【Product Name】 MagPure Forensic DNA Precast Kit (Auto Pure 32)

【Product Specification】96 Preps/Kit, 16 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-TL-06	D6359D-TL-06-00
Purification times		96 Preps	16 Preps
Buffer BGL		80 ml	15 ml
Buffer ATL		80 ml	15 ml
Proteinase K		110 mg	22 mg
Protease Dissolve Buffer		10 ml	1.8 ml
DTT Powder		2 x 235 mg	235 mg
Elution Buffer		5 ml	5 ml
AS-Tip		12pcs	2pcs
2.0ml V bottom plate	Row 1/7: empty	6 plates	1 plate
	Row 2/8: 500µl Buffer BST1		
	Row 3/9: 500µl Buffer BST1		
	Row 4/10: 20µl MagPure Particles N 500µl Buffer GW2		
	Row 5/11: 500µl Buffer GW2 (ethanol ~350ul)		
	Row 6/12: 60µl Elution Buffer		

【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 32 (Allsheng), Magmix 32 and similar extractors.

【Preparation before Use】

- Add 5.5ml (96 Preps) or 1.1ml (16 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. **Single well sample (150mg bone or teeth) :** transfer 100~150mg bone meal 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 water bath for 3~24 hours.

   Double well sample (300mg bone or teeth) : transfer 150~300mg bone meal 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 water bath for 3~24 hours.

   Single well sample (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 water bath for 3~24 hours..

   Double well sample (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 water bath for 3~24 hours.

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

【Part 2: Auto Pure 32 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.
4. **Single well sample:** Add 250~300μl supernatant to the hole of row 2 and 8.

   Double well sample: Divide the sample into two same parts, add 250~300μl supernatant to the hole of row 2,8,3 and 9.
5. Insert the magnetic tip (AS-Tip) and 96-well plate in to the machine (hole A1 is placed at the left inner corner). Turn on the machine and start D6359D-TL-06 protocol
6. After the extraction complete, ~ 30 minutes, the extraction is complete. Remove the 96-well plate and magnetic tip.
7. Transfer the purified DNA into a new 1.5ml centrifuge tube and store at -20~8℃.

【Auto Pure 32 program recommendation】

Name	Well	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							