

**【Product Name】** MagPure Universal HW DNA Kit

**【Product specifications】** 48 Preps, 96 Prep, 480 Prep

**【Intended Use】**

This product provides a simple and fast solution for extracting high molecular weight DNA from animal tissues, cultivated cells, exfoliated cells, and other biological samples. The DNA purified by this method includes genomic DNA, mitochondrial DNA, viral DNA (such as HBV), or DNA from other parasitic microorganisms. The obtained DNA can be directly used for down stream applications such as PCR, chip analysis, virus DNA detection, NGS, Nanopore sequencing etc.

**【Main Composition】**

Cat.No.	D638101	D638102	D638103
Purification Times	48 Preps	96 Preps	480 Preps
MagPure Particles	1.5 ml	3.0 ml	15 ml
Buffer ATL Minus	20 ml	40 ml	180 ml
Buffer SDS	1.8 ml	5 ml	20 ml
Buffer AL	15 ml	30 ml	150 ml
Buffer BD*	6 ml	12 ml	100 ml
RNase A	15 mg	30 mg	150 mg
Proteinase K	30 mg	60 mg	300 mg
Protease Dissolve Buffer	3 ml	5 ml	30 ml
Buffer GW1 *	44 ml	88 ml	2 x 220 ml
Buffer GW2*	20 ml	50 ml	2 x 100 ml
Buffer GW3	50 ml	90 ml	450 ml
Elution Buffer	10 ml	20 ml	60 ml

**【Storage conditions and Validity】**

Proteinase K, RNase A and MagPure Particles should be stored at 2–8°C upon arrival. However, short-term storage (up to 24 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 conditions.

**【Prefilled Plate/Single Strip Component】**

Components		D6381-TL-06	D6381-S-48
RNase A		30 mg	15 mg
Proteinase K		60 mg	30 mg
Protease Dissolve Buffer		5 ml	3 ml
Buffer SDS		5 ml	1.8 ml
Buffer ATL Minus		40 ml	20 ml
Buffer AL		30 ml	15 ml
TL-Tip		12	24
V bottom plate/ Reagent strip	Row 1/7: 450µl Buffer BD	6 plates	48 strips
	Row 2/8: 600µl Buffer GW1		
	Row 3/9: 600µl Buffer GW1		
	Row 4/10: 600µl Buffer GW2 25µl MP		
	Row 5/11: 600µl Buffer GW3		
	Row 6/12: 120µl Elution Buffer		

**【Preparation before Use】**

- Add 0.6ml (48Preps), 1.2ml (96 Preps) or 6.0ml (480 Preps), Protease Dissolve Buffer to the RNase A, and store at -20~8°C after dissolve.
- Add 1.5ml (48Preps), 3.0ml (96 Preps) or 15ml (480 Preps), Protease Dissolve Buffer to the Proteinase K, and store at -20~8°C after dissolve
- Dilute Buffer BD with 24ml (48 Preps), 48ml (96 Preps) or 40 ml (480 Preps) 100% ethanol and store at room temperature
- Dilute Buffer GW1 with 56ml (48 Preps), 112ml (96 Preps) or 2 x 280ml (480 Preps) 100% ethanol and store at room temperature
- Dilute Buffer GW2 with 80ml (48 Preps), 200ml (96 Preps) or 2 x 400ml (480 Preps) 100% ethanol and store at room temperature

## 【 Protocol Part 1: Small amount extraction of tissues, cells, and whole blood】

### 1. Sample preparation.

- **Animal tissue:** Take 10~30mg tissue samples into a glass homogenizer, add 0.3ml Buffer ATL Minus, slowly squeeze up and down for 5 times. Transfer 0.25ml homogenized solution to a 1.5ml centrifuge tube, add 25µl Proteinase K and 18µl Buffer SDS, mix by inverting for several times, incubate at 55°C for 30-120 minutes or until the sample is completely digested. If there exist obvious undigested impurities, centrifuge at 10,000 x g for 3 minutes. Transfer 0.25ml supernatant to a new tube.
- **Cultivated cells or exfoliated cells (<math>5 \times 10^6</math> cells):** Take an appropriate amount of culture medium, urine, ascites or other liquid samples into a centrifuge tube, centrifuge at 500 x g for 10 minutes to collect cells, and remove the supernatant. Add 220µl Buffer ATL Minus, vortex to resuspend cells, add 25µl Protease K and 10µl Buffer SDS, mix by inverting for several times, incubate at 55°C for 30-60 minutes.
- **Blood or body fluid samples:** Take 250µl whole blood, white membrane layer, lymphocyte suspension, swab soaking solution, tissue homogenate or other liquid samples into a centrifuge tube, add 25µl proteinase K and 18µl buffer SDS, mix by inverting for several times, and place at room temperature for 15 minutes.
- **Fermentation broth or culture broth (negative bacteria):** Transfer 1.0~2.0ml bacterial culture broth, swab soaking solution, tissue homogenate, body fluid, etc. (<math>2 \times 10^9</math> bacteria) to a 2.0ml centrifuge tube, centrifuge at 10,000 x g for 3 minutes to collect bacteria. Discard the culture broth, add 220µl Buffer ATL Minus and vortex to resuspend the bacteria. Add 15µl Buffer SDS and 15µl Proteinase K, mix well and incubate at 65°C for 20 minutes.

### 2. Add 10µl RNase Solution to the solution, mix well, and place at room temperature for 10-30 minutes.

Samples rich in RNA such as liver, kidney or cultivated cells are recommended to be placed at room temperature for 30 minutes.

### 3. Add 250µl Buffer AL, mix by inverting for 10 times, incubate at 55°C for 10 minutes, during which invert and mix several times.

For viscous samples, vortex for 10 seconds to form homogeneous solution.

### 4. Add 25µl MagPure Particles and 500µl buffer BD, mix by inverting for 15~30 times, place at magnetic stand for 1 minute, and remove the supernatant.

### 5. Add 750µl Buffer GW1 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.

### 6. Add 750µl Buffer GW1 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.

### 7. Add 750µl Buffer GW2 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.

### 8. Add 750µl Buffer GW2 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.

### 9. Do not remove the centrifuge tube from the magnetic stand, add 750µl Buffer GW3 slowly, do not disperse the magnetic beads, place for 60 seconds, and be careful to remove the supernatant.

### 10. Add 100µl Elution Buffer, gently tap to drop the magnetic beads from wall and resuspend in Elution Buffer. Incubate with shaking (600-800rpm) at 55°C for 10 minutes. Place the tube to the magnetic stand for 2 minutes. Transfer the supernatant containing the purified DNA to a new centrifuge tube.

## 【 Part 2: Medium amount extraction】

### 1. Sample preparation.

- **Animal tissue:** Take 50~100mg tissue samples into a glass homogenizer, add 1.2ml Buffer ATL Minus, slowly squeeze up and down for 5 times. Transfer 1.0ml homogenized solution to a 5.0ml centrifuge tube, add 100µl Proteinase K and 70µl Buffer SDS, mix by inverting for several times, incubate at 55°C for 30-60 minutes or until the sample is completely digested. If there exist obvious undigested impurities, centrifuge at 10,000 x g for 3 minutes. Transfer 1ml supernatant to a new centrifuge tube.

- **Cultivated cells (<math>1 \times 10^8</math> cells):** Take an appropriate amount of culture medium, urine, ascites or other liquid samples into a centrifuge tube, centrifuge at 500 x g for 10 minutes to collect cells, and remove the supernatant. Add 1,000µl Buffer ATL Minus, vortex to resuspend cells, add 100µl Protease K and 50µl Buffer SDS, mix by inverting for several times, incubate at 55°C for 30~60 minutes.

- **Liquid samples (1ml):** Take 1,000µl whole blood, white membrane layer, lymphocyte suspension, swab soaking solution, tissue homogenate or other liquid samples into a centrifuge tube, add 100µl proteinase K and 70µl buffer SDS, mix by inverting for several times, and place at room temperature for 10 minutes.

- **Fermentation broth or culture broth (negative bacteria):** Transfer 1.0~2.0ml bacterial culture broth, swab soaking solution, tissue homogenate, body fluid, etc. (<math>1 \times 10^{10}</math> bacteria) to a 5.0ml centrifuge tube, centrifuge at 5,000 x g for 15 minutes to collect bacteria. Discard the culture broth, add 1,000µl Buffer ATL Minus and vortex to resuspend the bacteria. Add 50µl Buffer SDS and 100µl Proteinase K, mix well and incubate at 65°C for 30 minutes.

### 2. Add 40µl RNase Solution to the solution, mix well, and place at room temperature for 10-30 minutes.

Samples rich in RNA such as liver, kidney or cultivated cells are recommended to be placed at room temperature for 30 minutes, while blood and body fluid samples for 10 minutes.

### 3. Add 1ml Buffer AL, mix by inverting for 10~15 times, incubate at 55°C for 15 minutes, during which

invert and mix several times.

For viscous samples, vortex for 10 seconds to form homogeneous solution.

4. Add 100µl MagPure Particles and 2,000µl buffer BD, mix by inverting for 15~30 times, place at magnetic stand for 1 minute, and remove the supernatant.
5. Add 3,000µl Buffer GW1 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.
6. Add 3,000µl Buffer GW1 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.
7. Add 3,000µl Buffer GW2 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.
8. Add 3,000µl Buffer GW2 and vortex for 10 seconds. Place the tube to the magnetic stand for 1 minute. Then remove the supernatant.
9. Do not remove the centrifuge tube from the magnetic stand, add 3,000µl Buffer GW3 slowly, do not disperse the magnetic beads, place for 60 seconds, and be careful to remove the supernatant.
10. Add 200~300µl Elution Buffer, gently tap to drop the magnetic beads from wall and resuspend in Elution Buffer. Incubate with shaking (600-800rpm) at 55°C for 10 minutes. Place the tube to the magnetic stand for 2 minutes. Transfer the supernatant containing the purified DNA to a new tube.

**【 Part 3: Auto Purify by 16/32 channel nucleic acid extractor 】**

1. Bottled reagents: add the reagents to the 96 well plate following the above table of prefilled kit contents.  
Prefilled reagents: invert the 96 well plate to suspend the magnetic beads completely. Pat the plate to make reagents fall back to the bottom of plate. Stay the plate at table for 1 minute, remove the sealing pack and sealing film.
2. Add 450-500µl of mixture (from Part 1 Step 3) to each well of row 1/7.
3. Insert the magnetic tip (DA-Tip) and 96-well plate in to the machine (hole A1 is placed at the left inner corner). Turn on the machine and start the program.
4. About 40 minutes, extraction finish.
5. Take out the 96 well plate and magnetic tip comb.
6. Transfer DNA into a 1.5ml centrifuge tube and store at -20~-8°C.

**【 Program recommendation for Magen MagMix 16/32 extractor 】**

No.	Name	Well	Volume	Mix		Wait		Magnet			Magnet	Heat	
				Time	Speed	Time	Position	Up/Down	Surface	Bottom		Plate	Temp
1	Bind	1	900	360s	7	0	0	90s	0	0	Auto	/	/
2	Wash1	2	750	120s	7	0	0	90s	0	0	Auto	/	/
3	Wash2	3	750	120s	7	0	0	90s	0	0	Auto	/	/
4	Wash3	4	750	120s	7	0	0	60s	0	0	Auto	/	/
5	Wash4	5	750	0	8	0	0	60s	0	0	Auto	/	/
6	Elute1	6	100	250	8	0	0	0	0	0	Auto	6	55
7	Elute2	6	100	350s	6	0	0	90s	0	40	Auto	6	55
8	Remove	3	500	30s	8	0	0	0	0	0	Auto	/	/