

Rapid Total RNA Extraction Technology

—R4111 HiPure Total RNA Plus Kit

Magen HiPure Total RNA System adopts silica gel column purification method, which can quickly extract high-purity total RNA from cultured cells, animal tissues, and bacteria. **This product also combines unique DNA filtration technology (gDNA Remove Column) which can efficiently remove genomic DNA contamination.** The entire process does not require contact with phenol chloroform or the use of isopropanol precipitation. Multiple samples can be extracted within 20 minutes, and processing 96 samples only takes 2 hours. This series of products is currently the fastest and simplest for RNA extraction.

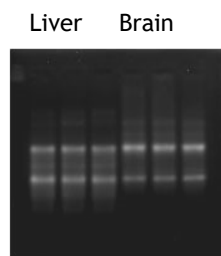
- Performance comparison with Trizol

	Trizol Reagent	HiPure Total RNA Plus Kit
Toxicity	High	Safe
Operation time	About 1 hour	< 20 minutes
Purity	OD260/280=1.6-2.0 OD260/230=1.1-1.8	OD260/280=1.9-2.0 OD260/230=1.8-2.5
Operation Requirement	High	Low
Stability	Moderate	Good
DNA Contamination	High	Low
DNA removal method	Phenol chloroform extraction	Filter removal
Additional reagents	Chloroform, isopropanol, 70% ethanol	Absolute ethanol, 70% ethanol

Experiment Data

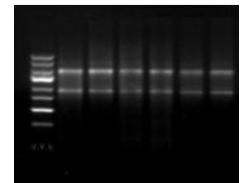
1. Extracting high-purity total RNA from protein/lipid rich samples

Take 10mg protein rich sample (chicken liver) and fat and sugar rich sample (chicken brain), extract them with HiPure Total RNA Plus Kit, and then analyze with 1.0% agarose gel electrophoresis (the results are shown on the right) and NaNodrop 2000 (the results are below). The results showed that the obtained RNA fragments were intact and non degradable, with high purity and yield. From the electrophoresis map, the purified RNA showed no DNA contamination.



Sample	Conc. $\mu\text{g}/\mu\text{l}$	260/280	260/230	Yield μg
10mg	0.2273	2.12	1.96	45.46
Chicken liver	0.2412	2.11	2.23	48.24
10mg	0.2351	2.11	1.75	47.02
10mg	0.0445	2.15	2.15	4.45
Chicken	0.0429	2.18	1.95	4.29
brain	0.0455	2.13	1.9	4.55

2. Rapid extraction of high-purity total RNA from cultured cells



Take 5×10^6 cultured cells and extract them by the kit. After extraction, analyze by electrophoresis and nanodrop, and calculate the entire extraction time. The electrophoresis results of total RNA are shown in the figure, which shows that the total RNA bands are clear and have good integrity. From OD, it can be seen that the obtained RNA has good yield and purity. The total time for processing 6 cultured cell samples is 25 minutes.

Sample	Conc. $\mu\text{g}/\mu\text{l}$	260/280	260/230	Yield μg	Operation Time
1	0.2273	2.12	1.96	45.46	
2	0.2412	2.11	2.23	48.24	The extraction time for 6 samples is 30 minutes
3	0.2351	2.11	1.75	47.02	
4	0.0445	2.15	2.15	4.45	
5	0.0429	2.18	1.95	4.29	
6	0.0455	2.13	1.9	4.55	

3. Comparison between R4111 and Qiagen RNeasy Plus Mini Kit

- Sample type: Animal tissues
- Elution volume: 100 μl
- Extraction method: manual
- Extraction time: 30 minutes
- Kits: R4111-02, Qiagen RNeasy Plus Mini Kit.
- Detection method: nanodrop

Experiment Data:

Sample	Sample amount	Conc. $\mu\text{g}/\mu\text{l}$	260/280	260/230	Yield μg	Company
Chicken Liver	40 mg	1.470	2.11	2.02	147	Qiagen
		1.561	2.14	2.01	156	Magen R4111
		1.470	2.15	2.1	147	
	20 mg	0.840	2.13	2.19	84	Qiagen
		0.985	2.11	2.14	98	Magen R4111
		0.947	2.11	2.27	95	
	10 mg	0.369	2.11	2.08	37	Qiagen
		0.413	2.13	2.24	41	Magen R4111
		0.466	2.13	2.07	47	
	5 mg	0.195	2.09	2.05	19	Qiagen
		0.210	2.12	2.09	21	Magen R4111

