RNA Extraction

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RNA Extraction: The Past and The Present

- RNA is an unstable molecule and has a very short half-life once extracted from the cell or tissues [5].
- There are several types of naturally occurring RNA including ribosomal RNA (rRNA) (80%–90%), messenger RNA (mRNA) (2.5%–5%) and transfer RNA (tRNA) [3].

RNA Extraction: The Past and The Present

- Special care and precautions are required for RNA isolation as it is susceptible to degradation [3, 6].
- RNA is especially unstable due to the ubiquitous presence of RNases which are enzymes present in blood, all tissues, as well as most bacteria and fungi in the environment [3, 5].

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- Strong denaturants has always been used in intact RNA isolation to inhibit endogenous RNases [2].
- RNA extraction relies on good laboratory technique and RNase-free technique.
- RNAse is heat-stable and refolds following heat denaturation. They are difficult to inactivate as they do not require cofactors

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- The most common isolation methods can be divided into two classes:

- utilization of 4 M guanidinium thiocyanate and

- utilization of phenol and SDS [2].

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