

## NA-24T Animal Tissue RNA protocol RNA Isolation from wide variety of mouse tissues with the NA-24T



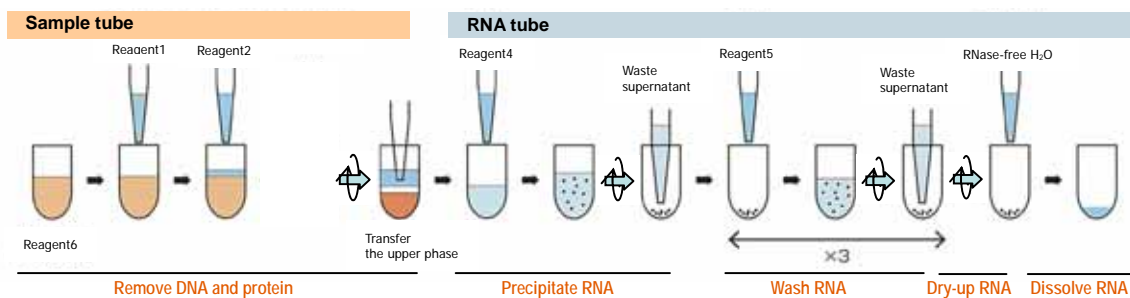
KURABO NA-24T is an automatic nucleic acid isolation system. It can isolate total RNA from various animal tissues with high quality, not only from liver and brain, but also adipose cells and spleen.

### Experiment

|                                      |   |
|--------------------------------------|---|
| <b>Sample</b>                        | Mouse tissues homogenized in 0.7ml of Tissue digesting reagent (KURABO, RR6025)<br>Tissue: Liver, heart, kidney, brain, lung, testis, spleen, thymus, intestine, thigh, brown adipose cell (BAT), white adipose cell (WAT). |
| <b>Sample amount</b>                 | ~150mg (White adipose cell)   |
| <b>Isolation system and protocol</b> | NA-24T<br>Tissue RNA protocol   |
| <b>Reagents kit and consumables</b>  | NR-712<br>Sample tube, QSP NC508; RNA tube, BioScience 13121;<br>Pipetting tip, T-1000RS  |
| <b>Chemical principle</b>            | Acid guanidine phenol chloroform (AGPC)-based method  |
| <b>Process</b>                       | Homogenize sample tissue in 0.7ml of Reagent6 and set to the instrument.  |

#### RNA isolation with NA-24T:

- Step1. Remove DNA and protein
- Step2. Precipitate RNA
- Step3. Wash RNA
- Step4. Dry-up RNA
- Step5. Dissolve RNA



|                        |  |
|------------------------|--|
| <b>Processing time</b> | 12 samples: 2.0hr<br>24 samples: 2.5hr<br>* Processing time when pipette tips are discarded at every steps |
|------------------------|--|

## Analysis methods

**Yield and purity calculation** Absorbance of 260nm was measured for each RNA solution by spectrometer. RNA yield was calculated as follows:  
 $A_{260} \times 40 \times \text{dilution factor} \times \text{final volume}$ .  
 RNA purity was evaluated by the ratio of  $A_{260}/A_{280}$ .

**Electrophoresis** Each 3ug of isolated RNA was heated at 65C for 10min, and electrophoresed on formalin denaturated 1% agarose gel in 1 X MOPS buffer at 100V for 20minutes.

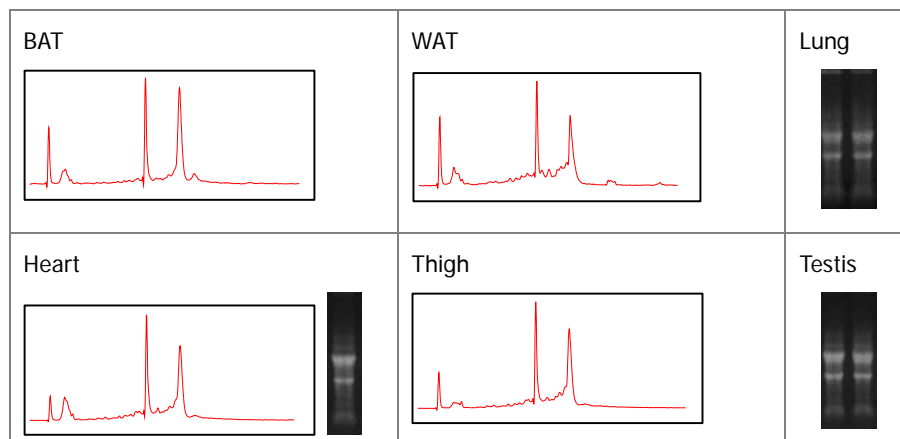
**Agilent 2100 Bioanalyzer analysis** RNA was analyzed according to the Agilent Bioanalyzer manufacturer's instruction.

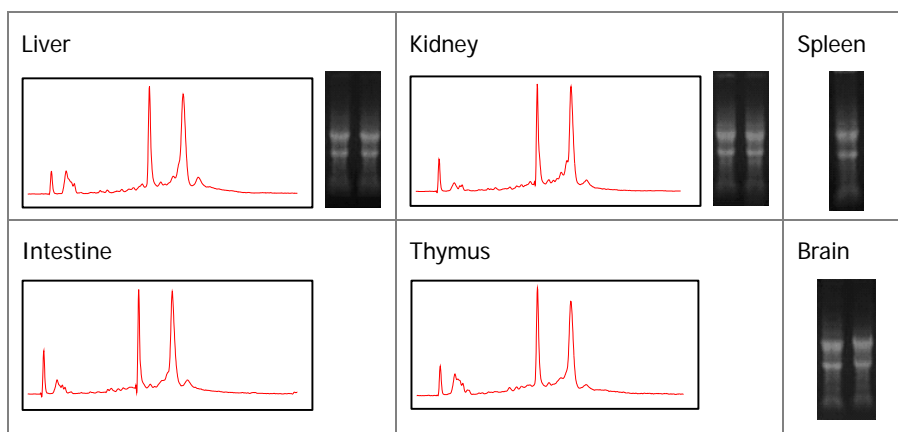
## Results

**The capacity for starting amount of mouse tissues**

| Tissue                   | Maximum starting amount (mg) | Total RNA yield (ug/mg tissue) | Purity (A260/A280) | A230/A260 |
|--------------------------|------------------------------|--------------------------------|--------------------|-----------|
| Brown adipose cell (BAT) | ~ 75                         | 0.85                           | 2.09               | 0.75      |
| White adipose cell (WAT) | ~ 150                        | 0.10                           | 2.24               | 1.12      |
| Thigh                    | ~ 40                         | 0.65                           | 2.01               | 0.78      |
| Liver                    | ~ 50                         | 4.3                            | 2.06               | 0.54      |
| Thymus                   | ~ 75                         | 2.2                            | 2.05               | 0.51      |
| Heart                    | ~ 40                         | 1.0                            | 2.16               | 0.61      |
| Kidney                   | ~ 75                         | 2.8                            | 2.01               | 0.48      |
| Testis                   | ~ 75                         | 1.8                            | 2.07               | 0.49      |
| Intestine                | ~ 75                         | 3.1                            | 2.16               | 0.49      |
| Brain                    | ~ 75                         | 0.70                           | 2.22               | 0.58      |
| Lung                     | ~ 75                         | 1.35                           | 2.04               | 0.62      |
| Spleen                   | ~ 50                         | 4.0                            | 1.99               | 0.58      |

**Electrophoresis and Bioanalyzer analysis**





### Ordering information

**DNA isolation system** NA-24T  
Animal Tissue RNA protocol

**Reagents kit** Animal Tissue RNA isolation reagents kit NR-712 (approx. for 600 preps)

| Reagent name                | Reagent No. (Code) | Content |
|-----------------------------|--------------------|---------|
| Sample pH adjusting reagent | 1 (RR1010)         | 1       |
| Phase separating reagent    | 2 (RR2025)         | 1       |
| RNA precipitating reagent   | 4 (PR4025)         | 1       |
| RNA washing reagent         | 5 (PR5050)         | 2       |
| Tissue digesting reagent    | 6 (RR6025)         | 2       |
| RNA washing reagent 2       | 7 (RR7050)         | 1       |

**Processing tube** Sample tube: QSP, NC508  
RNA tube: BioScience, 13121

**Pipetting tip** T-1000RS (96/rack, 10racks, sterilized)

### KURABO INDUSTRIES LTD.

Bio-Medical Department  
4-31, 2-chome, Kyutaro-machi, Chuo-ku  
Osaka 541-8581, Japan  
Phone: 81-6-6266-5010  
Fax: 81-6-6266-5011  
bio@ad.kurabo.co.jp