【Product Name】 MagPure Forensic DNA Precast Kit (Auto Pure 96)

【Product Specification】48 Preps/Kit, 96 Preps/Kit

【Intended Use】

This product is specially designed for DNA extraction from bone, hair, fingernail, seminal strain, ect forensic samples. Especially designed for **forensic detection**. The obtained DNA can be directly used for PCR, STR detection and other down stream applications

【Main Composition】

Product	Contents and volume	D6359D-F-96	D6359D-F-48
Buffer BGL		80 ml	40 ml
Buffer ATL		80 ml	40 ml
Proteinase K		110 mg	48 mg
Protease Dissolve Buffer		10 ml	5 ml
DTT Powder		235 mg	235 mg
Elution Buffer		5 ml	5 ml
96-Tip (AS)		1	1
Sample Plate 1	500μl Buffer BST1	1	1
Sample Plate 2	500μl Buffer BST1	1	1
Wash Plate 1	20μl MagPure Particles N 500μl Buffer GW2	1	1
Wash Plate 2	500μl Buffer GW2	1	1
Elute Plate	60μl Elution Buffer	1	1

【Storage conditions and validity】

Proteinase K and DTT Powder should be stored at 2–8°C upon arrival. However, short-term storage (up to 12 weeks) at room temperature (15–25°C) does not affect their performance. The remaining kit components can be stored at room temperature (15–25°C) and are stable for at least 18 months under these condition..

【Applicable Instrument】

Nucleic Acid Extraction Machine such as Auto Pure 96 (Allsheng), Magmix 96 and similar extractors.

【Preparation before Use】

- Add 5.5ml (96 Preps) or 2.4ml (48 Preps) Protease Dissolve Buffer to the bottle of Proteinase K and store at -20~8°C after dissolve.
- Add 1.5ml Elution Buffer to each bottle of DTT dry powder, vortex to mix throughly. Use or store at -20°C.

【Bone Grinding】

The quality of STR maps from bone samples depends on the type of bone, age, and environmental storage conditions. Soil conditions and moisture have a profound effect on DNA quality. The success of the extraction process depends on the degree of grinding, which can be achieved by physical grinding or with a bit operated at a low speed to reduce heat build-up. The extraction process works best for fine-ground bone meal, where cells scattered throughout the bone matrix are easier to digest.

Bone meal grinder: Pre-cool teeth or bones with liquid nitrogen, and pre-cool bone meal grinders with liquid nitrogen. Transfer the sample to the bone meal grinder, beat it hardly with a hammer several times, pre-cool the grinder with liquid nitrogen, beat it several times until the sample forms a partial fine powder and small bone fragments, transfer the sample to the container, gently shake, and continue grinding the large sample into powder. Gently oscillate in the container to pick out the fine powder for extraction process.

Bead mill: Please refer to the protocol of bead mill.

【Part 1: Sample Preparation】

1. Bone/Teeth:

   One sample plate (150mg bone or teeth) : Transfer 100~150mg bone powder into a new 2.0ml centrifuge tube, add 400μl Buffer BGL, 4μl 1M DTT and 40μl Proteinase K, inverting several times. Mix by shaking at 1000-1500rmp at 55°C for 3~24 hours.

   Double sample plate (300mg bone or teeth) : Transfer 150~300mg bone powder into a new 2.0ml centrifuge tube, add 700μl Buffer BGL, 7μl 1M DTT and 40μl Proteinase K, inverting several times. Mix by shaking at 1000-1500rmp at 55°C for 3~24 hours.

   Other Forensic Sample:

   One sample plate (other forensic samples): Transfer samples such as hair, fingernail, seminal strain, tissue, ect into a new 2.0ml centrifuge tube. Add 400μl Buffer ATL, 4μl 1M DTT, and 40μl Proteinase K, inverting several times. Mix by shaking at 1000-1500rmp at 55°C for 1~3 hours.

   Double sample plate (other forensic samples): Transfer samples such as hair, fingernail, seminal strain, tissue, ect into a new 2.0ml centrifuge tube. Add 700μl Buffer ATL, 7μl 1M DTT, and 40μl Proteinase K, inverting several times. Mix by shaking at 1000-1500rmp at 55°C for 1~3 hours.

2. Centrifuge at room temperature at 13,000 x g for 5 minutes to remove undigested impurities.

【Part 2: Auto Pure 96 nucleic acid extractor operation】

1. Take out the required components of the kit.
2. Inverting the Plate several times to re-suspend the magnetic beads. Pat the top of plate to make reagents fall back to the bottom of plate. Start the plate at table for 1 minute.
3. Remove the sealing bag and sealing film.

   One sample plate: Add 250~300μl supernatant to the hole of Sample Plate 1.

   Double sample plate: Divide the sample into two same parts, add 250~300μl supernatant to the hole of Sample Plate 1 and Sample Plate 2.
4. Insert the 96-tip into Sample Plate 1 and 96-well plate in to the machine. Turn on the machine and start D6359D-F-96 protocol.
5. After the extraction complete, ~ 30 minutes, the extraction is complete. Remove the 96-well plate and magnetic tip.
6. Transfer the purified DNA into a new 1.5ml centrifuge tube and store at -20~8℃.

【Auto Pure 96 program recommendation】

Name	Plate	Mix time (min)	Mix Speed 1-100%	Wait min	Volume (ul)	Mix Speed (1-10)	Magnet (0-5)	Repeat (1-10)	Magnet Speed (1-10)	Stay (min)	Hover (min)	1st Step Magnet	2nd step Magnet	3rd step Magnet
96-Tip	3	0	0	0	500									
Collect	3	0.3min	70%	0	500	7	3	1	1	0	0	3	3	3
Bind1	1	4 min	70%	0	800	7	3	4	5	0.5	0	10	10	10
Bind2	2	4 min	70%	0	800	7	3	4	5	0.5	0	10	10	10
Wash1	3	1 min	70%	0	500	7	3	2	2	0	0	3	3	3
Wash 2	4	1 min	70%	3min	500	7	3	2	2	0	0	3	3	3
Elution	8	5 min	70%	0	100	7	3	2	5	0	0	5	5	3
Drop	4	0.2 min	70%	0	500	7	0							