

## Cell free DNA Isolation Kit (Beads)

### (BW-MGD2320-A20)

**BEIWO** Cell free DNA Isolation Kit (Beads) is designed for rapid and efficient purification of cell free DNA (cf-DNA, ct-DNA) from 1 to 4 mL of plasma, serum, or other bodily fluids. Purified cf-DNA can be used directly for PCR analysis, NGS (next generation sequencing) and so on. The kit is compatible with various high-throughput automated platforms, such as Allsheng Auto-Pure 10B, Auto-Pure 20A/B, Auto-Pure 24 and so on.

### KIT CONTENTS

| Catalog#                              | BW-MGD2320-A20-10 | BW-MGD2320-A20-11 | BW-MGD2320-A20-12 |
|---------------------------------------|-------------------|-------------------|-------------------|
| Preps (for 2mL sample)                | 20                | 100               | 200               |
| Lysis Buffer                          | 65 mL             | 320 mL            | 2 × 320 mL        |
| Proteinase K                          | 4.5 mL            | 25 mL             | 50 mL             |
| Beads                                 | 700 uL            | 3.5 mL            | 7 mL              |
| Wash Buffer                           | 25 mL             | 120 mL            | 240 mL            |
| Elution Buffer                        | 5 mL              | 15 mL             | 30 mL             |
| Tube Strip for Auto-Pure 20B          | 20                | 100               | 200               |
| Magnetic Rod's Tip for Auto-Pure 20B* | 2                 | 10                | 20                |

**Note:** One Magnetic Rod's Tip for Auto-Pure 20A/B can process 10 samples simultaneously. If the number of samples processed in a single batch is less than 10, additional magnetic rod's tips need to be purchased separately.

### STORAGE

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



## 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.
- Lysis Buffer A contains chaotropic salts, which may form reactive compounds when combines with bleach. Do not add bleach or acidic solutions directly to the preparation waste.
- Buffer may form precipitates upon storage, dissolve precipitates at 37°C before use.
- Ultraviolet disinfection of the Purification Instrument prior to use is recommended.
- **Materials not supplied: RNase-free tips and 1.5 mL centrifuge tube, 75% ethanol**

## PROCEDURE

The following protocol was designed for isolation of cf-DNA from 2 mL plasma, serum, or other bodily fluid samples. For different volumes of clinical samples, refer to the following table for Lysis Buffer, Proteinase K and Beads volumes, while the volumes of Wash Buffer and Elution Buffer in subsequent steps remained unchanged.

**Table 1 Recommended reagent volumes for different volumes of clinical samples**

| Sample (μL) | Lysis Buffer (μL) | Proteinase K (μL) | Beads (μL) |
|-------------|-------------------|-------------------|------------|
| 1000        | 1500              | 100               | 25         |
| 2000        | 3000              | 200               | 30         |

**Note:** Allsheng Auto-Pure 20 A/B Nucleic Acid Purification System can handle up to 2 mL clinical sample per run. When the sample volume is greater than 2 mL, divide the sample into appropriate volumes that are less than 2 mL and run parallel nucleic acid extractions.

1. In a biosafety cabinet, transfer the **specified volume of reagents** and **2000 μL clinical sample** into the **specified positions** of a **Tube Strip for Auto-Pure 20A/B** according to **Table 2**. Then put the tube strip into the Auto-Pure 20B Nucleic Acid Purification System.

**Note:** **Lysis Buffer** may form precipitates upon storage, dissolve precipitates at 37°C before use. **Proteinase K** and **Beads** should be vortexed and mixed well before use.

2. Install the **Magnetic Rod's Tip for Auto-Pure 20B** on the purification system.
3. Run the program recommended in **Table 3**.
4. After the program is completed, take out the Tube Strips and aspirate the **cf-DNA solutions** from **position 7** into new nuclease-free tubes. The cf-DNA solutions are ready to be used or can be stored at -20°C or -80°C.



**Table 2. Sample / Reagent volumes and their Positions in the Tube Strip**

| Tube Strip Position | Sample / Reagent            | Volume (uL) |
|---------------------|-----------------------------|-------------|
| <b>1</b>            | <b>Clinical Sample</b>      | 2000        |
|                     | Lysis Buffer                | 3000        |
|                     | Proteinase K                | 200         |
|                     | Beads                       | 30          |
| <b>2</b>            | Wash Buffer                 | 1000        |
| <b>3</b>            | 75% Ethanol (Self-provided) | 1000        |
| <b>7</b>            | Elution Buffer*             | 100         |

**Note:** The volume of Elution Buffer can be adjusted upon requirements. At least 80 uL Elution Buffer needs to be added.

**Table 3. Recommended program for cell free DNA isolation**

| Step | Well | Name  | Mix time (min) | Magnet (sec) | Wait time (min) | Vol. (pL) | Mix speed (1-10) | Temp. (°C) | Mix pos (0-100%) | Mix amp (1-100%) | Magnet pos (0-100%) | Magnet speed (1-10) |
|------|------|-------|----------------|--------------|-----------------|-----------|------------------|------------|------------------|------------------|---------------------|---------------------|
| 1    | 1    | Lysis | 20             | 300          | 0               | 5000      | 6                | 50         | 0                | 80               | 0                   | 1                   |
| 2    | 2    | Wash1 | 5              | 60           | 0               | 1000      | 4                | OFF        | 0                | 80               | 0                   | 1                   |
| 3    | 3    | Wash2 | 2              | 60           | 1               | 1000      | 4                | OFF        | 0                | 80               | 0                   | 1                   |
| 4    | 7    | Elute | 5              | 60           | 0               | 100       | 6                | 56         | 0                | 80               | 0                   | 1                   |
| 5    | 2    | Drop  | 0.5            | -            | -               | 1000      | -                | -          | 0                | 80               | -                   | -                   |

**Note:** Set ‘Heating synchronization’, ‘Cool Fan Disabled’, ‘Cooling synchronization’, and ‘Drying Fan Disabled’

#### 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.biomiga.com.cn](http://www.biomiga.com.cn)



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