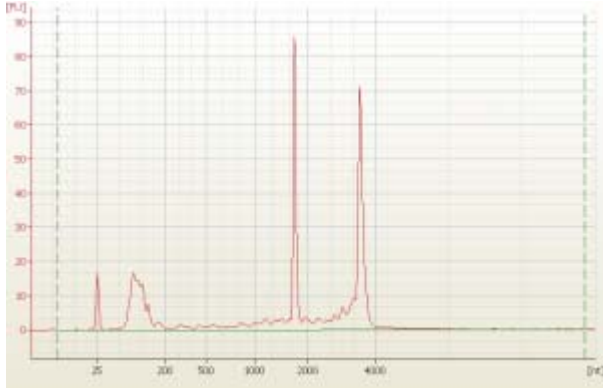


# Total RNA extraction and storage – QC recommendations

**Cultured cells** → [Qiagen](#) RNeasy Mini Kit

**Tissue samples** → Invitrogen [TRIzol](#) followed by clean up on Qiagen RNeasy column



Example of TRIzol-isolated RNA that has not been put through a cleanup spin column (Source: Agilent).

## **FFPE samples**

[Agencourt FormaPure](#)

[Qiagen RNeasy FFPE Kit](#)

[Roche High Pure FFPE RNA Micro Kit](#)

[Ambion RecoverAll™ Total Nucleic Acid Isolation Kit for FFPE Tissues](#)

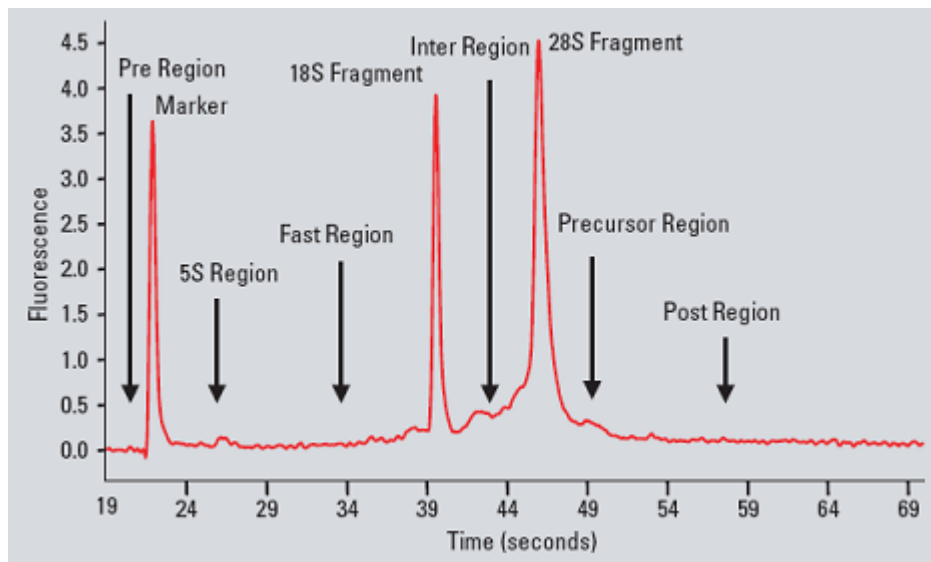
## **Whole Blood**

[NuGen Ovation™ Whole Blood Solution](#)

[The PAXgene Blood RNA System](#)

[An Analysis of Blood Processing Methods to Prepare Samples for GeneChip® Expression Profiling](#) (Affymetrix technical note)

## **Quality Assessment of total RNA**



Electropherogram of total RNA sample (Source: Agilent)

Good quality total RNA features:

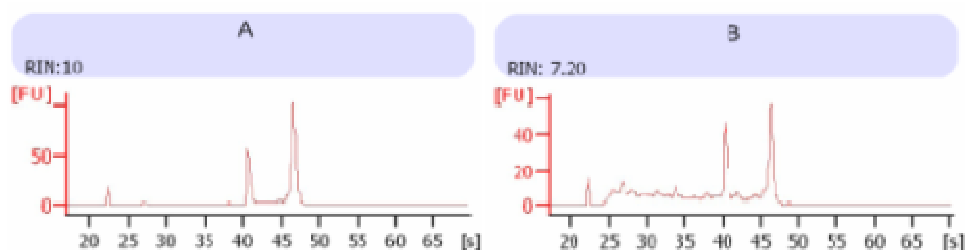
- Clear 18S and 28S ribosomal RNA peaks
- A low small RNAs (5S, transfer RNA and miRNA) presence relative to the rRNA peaks
- A flat base line in the fast-migrating region, before the 18S peak
- A flat baseline between the 18S and 28S rRNA peaks
- A return to the baseline after the ribosomal RNA peaks
- A RIN score above ~7
- A Nanodrop A260/A280 ratio between 1.9-2.1

## RNA Storage

**It is essential to store RNA samples at -80°C**

**Limit the number of freeze-thaw cycles**

The Bioanalyser traces below show the effects of storage temperature on total RNA integrity: Samples A and B were isolated using identical methods and stored at -80°C (A) and -20°C (B).



(courtesy of [CSC Physiological Genomics and Medicine Group](#))