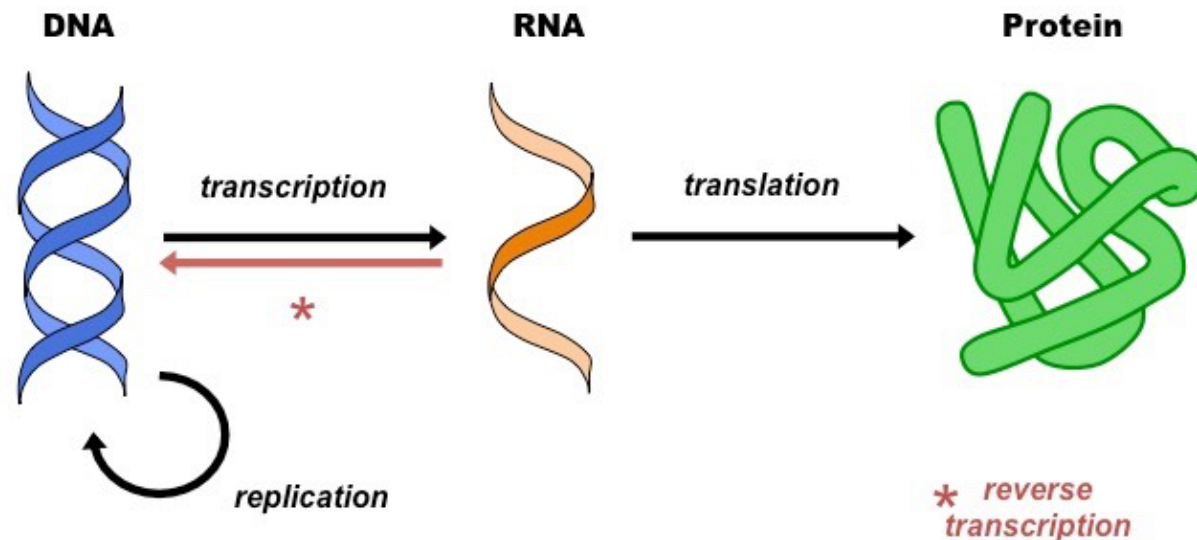




Total RNA Extraction From Tissue

RNA Isolation

- ❖ RNA is formed from DNA by a process called **transcription**
- ❖ The three most well-known types of RNA: mRNA, rRNA, and tRNA.
- ❖ Obtaining pure RNA is an essential step ?
- ❖ **Types of RNA isolation?**



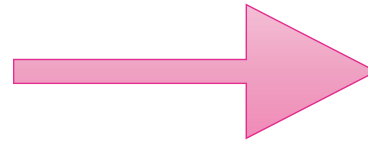
Method of RNA Isolation

- ❖ The basic procedures used in RNA purification are similar to those of DNA, **Why?**
- ❖ However, RNA isolation is more difficult than DNA purification, **Why?**



Method of RNA Isolation

- Organic extraction methods
- Filter- based spin basket formats
- Magnetic particle methods.



The GOAL is to..
extract **pure intact RNA**



Practical Part



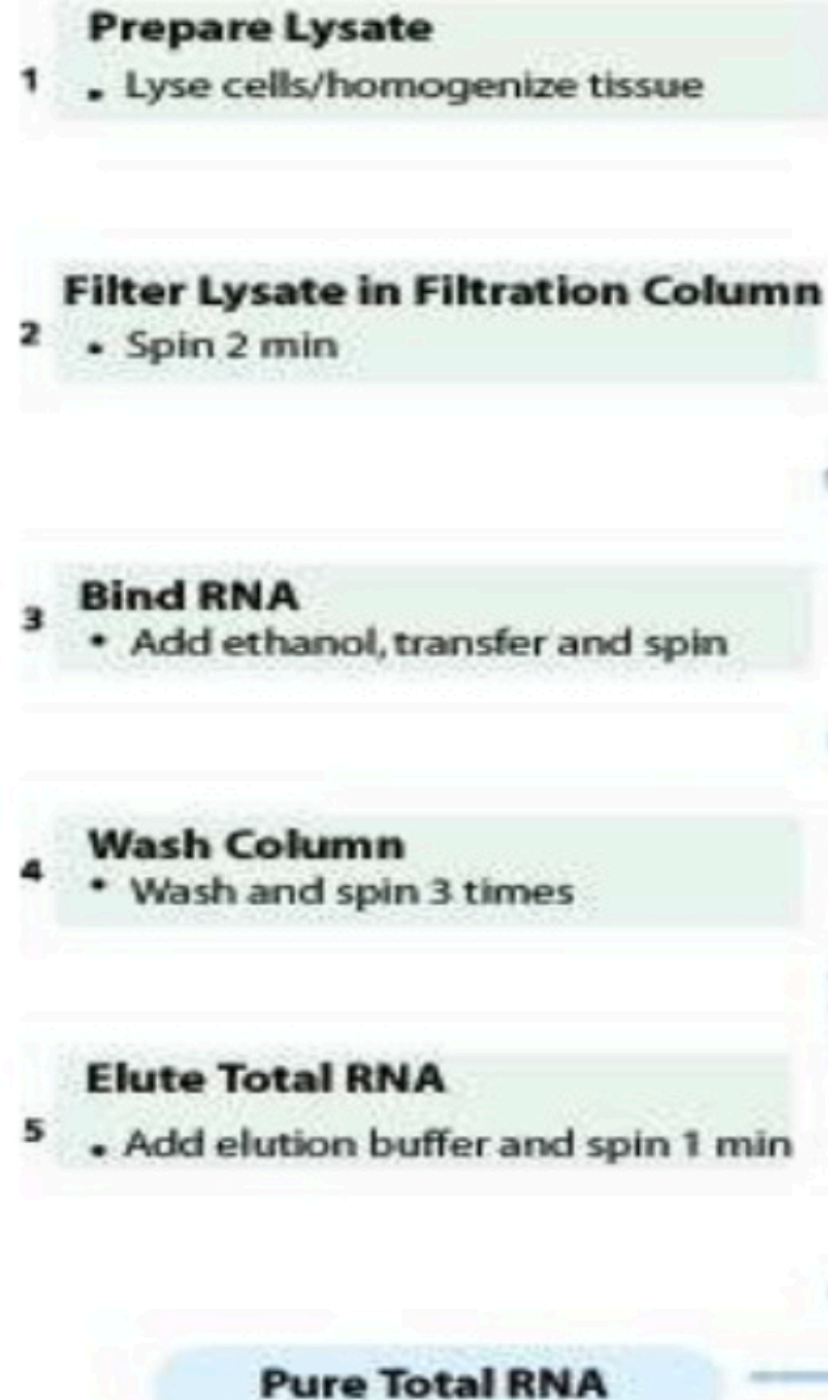
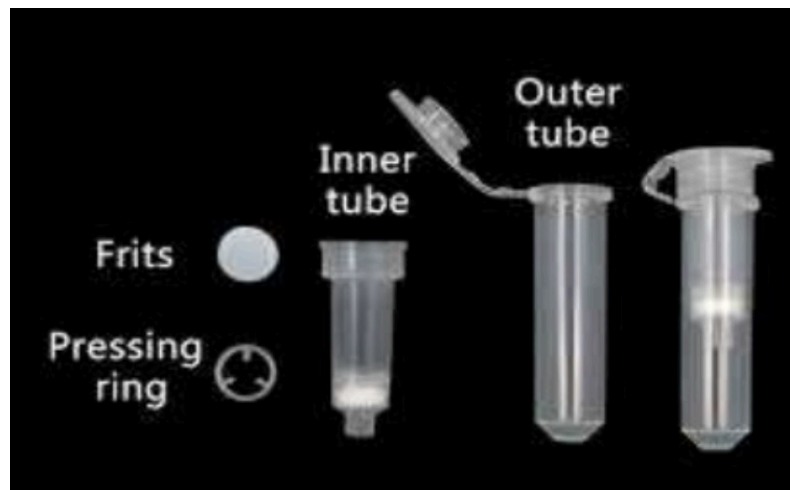
Aim:

- To isolate pure and intact total RNA from Rat Tissue using RNeasy Mini Kit.

Principle:

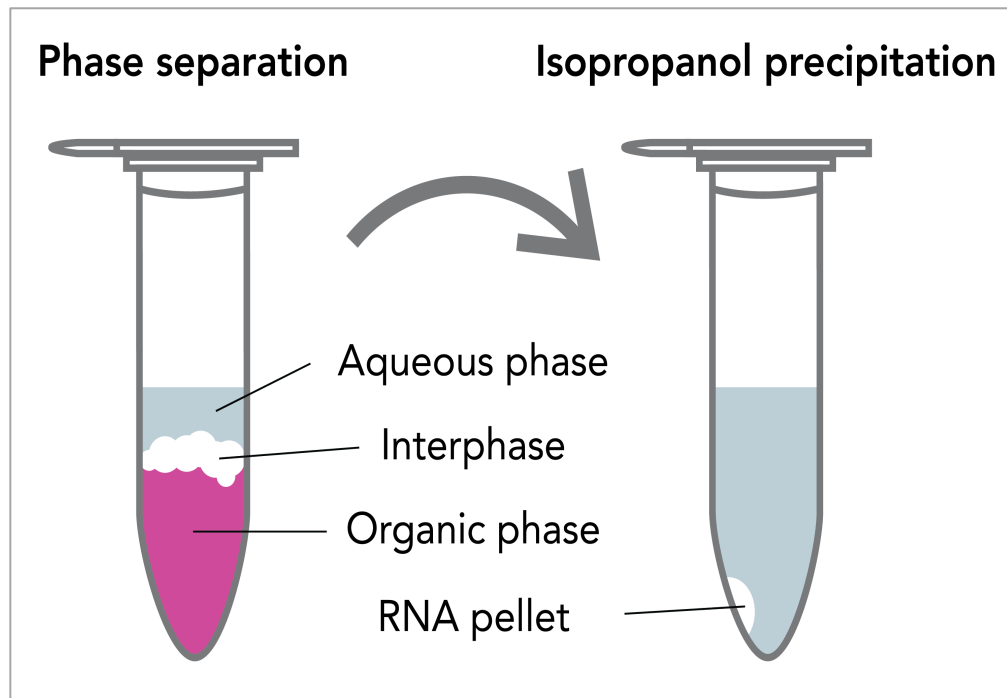
- In general, Lysing and denaturing cells to liberate total nucleic acids in the presence of **RNase inhibitory agents** . Additional steps are then required to remove DNA.

Principle of Filter-based, spin basket method

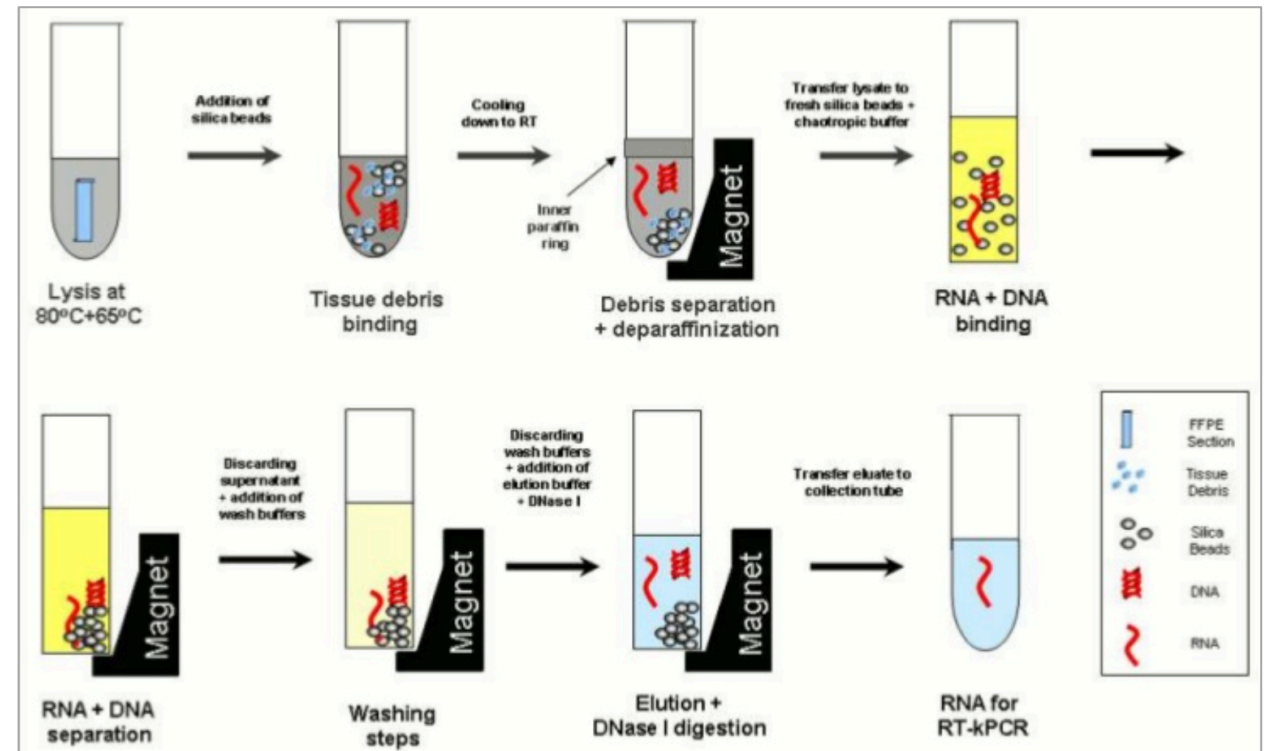


Principles of other methods

Organic extraction method



Magnetic particle method





Results:

- The **concentration, purity, and integrity** of the extracted RNA need to be determined.