SOP for Allsheng Auto-Pure 32A and 96 Nucleic Acid Purification System *Ver: 2204*

Blood gDNA Isolation Kit (Beads)

(BW-MGD2311-A32 and A96)

CE

IVD For In VitDiagnostic Use Only

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EC REP

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BEIWO Blood gDNA Mini Prep Kit (Beads) is designed to isolate high-quality genomic DNA from blood. It combines optimized lysis conditions and high-performance magnetic beads to provide a fast and convenient blood DNA isolation method. Purified DNA can be directly used for downstream applications such as PCR, qPCR, and next-generation sequencing (NGS). MGD2311-A32 is compatible with BEIWO BW Express 16, Allsheng Auto-Pure 32A; MGD2311-A96 is compatible with Hamilton, Beckman Biomek, Tecan, Thermo KingFisher, Allsheng Auto-Pure 96 and other similar nucleic acid purification systems.

KIT CONTENTS

① **BW-MGD2311-A32**

Catalog#	Well position	BW-MGD2311-A32-10	BW-MGD2311-A32-11	BW-MGD2311-A32-12
Preps	-	1 x 32	10 x 32	20 x 32
Buffer BBL	**-**	8 mL	70 mL	140 mL
Beads	**Column 2/8**	100 µL	100 µL	100 µL
Buffer MKB	**Column 3/9**	600 µL	600 µL	600 µL
DNA Wash Buffer	**Column 4/10**	600 µL	600 µL	600 µL
DNA Wash Buffer	**Column 5/11**	600 µL	600 µL	600 µL
Elution Buffer	**Column 6/12**	100 µL	100 µL	100 µL
Proteinase K	-	0.8 mL	7 mL	14 mL
8-strip Tip Comb	-	4	40	80

Note： Buffer BBL and Proteinase K are bottled reagents.

② **BW-MGD2311-A96**

Catalog#	Plate position	BW-MGD2311-A96-10	BW-MGD2311-A96-11	BW-MGD2311-A96-12
Preps	-	1 x 96	4 x 96	10 x 96
Buffer BBL	-	22 mL	90 mL	220 mL
Beads	3	100 µL	100 µL	100 µL
Buffer MKB	4	600 µL	600 µL	600 µL
DNA Wash Buffer	5/6	600 µL	600 µL	600 µL
DNA Wash Buffer	5/6	600 µL	600 µL	600 µL
Elution Buffer	8	100 µL	100 µL	100 µL
Proteinase K	-	2.2 mL	8.8 mL	22 mL
96-Well Plate	-	1	4	10
96-Well Tip Comb	-	1	4	10

Note： Buffer BBL and Proteinase K are bottled reagents.

STORAGE

The kit should be stored dry and at room temperature (15–25°C). Store **Proteinase K** at -20°C to 8°C is recommended. The kit can be stored for at least 12 months without showing any significant reduction in performance, capacity, or quality of separation.

EXPECTED USAGE

For nucleic acid extraction, enrichment, purification and other steps. The processed product is used for clinical in vitro detection.

BEFORE STARTING

☑ Operate in an environment with the appropriate biosafety laboratory level (e.g BSL-2 or higher level) and wear appropriate personal protective equipment (e.g. gowns, gloves, goggles) when working with clinical specimens.

☑ Ultraviolet disinfection of the Nucleic Acid Purification Instrument prior to use is recommended.

☑ Buffer may form precipitates upon storage, dissolve precipitates at 37°C before use.

☑ **Self-provided reagent：Isopropanol**

SAFETY INFORMATION

☑ When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets.

☑ The product should be used in strict accordance with the instructions. If it is not used

in accordance with the regulations, it may cause pollution to the environment.

☑ Products are disposable, do not reuse, and the used product should be placed in the designated position in time.

☑ Exceeding the expiration date of this product, the performance of the product may be reduced, so it should be used within the expiration date.

☑ This kit can only be used for in vitro experiments, and not for clinical, therapeutic and in vivo experiments in animals. If it is not used in accordance with the regulations, the company will not be responsible for the consequences arising therefrom.

PROCEDURE （BW-MGD2311-A32）

1. Transfer **200 µL whole blood sample（anticoagulant）** into a 1.5 mL centrifuge tube, add **20 µL Proteinase K** and **200 µL Buffer BBL**. Mix well by vortexing.

   a. rapid method： oscillate at room temperature for 5min.

   b. conventional method (for high purity gDNA isolation)**：** incubate at 55℃ for 30 minutes.

2. **Optional ：** If RNA-free genomic DNA is required, cool the sample to room temperature, add **5 µL** 20 mg/mL **RNase A** (Self-provided, BEIWO Cat: BW-B0051) to each sample. Mix well by vortexing and incubate at room temperature for 5 minutes.

3. If necessary, gently shake the pre-loaded 96-well plate to let the reagent or magnetic beads assemble at the bottom of the plate. Carefully remove the sealing foil of the 96-well plate, aspirate **400 µL pre-treated blood sample** and **400 µL Isopropanol** (self-provided) into the deep well in **Column 1/7**, then put the plate in a BEIWO BW Express 16 or an Allsheng Auto-Pure 32A Nucleic Acid Purification System.

4. Install **two 8-strip Tip Combs** for each plate.

5. Run the program described in **Table 1**.

6. After the program is completed, take out the 96-well plate and aspirate the **gDNA solution** from **Column 6/12** into new sterile tube. The gDNA solution is ready to be used or can be stored at -20℃ or -80℃.

Table 1. Recommended program for Auto-Pure 32A Nucleic Acid Purification System

Step	Well	Name	Mix time (min)	Magnet (sec)	Wait time (min)	Vol. (µL)	Mix speed (1-10)	Temp. (℃)	Mix pos (0-100%)	Mix amp (1-100%)	Magnet pos (0-100%)	Magnet speed (1-10)
1	2	Beads	0.5	10	0	100	10	OFF	0	80	0	1
2	1	Bind	5	30	0	800	10	OFF	0	80	0	1
3	3	Wash1	1	10	0	600	10	OFF	0	80	0	1

4	4	Wash2	1	10	0	600	10	OFF	0	80	0	1
5	5	Wash3	1	10	1	600	10	OFF	0	80	0	1
6	6	Elute	5	20	0	100	10	85	0	80	0	1
7	2	Drop	0.5	0	0	400	5	OFF	0	80	0	1

Note: Set 'Heating synchronization', 'Cool Fan Disabled', 'Cooling synchronization', and 'Drying Fan Disabled'

PROCEDURE（BW-MGD2311-A96）

1. Transfer **200 µL whole blood sample（anticoagulant）** into a 1.5 mL centrifuge tube, add **20 µL Proteinase K** and **200 µL Buffer BBL**. Mix well by vortexing.

   a. rapid method： oscillate at room temperature for 5min.

   b. conventional method (for high purity gDNA isolation)**：** incubate at 55℃ for 30 minutes.

2. **Optional:** If RNA-free genomic DNA is required, cool the sample to room temperature, add **5 µL** 20 mg/mL **RNase A** (Self-provided, BEIWO Cat: BW-B0051) to each sample. Mix well by vortexing and incubate at room temperature for 5 minutes.

3. Aspirate **400 µL pre-treated blood sample** and **400 µL Isopropanol** (self-provided) into a blank **96-Well Plate** (provided), then put the plate on **position 2** of the Auto-Pure 96 instrument.

4. Carefully remove the sealing foil of a 96-well plate named **Beads**, put a **96-Well Tip Comb** into the plate, and put them on **position 3** of the Auto-Pure 96 instrument together.

5. Carefully remove the sealing foils of **other 96-well plates** and put them on the **corresponding positions** according to the following **Table 2**.

Table 2. 96-well plates setting in the Auto-Pure 96 Nucleic Acid Purification System

Plate position	Catalog#	Sample / Reagent	Volume (µL)	Note
2	96-Well Plate	**Pre-treated Sample**	400	Added by user.
		Isopropanol	400	Added by user.
3	Beads	Beads	100	Pre-loaded
		96-Well Tip Comb		Put in the Beads plate
4	Buffer MKB	Buffer MKB	600	Pre-loaded
5	DNA Wash Buffer	DNA Wash Buffer	600	Pre-loaded
6	DNA Wash Buffer	DNA Wash Buffer	600	Pre-loaded

8	Elution Buffer	Elution Buffer	100	Pre-loaded

7. Run the program described in **Table 3**.
8. After the program is completed, take out the **Elution Buffer** plate on **position 8**, aspirate the **gDNA solutions** into new sterile tubes.
9. The gDNA solution is ready to be used or can be stored at -20℃ or -80℃.

Table 3. Blood gDNA extraction program of the Auto-Pure 96 Nucleic Acid Purification System

Step	Name	Plate	Mix Time (min)	Mix Amp (%)	Wait Time (min)	Vol. (μL)	Mix Speed (1-10)	Temp. (℃)	Seg-ments (0-5)	1st Seg. time (s)	2nd Seg. time (s)	3rd Seg. time (s)	4th Seg. time (s)	5th Seg. time (s)	Cycle times (1-10)	Mag. speed (1-10)	Lip-lvl (0-30s)	Anti-Splash (0-30s)
1	Load	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Beads	3	0	80	0	100	1	OFF	1	1	-	-	-	-	7	1	0	0
3	Bind1	2	1	30	0	800	10	OFF	0	-	-	-	-	-	-	-	0	0
4	Bind2	2	2	80	0	900	1	OFF	5	15	15	15	15	15	5	1	0	0
5	Wash1	4	1	30	0	600	8	OFF	1	1	-	-	-	-	2	1	0	0
6	Wash2	5	1	30	0	600	8	OFF	1	1	-	-	-	-	2	1	0	0
7	Wash3	6	1	30	0.5	600	8	OFF	1	1	-	-	-	-	2	1	0	0
8	Elute1	8	1	80	0	100	10	70	0	-	-	-	-	-	-	-	0	0
9	Elute2	8	4	80	0	100	3	70	2	10	10	-	-	-	4	1	10	0
10	Unload	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Set 'Heating synchronization', 'Cool Fan Disabled', 'Cooling synchronization', and 'Drying Fan Disabled'

Appendix

Index of Symbols

IVD	In vitro diagnostic medical device
LOT	Lot number
	Manufacturer
	Attention, see instruction for use
EC REP	Authorized representative in the European Community
	Date of manufacture
	Use until year & month (Expiration date)
CE	CE mark

LIMITED USE AND WARRANTY

This product is warranted to perform as described in its labeling and in BEIWO's literature when used in accordance with instructions. No other warranties of any kind, express or implied, including, without limitation, implied warranties of merchantability or fitness for a particular purpose, are provided by BEIWO. BEIWO's sole obligation and purchaser's exclusive remedy for breach of this warranty shall be, at the option of BEIWO, to replace the products, BEIWO shall have no liability for any direct, indirect, consequential, or incidental damage arising out of the use, the results of use, or the inability to use it product. For technical support or learn more product information, please contact us at 400-115-2855 or visit our website at www.beiwobiomedical.com

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