User Guide
High Sensitivity Kilo Base Cartridge Kit (C105153/C105253)

A. Specifications

Specification	Description
DNA Sizing Range	20-60,000 bp
DNA Detection Range	20-165,000 bp
L.O.D	20 pg/μL
Resolution*	10-50 bp
Sample Number	100 runs
Shelf Life	4 months

*Best resolution is determined by the 15-622 DNA Size Marker (C109200).

B. Kit Components and Storage Conditions

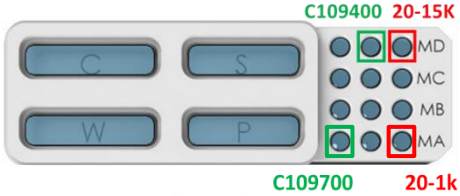
Item	Storage Condition
Standard Cartridge (C105106/C105206/C105806)	4-27°C (Do Not Freeze)
20-1,000 bp Alignment Marker (C109100-500A, 100 μL)	Short-Term (≤ 6 months): 4-27°C Long-Term (> 6 months): -20°C
Separation Buffer (C104406, 50mL)	4-27°C
Dilution Buffer (C104405, 15mL)	4-27°C
Mineral Oil (C104404, 8mL)	4-27°C

C. Cartridge Unpacking Preparation

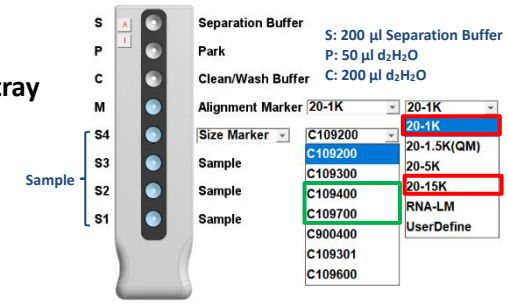
New cartridge must pass HV check and calibration before use. Please follow unpacking guide to unpack and use C109100-500A Alignment to do calibration.

D. Buffer and Marker Preparation

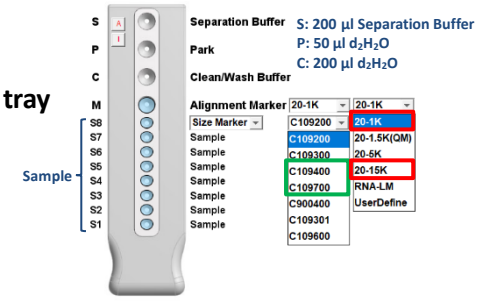
*Qsep*100



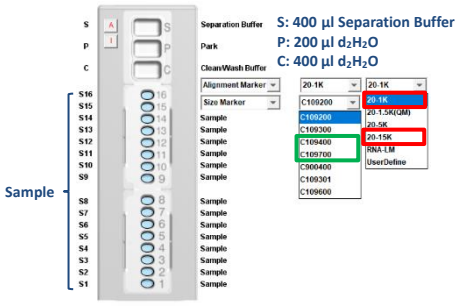
*Qsep*1 8-well tray



*Qsep*1 12-well tray



*Qsep*1-Plus
16+3 well tray



E. Sample Preparation

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

Best Detection Range: 0.5-5 ng/μl

***NOTE: When sample concentration is over 5 ng/μl, dilute sample 10X with 0.1X dilution buffer. If sample is eluted in water, add dilution buffer to make the sample into 0.2X or 0.1X dilution buffer condition.**

E-1. Sample size within range from 20-15,000 bp

Markers required:

20 bp-15,000 bp Alignment Marker (C109110): 20 μl

2X diluted 100-1,0000 bp Size Marker (C109400): 20 μl

Materials	Volume (μl)
Size Marker (100-10,000 bp) (C109400)	10
Dilution Buffer (C104402)	10
Total	20

E-2. Sample size within range from 20-165,000 bp

Markers required:

20 bp-1,000 bp Alignment Marker (C109100): 20 μl

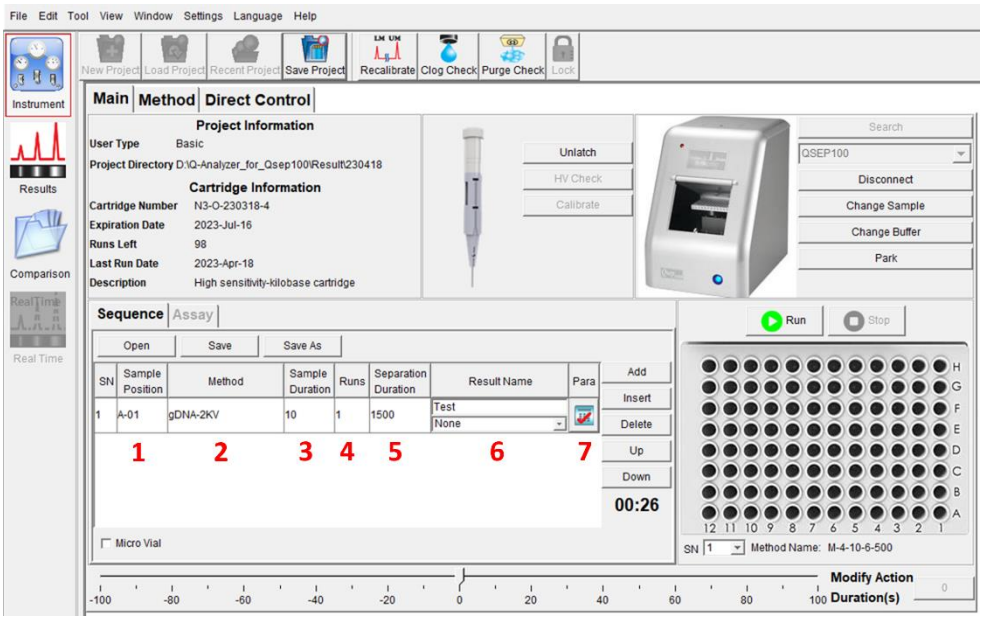
5X diluted 500 bp-23 kb Size Marker (C109700): 20 μl

Materials	Volume (μl)
Size Marker (500 bp-23 kb) (C109400)	4
Dilution Buffer (C104402)	16
Total	20

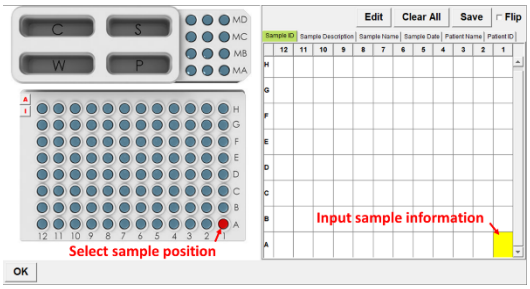
Contact Information:
Company Name: BiOptic Inc.
Address: (23141) 5F., No.6, Ln. 130, Minquan Rd., Xindian District, New Taipei City, Taiwan (R.O.C)
Tel: +886-2-2218-8726, Fax: +886-2-2218-8727, E-mail: service@bioptic.com.tw

User Guide
High Sensitivity Kilo Base Cartridge Kit (C105153/C105253)

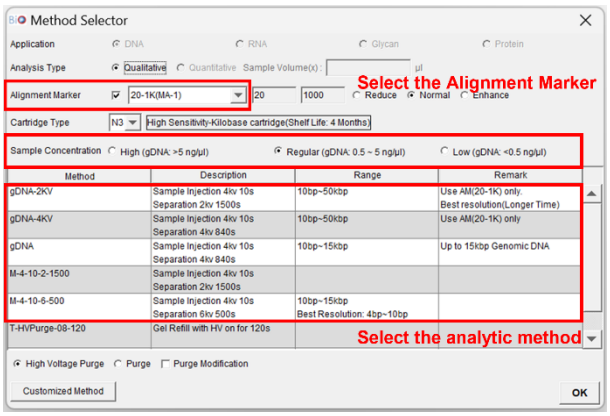
F. Software Operation



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



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



***NOTE: The sizing range can reach 165 kb when 20-1k is used and paired with C109700 size marker and "gDNA-2KV" and "gDNA-4KV" methods are selected.**

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

Sample concentration	High (2kV, 10s)	Regular (4kV, 10s)	Low (8kV, 10s)
Genomic DNA	> 5 ng/μL	0.5~5 ng/μL	0.1~0.5 ng/μL

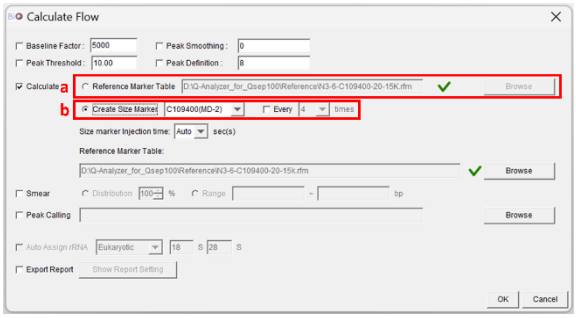
3. Sample Duration: adjust the sample injection time to increase/decrease injection amount.

***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 to use (a) reference or (b) create size marker to do the calculation.



***NOTE: To analyze sample over 15 kb, please use 20-1k paired with C109700 size marker. C109700 must be run for every sequence when "gDNA-2KV" and "gDNA-4KV" methods are used to get sizing result up to 165 kb.**

8. Click "Run"  to start analysis.

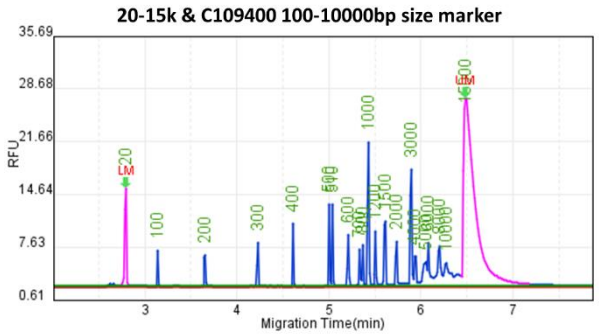
Contact Information:
Company Name: BiOptic Inc.
Address: (23141) 5F., No.6, Ln. 130, Minquan Rd., Xindian District, New Taipei City, Taiwan (R.O.C)
Tel: +886-2-2218-8726, Fax: +886-2-2218-8727, E-mail: service@bioptic.com.tw

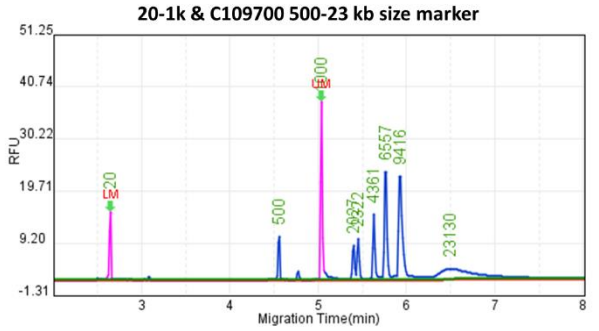
User Guide

High Sensitivity Kilo Base Cartridge Kit (C105153/C105253)

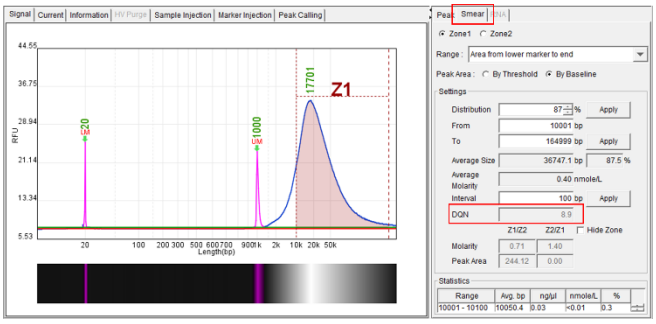
G. Result and Application

- **Alignment Marker & Size Marker**





- **Genomic DNA**



Use the smear function to set up a user-defined threshold for DNA Quality Number (DQN) calculation. DQN from 1-10 can be used as a reference to check the integrity of genomic DNA.

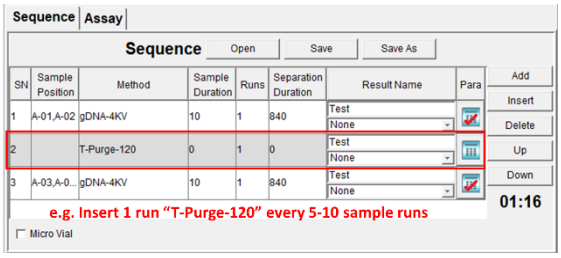
H. Troubleshooting

Please ensure that the system is working well, and the operation follows the instructions first.

Sometimes, there will be some residues left in DNA sample after extraction. These residues might cause unstable current at 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 several sample runs.

   E.g., insert 1 run “T-Purge-120” every 5-10 sample runs.



I. Cartridge Discard

Please wear gloves before discarding cartridge.

Gel reservoir

Cartridge tip

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.

Contact Information:
Company Name: BiOptic Inc.
Address: (23141) 5F., No.6, Ln. 130, Minquan Rd., Xindian District, New Taipei City, Taiwan (R.O.C)
Tel: +886-2-2218-8726, Fax: +886-2-2218-8727, E-mail: service@bioptic.com.tw