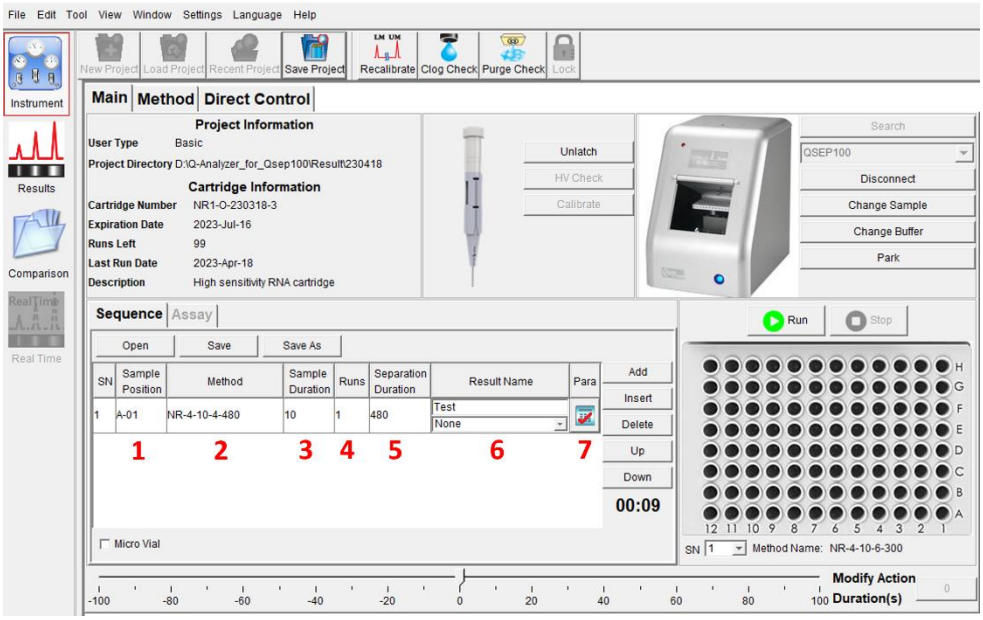
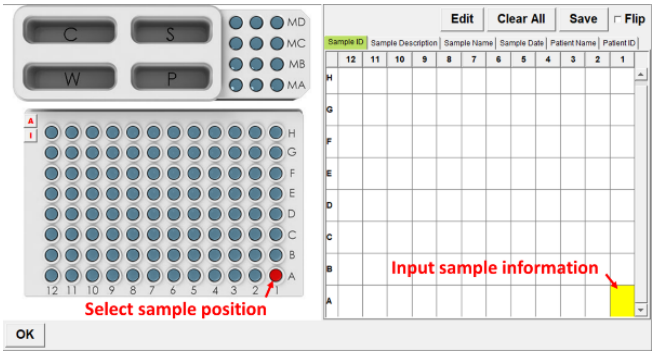
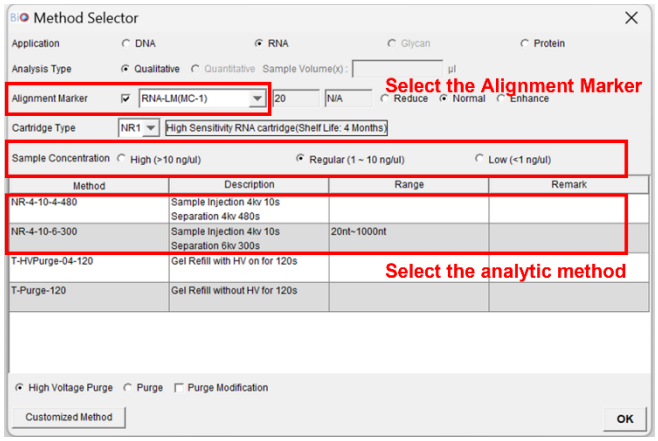
F. Software Operation



1. Place the sample and select the corresponding position, and then input sample information (optional).



2. Select the alignment marker and the analytic method in Method Selector.



*NOTE: Based on sample concentration to adjust injection condition.

Sample concentration	High (2kV, 10s)	Regular (4kV, 10s)	Low (8kV, 10s)
RNA	> 10 ng/μl	1~10 ng/μl	0.5~1 ng/μl

3. Sample Duration: adjust the sample injection time to increase/decrease injection amount.

*NOTE: Do not set the injection time over 20 sec.

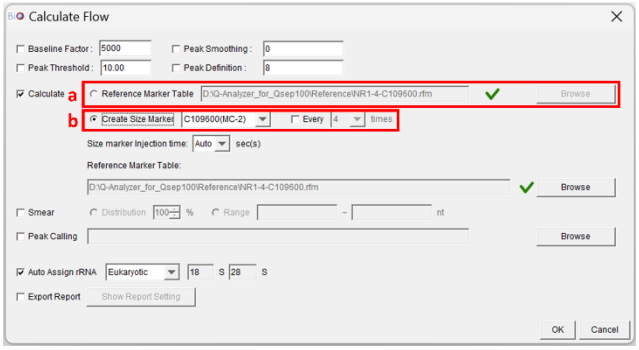
4. Runs: repetition time.

5. Separation Duration: adjust the duration to extend/reduce the separation time.

*NOTE: Step 3-5 are optional.

6. Input the result name for result file.

7. Click "Para"  . Choose (a) reference or (b) create size marker to do the calculations.



*NOTE: When using function "Create Size Marker", select C109600 to pair with the Lower Marker.

8. Click "Run"  to start analysis.

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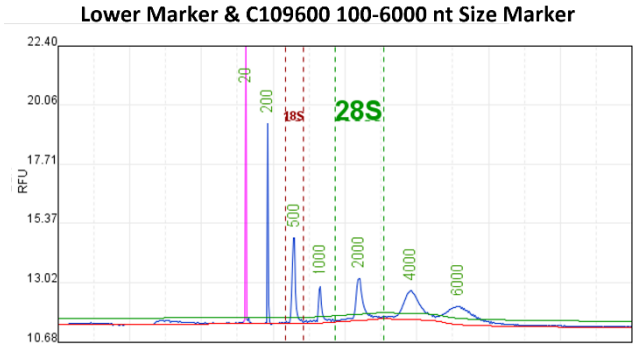
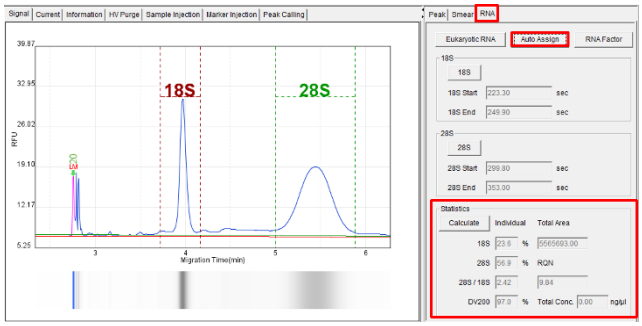
G. Results

- **Lower Marker & Size Marker**



- **RNA Quality Number (RQN)**

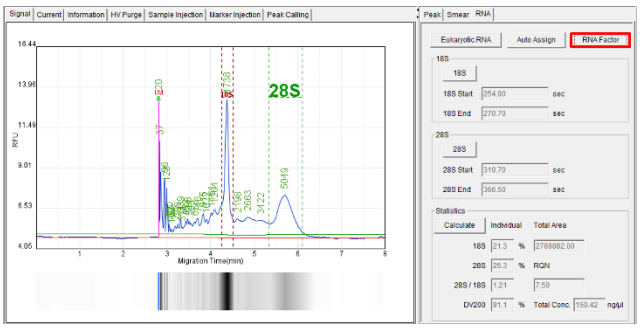
The software will identify 18S and 28S automatically. Then, the 28S/18S ratio and RQN value from 1 to 10 will be provided. If the software does not assign 18S and 28S regions, click “Auto Assign”



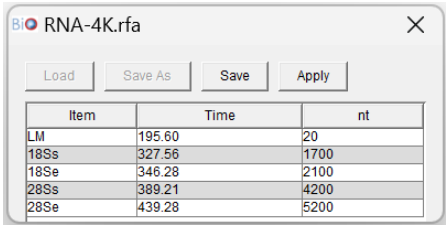
- **18S/28S identification**

If the software cannot identify 18S and 28S regions correctly, please follow the instructions below.

1. Adjust the 18S and 28S regions by manually dragging red line (18S) and green line (28S).
2. Adjust the “RNA factor” to identify 18S/28S region for total RNA from same species.



3. Enter the lower marker and 18S/28S start and end times according to the result. Click “Save” and “Apply”.

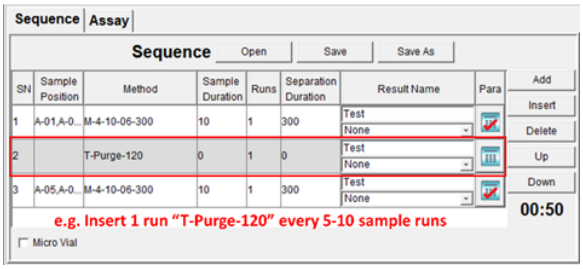


H. Troubleshooting

Please ensure the whole system is working well and the operation is following the instructions.

Sometimes, there are some unknown substances in PCR reagent buffer or other kit buffer. These substances may cause unstable current in sample injection or separation steps. Here is a list of solutions to help fix the occurrence.

1. Use dilution buffer to dilute the sample.
2. Centrifuge the sample for a while to make the residues accumulate at the bottom of the tube.
3. Insert a “T-Purge-120” method between sample runs. E.g., Insert a “T-Purge-120” every 5-10 sample runs.



I. Cartridge Discard

Please wear gloves before discarding cartridge.

1. Bend the cartridge tip.
2. Open the cap on gel reservoir and remove the inner cap.
3. Pour the gel into the chemical waste container.
4. Cartridge can be thrown into the bin.

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