

# User Guide

## Kilo Base (S3) Cartridge Kit (C105106/C105206/C105806)

### A. Specifications

Specification	Description
DNA Sizing Range	20-60,000 bp
DNA Detection Range	20-165,000 bp
L.O.D	0.1 ng/μL
Resolution*	10-50 bp
Sample Number	200 runs
Shelf Life	6 months

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

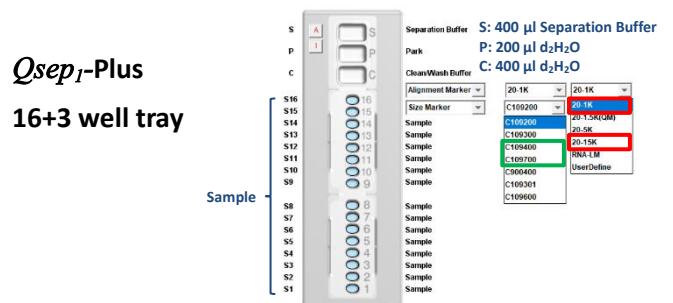
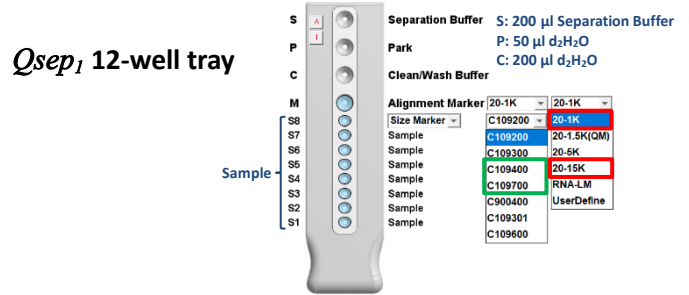
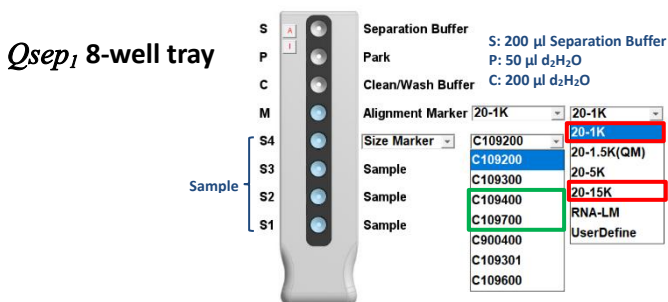
### B. Kit Components and Storage Conditions

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/C104403, 250mL)	4-27°C
Dilution Buffer (C104405, 15mL/C104402, 50mL)	4-27°C
Mineral Oil (C104404, 8mL/C104401, 25mL)	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



### 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: 2.5-50 ng/μl

**\*NOTE: If sample concentration is over 50 ng/μl, dilute sample 10X with 1X dilution buffer. If sample concentration is between 2.5 to 50 ng/μl, dilute sample 10X with 0.1X dilution buffer.**

**\*NOTE: 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 range from 20 bp to 15,000 bp

Marker required:

20 bp-15,000 bp Alignment Marker (C109110): 20 μl  
100 bp-10,000 bp Size Marker (C109400): 20 μl

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

Markers required:

20 bp-1,000 bp Alignment Marker (C109100): 20 μl  
500 bp-23,000 bp Size Marker (C109700): 20 μl

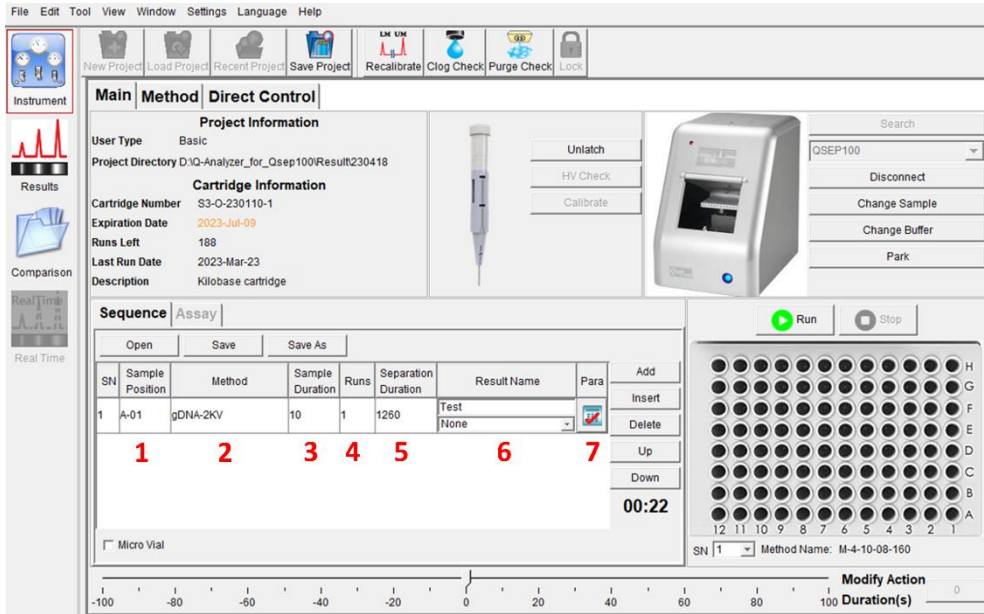
#### Contact Information:

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

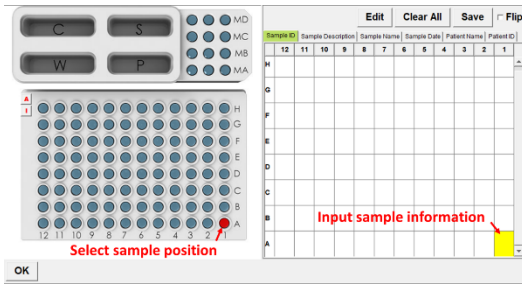
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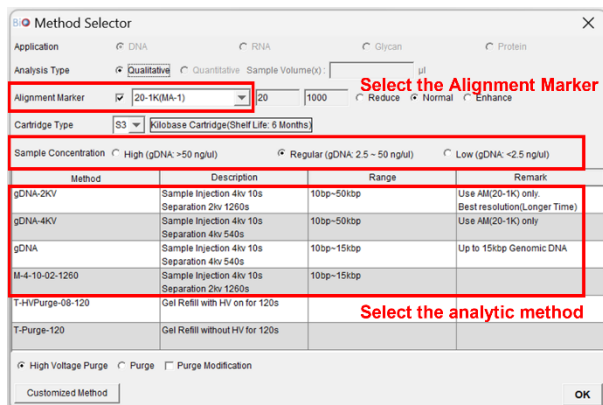
### F. Software Operation



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



- Select the alignment marker and the analytic method on Method Selector.

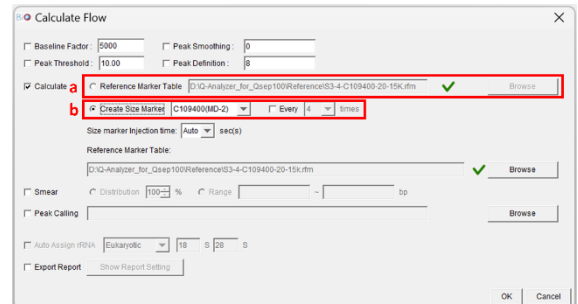


**\*NOTE:** The sizing range can reach 165 kb when 20-1k is used and paired with C109700 size marker and "gDNA-2KV" and "gDNA-4kV" method are selected.

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

Sample concentration	High (2kV, 10s)	Regular (4kV, 10s)	Low (8kV, 10s)
Genomic DNA	> 50 ng/μl	2.5~50 ng/μl	0.5~2.5 ng/μl

- Sample Duration: adjust sample injection time to increase/decrease injection amount.  
**\*NOTE: Do not set the injection time over 20 sec.**
- Runs: repetition time.
- Separation Duration: adjust the duration to extend/reduce the separation time.  
**\*NOTE: Step 3-5 are optional.**
- Input the result name for result file.
- 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.

- Click "Run" to start analysis.

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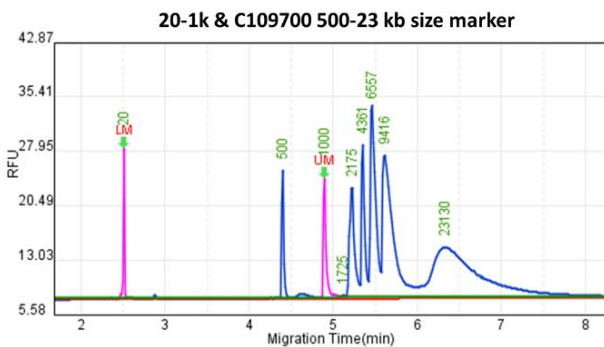
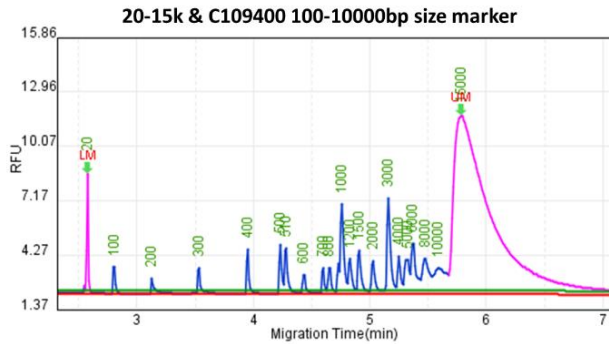
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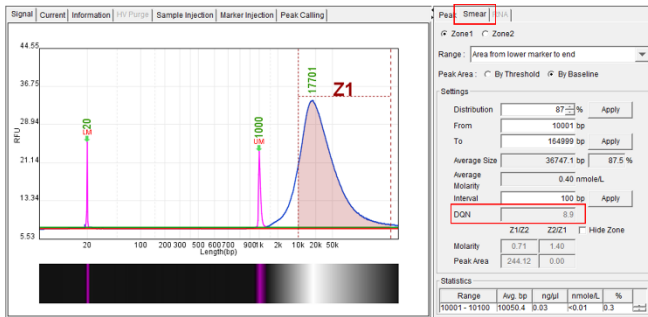
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#### G. Result and Application

##### 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 is following 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.

Sequence	Assay	Open	Save	Save As				
SN	Sample Position	Method	Sample Duration	Runs	Separation Duration	Result Name	Para	Add
1	A-01.A-02	gDNA-4KV	10	1	540	Test	None	Insert
2		T-Purge-120	0	1	0	Test	None	Delete
3	A-03.A-0...	gDNA-4KV	10	1	540	Test	None	Up
								Down

e.g. Insert 1 run "T-Purge-120" every 5-10 sample runs

00:51

Micro Vial

#### 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.

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