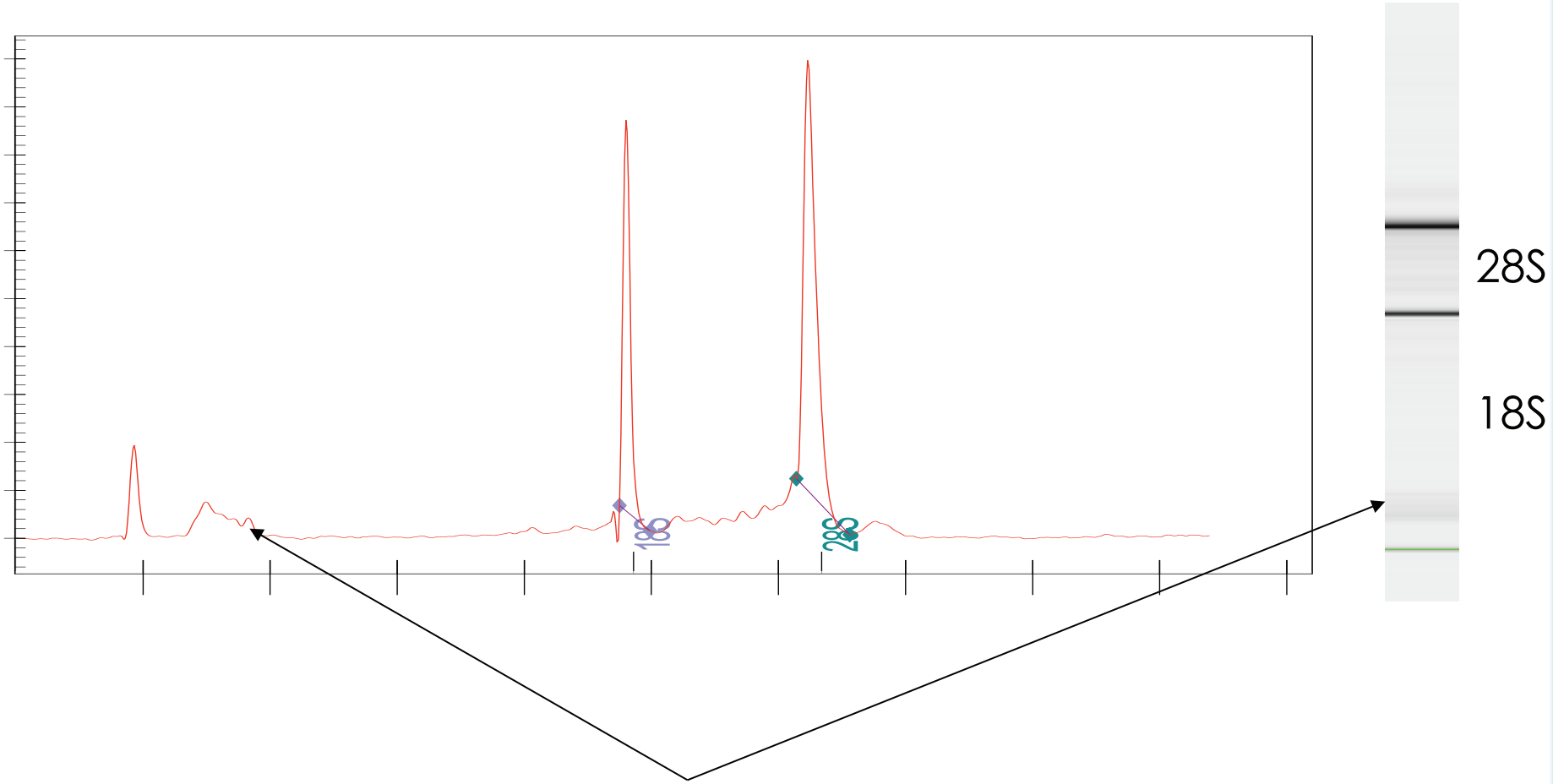
JABSOM
Genomics Core fAciliTy

Bioanalyzer Interpretation

Bioanalyzer RNA Total Eukaryote 2100 Nano

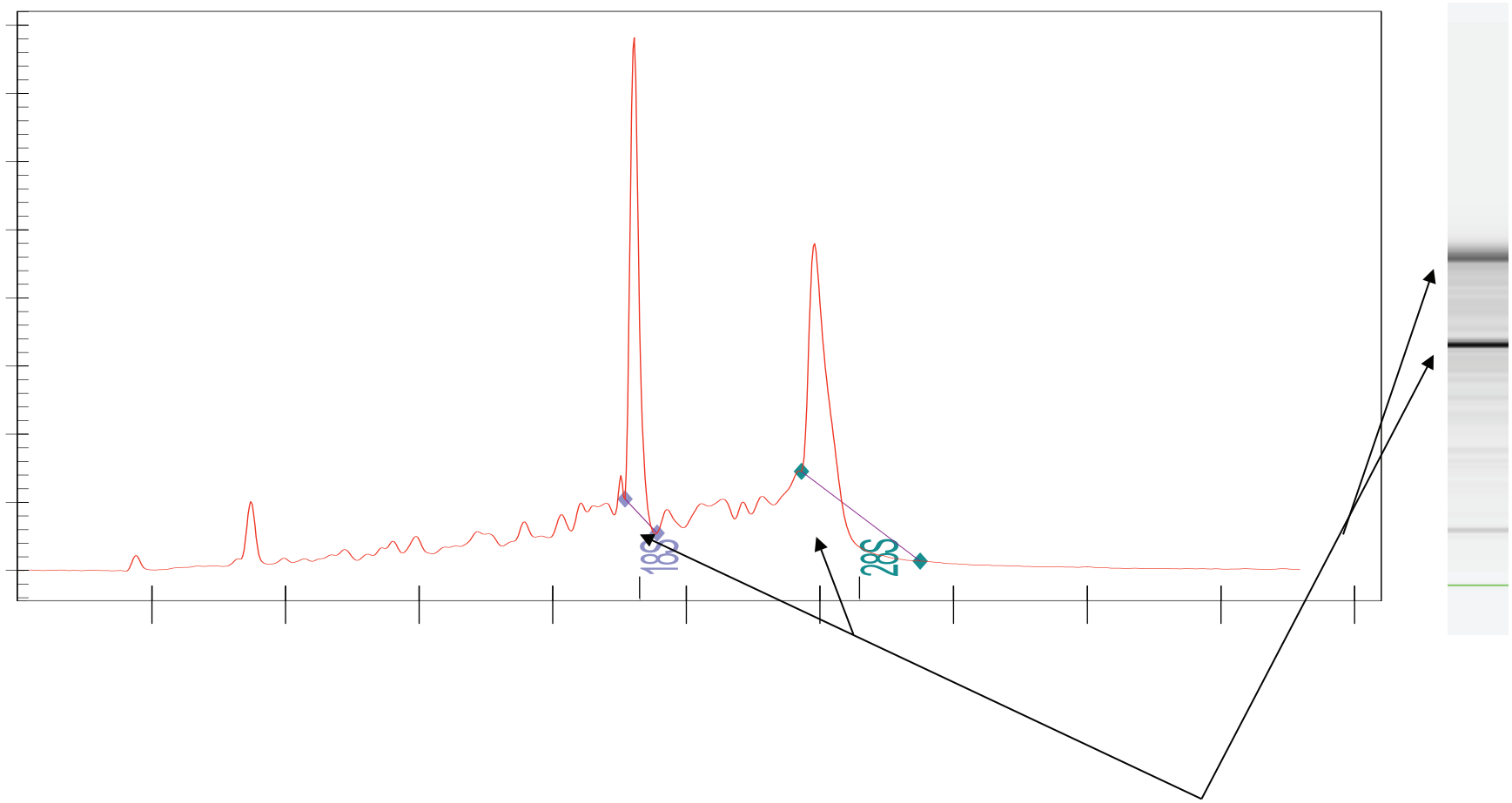
Information gathered from USU and Agilent website 2010

Intact Total RNA



Small peaks are sometimes present after the marker at 24 – 29 seconds. These are represented by 5S and 5.8S subunits, tRNAs, and small RNA fragments about 100bp. These are especially noted when using phenol and trizol extraction methods. They can be removed by treating total RNA through Qiagen columns which removes small RNAs.

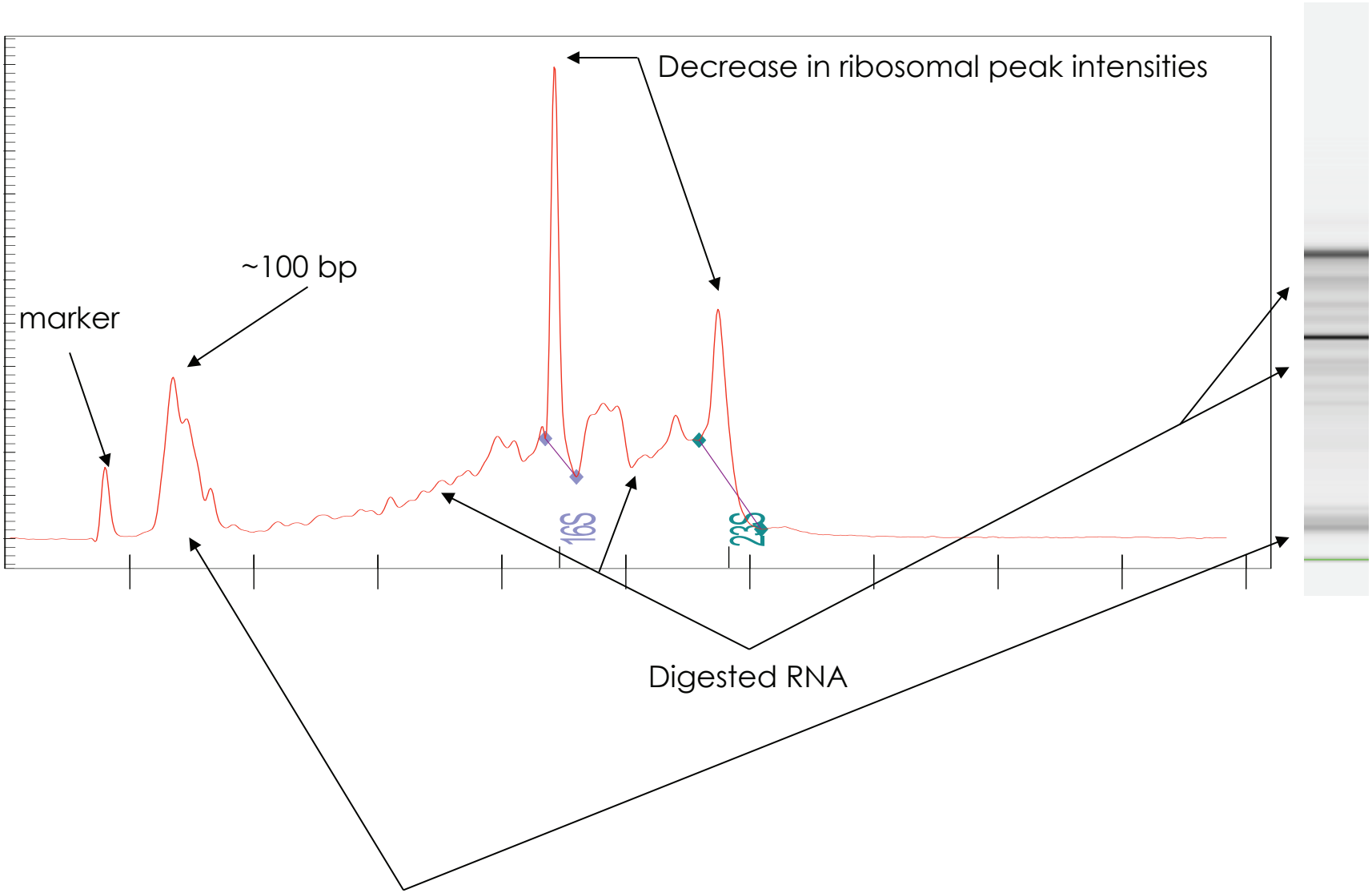
Partially Degraded RNA



Baseline between and to the left
of ribosomal peaks becomes jagged

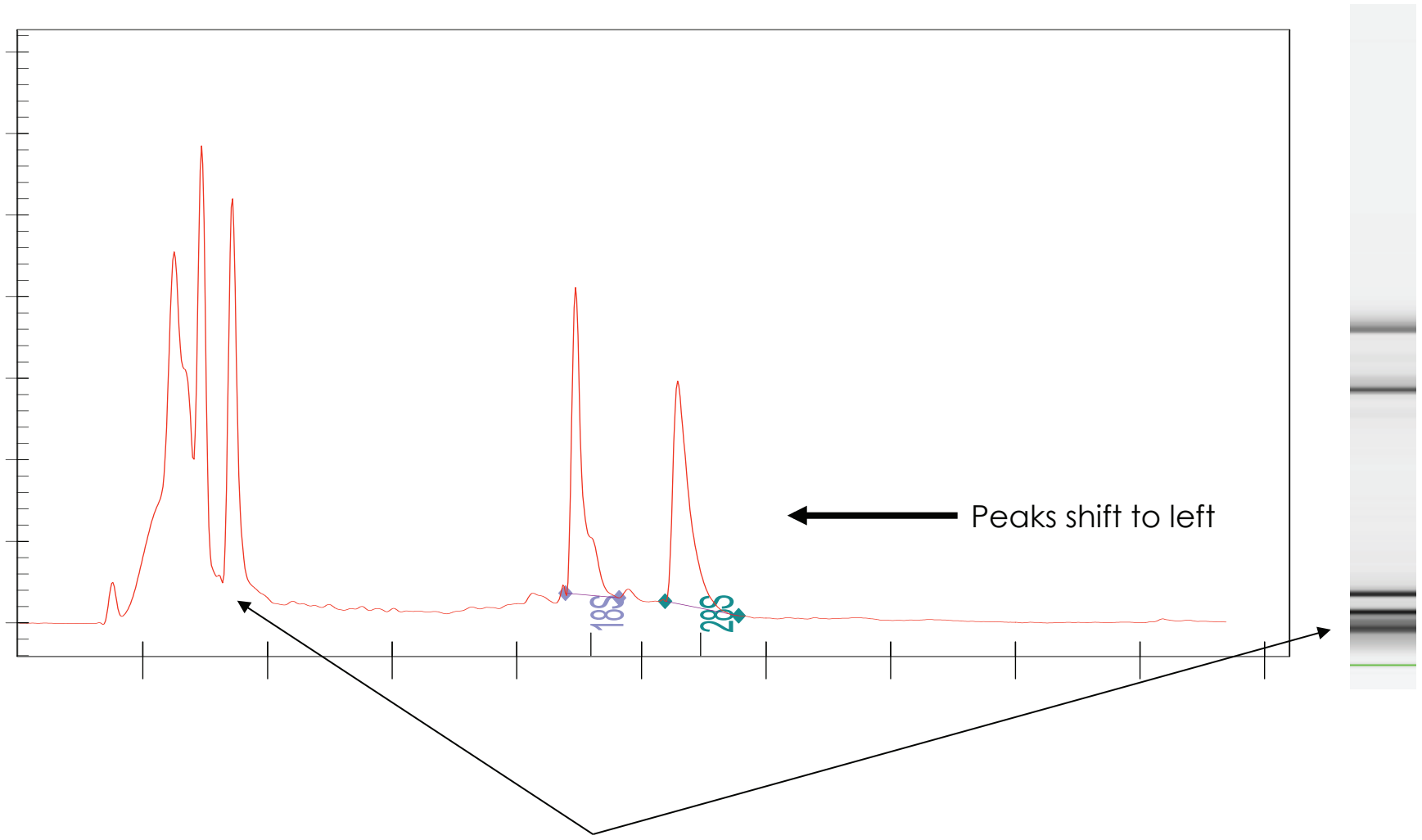
Total RNA with images like this are borderline. Re-extraction should be seriously considered.

Partially Digested Total RNA Using Trizol Extraction

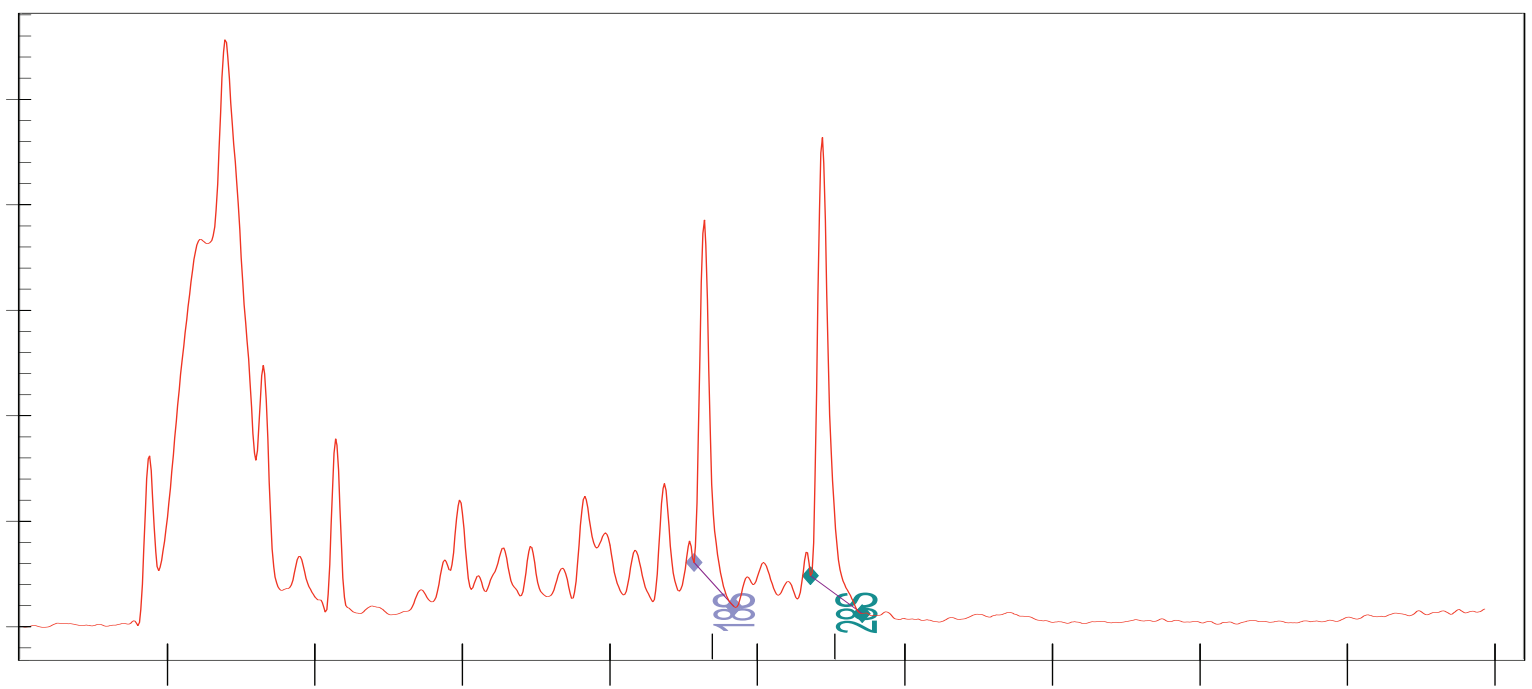


Combination of 5S, 5.8S, tRNAs, and an increase in digested RNAs

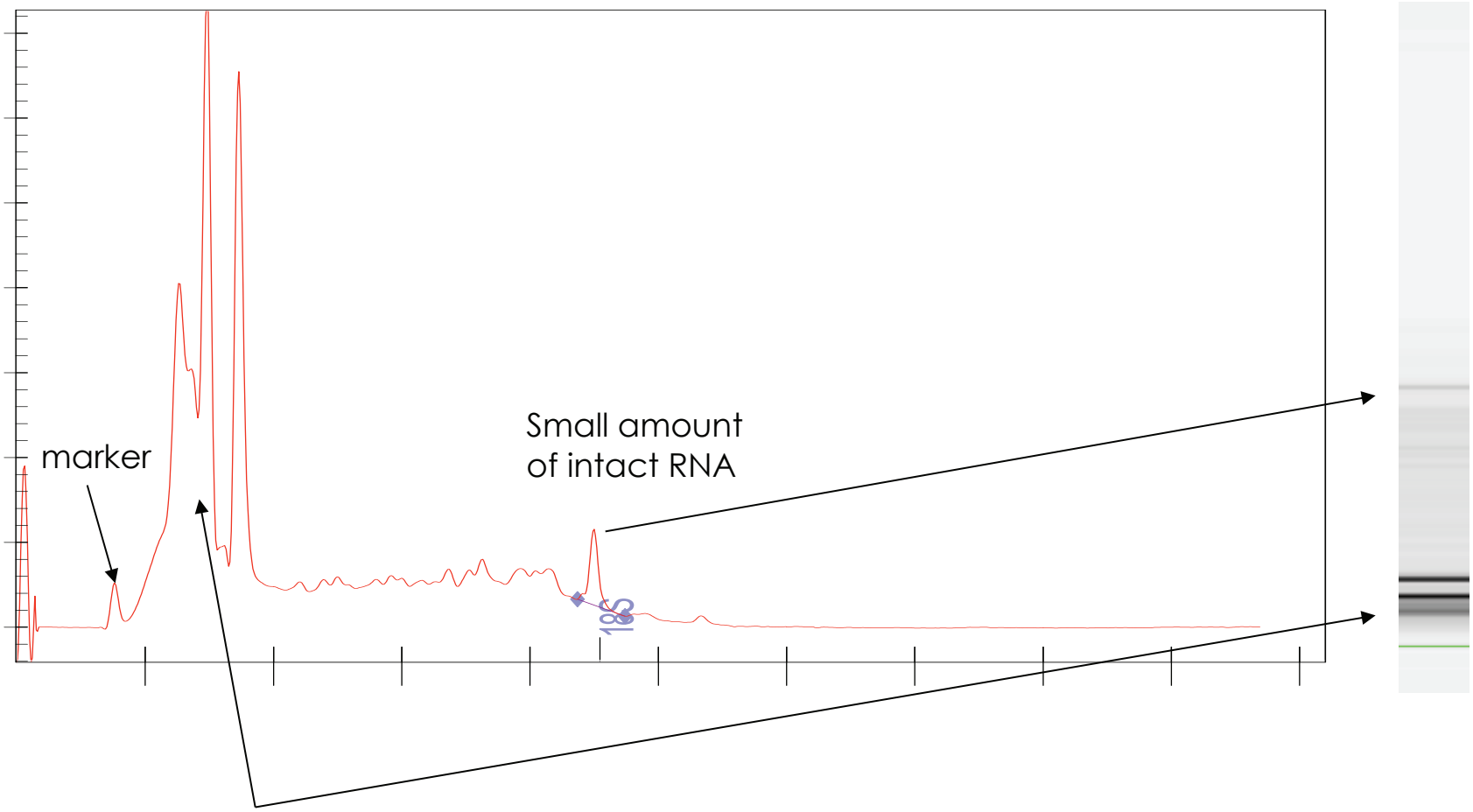
Heavily Digested RNA



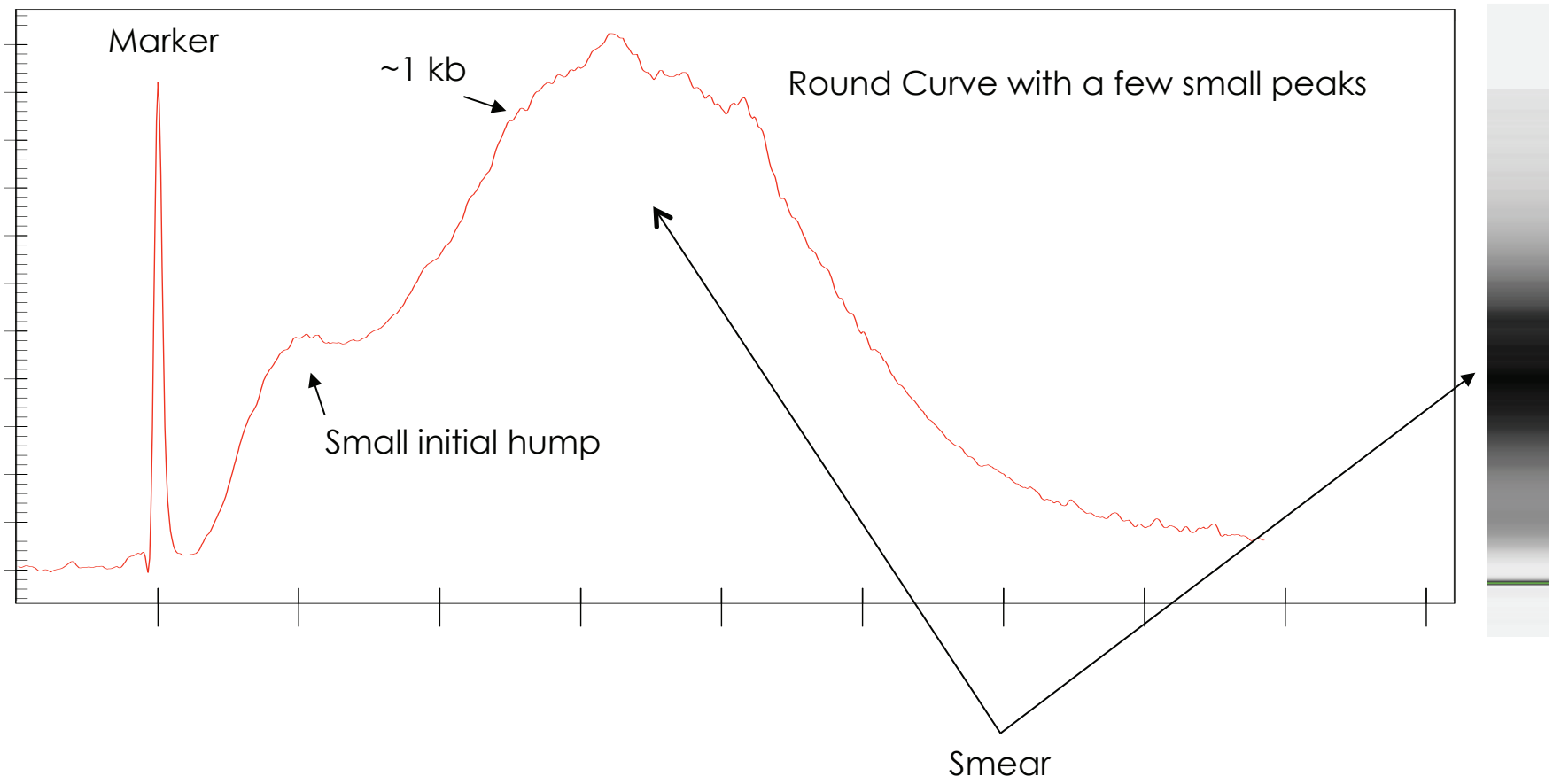
Heavily Digested RNA Using a Hot Phenol with Beads Extraction



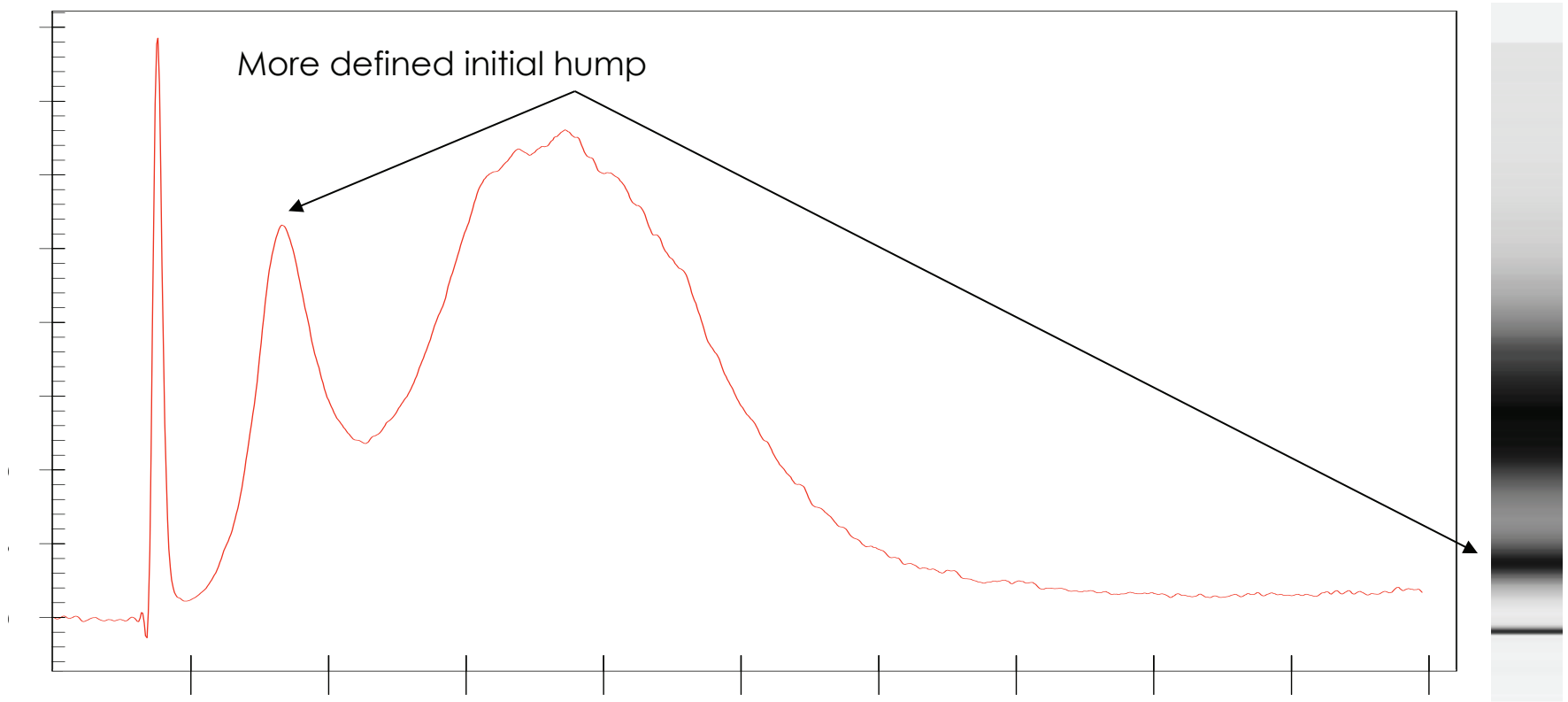
Completely Digested RNA



Characteristics of Labeled cRNA

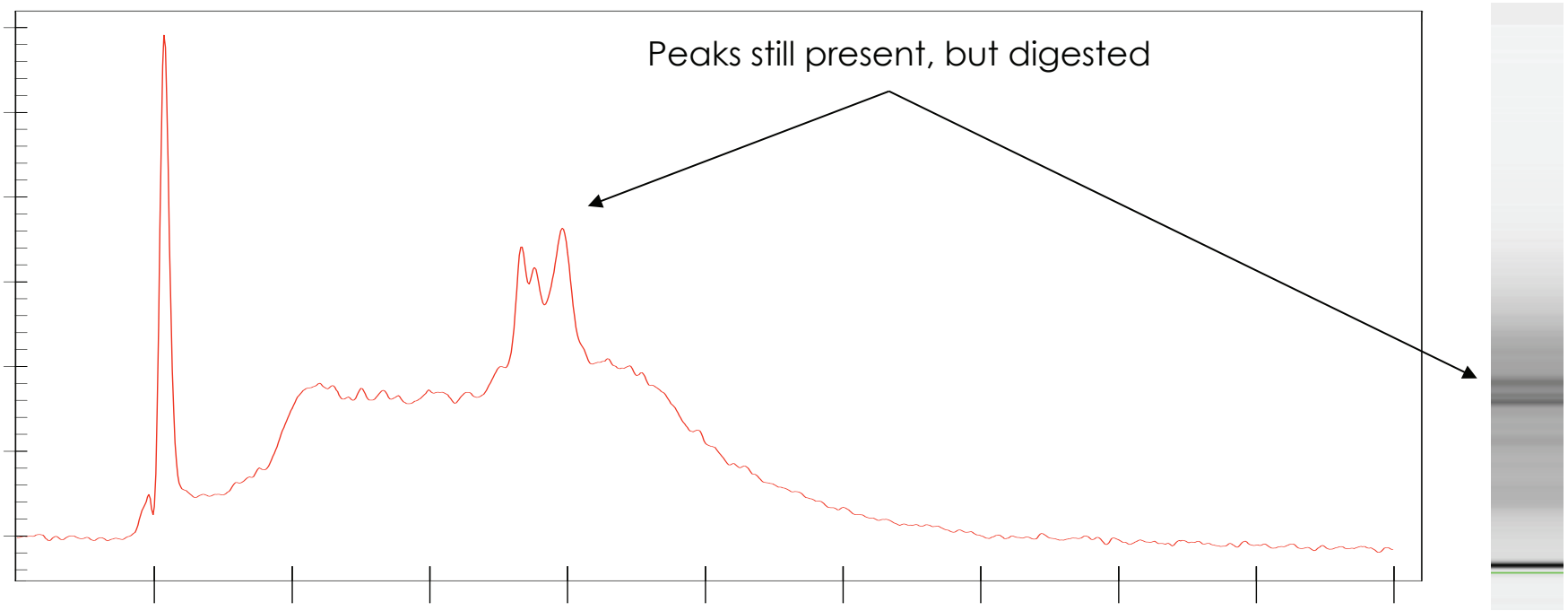


Labeling with Partial Fragmentation



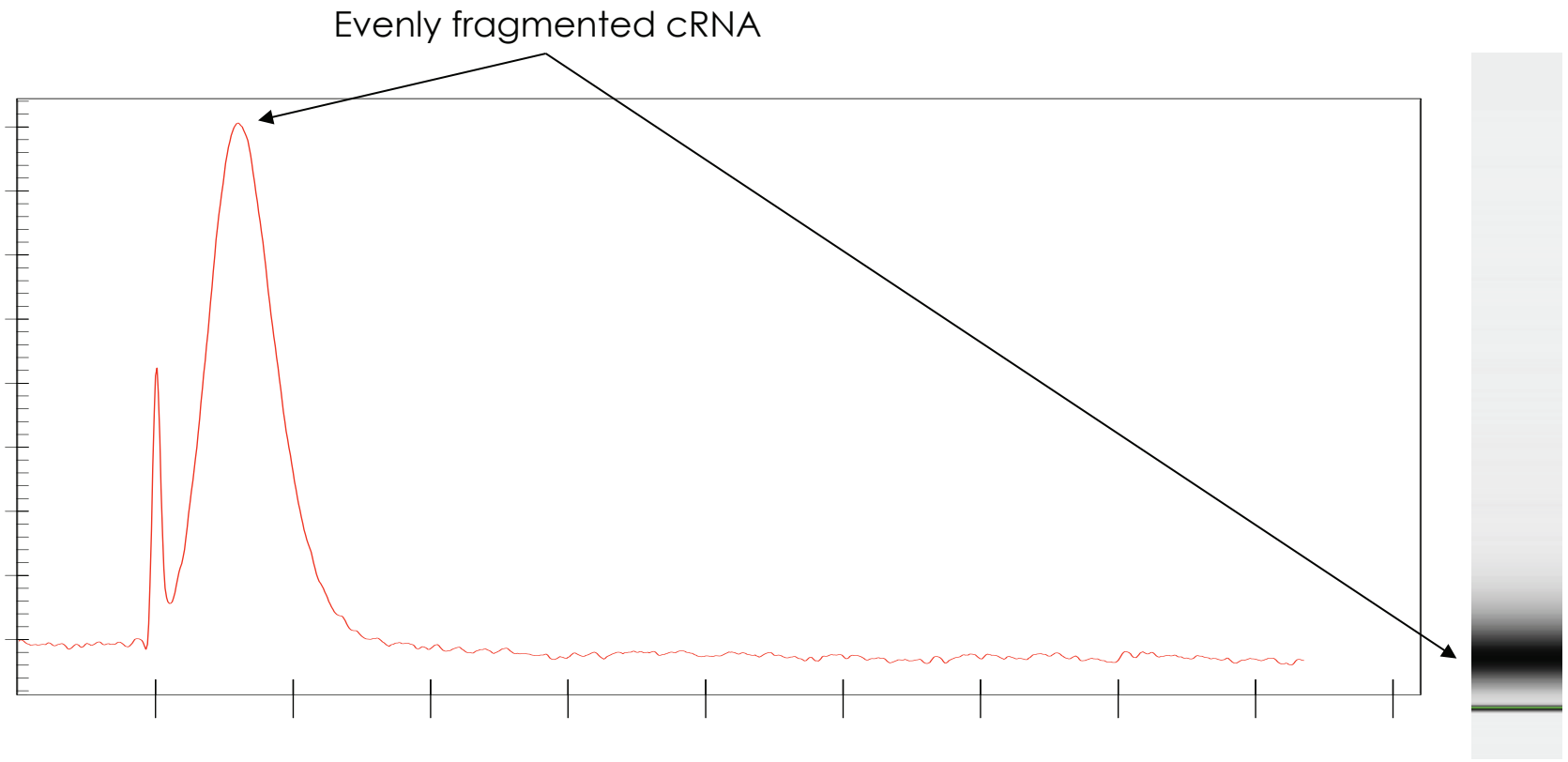
Labeled cRNA with this image are OK to fragment and hyb, but not without risk.

Insufficient Transcription During Labeling



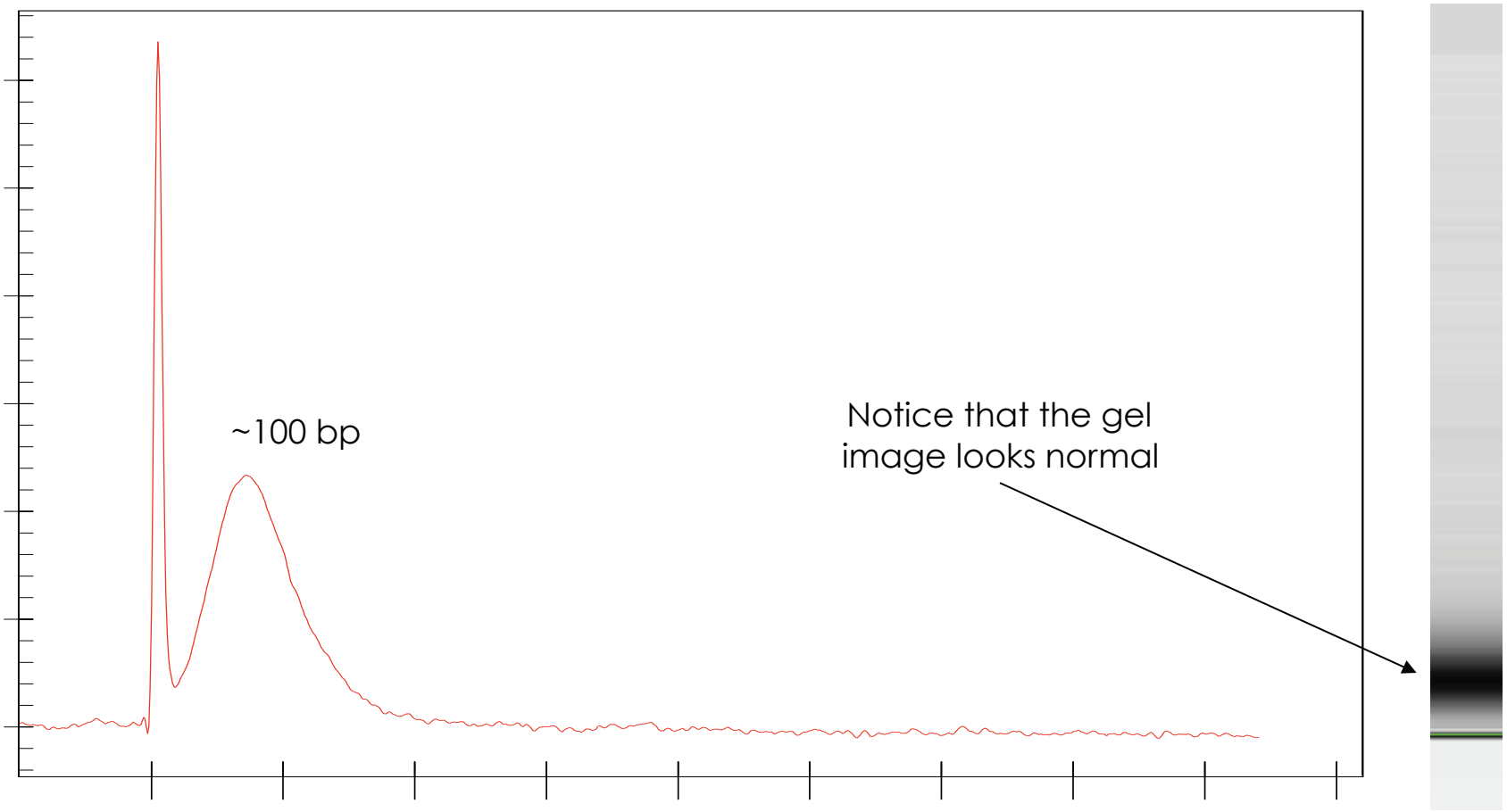
These samples have failed, and are not ready for hybridization.

Properly Fragmented cRNA



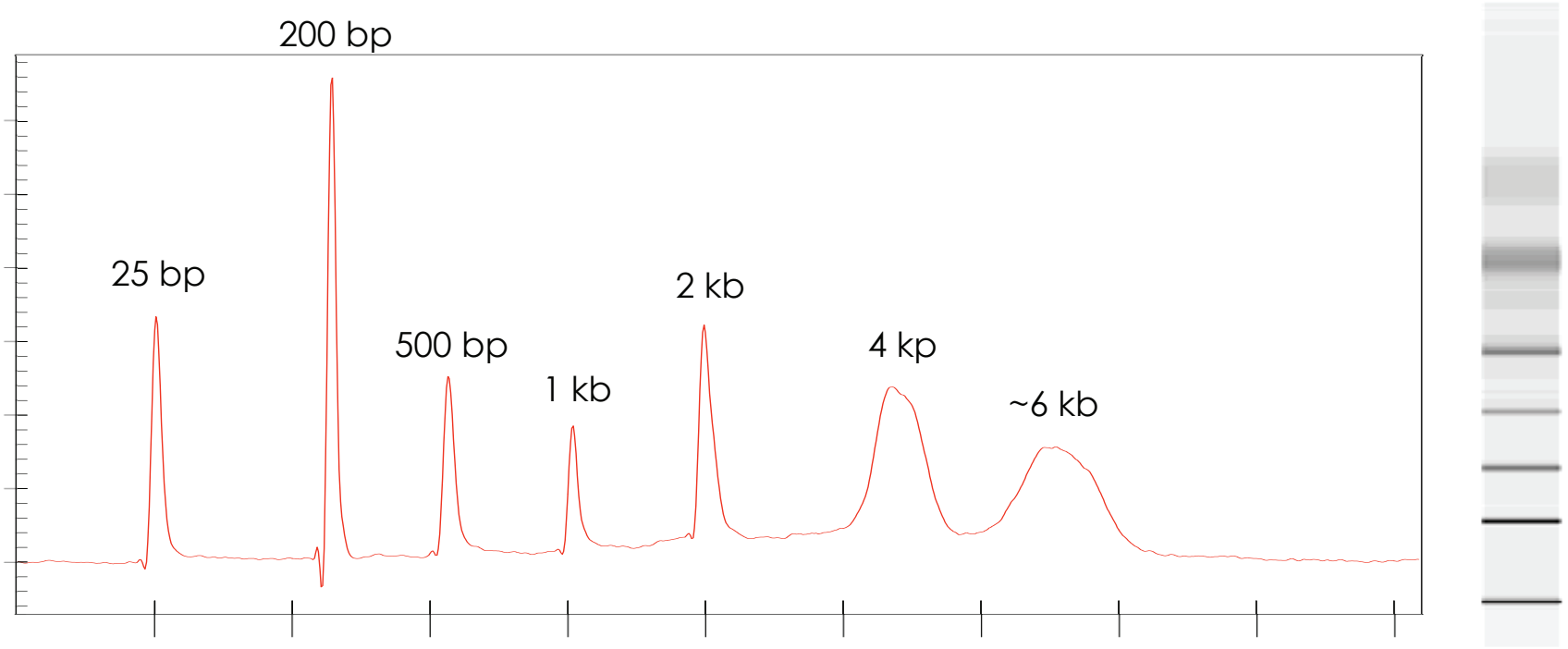
Fragmented samples with this image are ready for hybridization.

Low Quantities of Fragmented cRNA



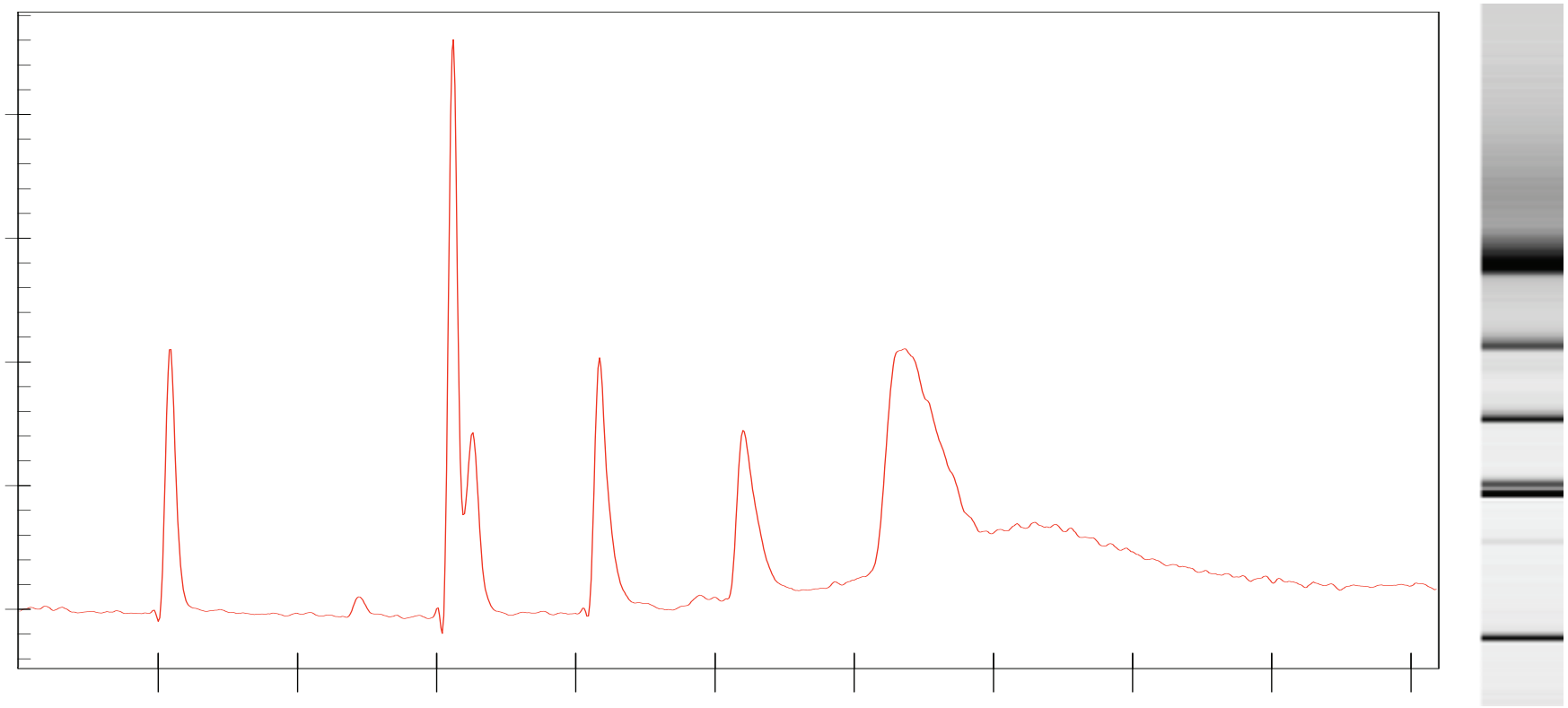
Peak heights are related to quantity.
The lower the peak, the less fragmented cRNA is present.
Fragment peak height is substantially lower than marker, which indicated low quantity.

Good Ladder



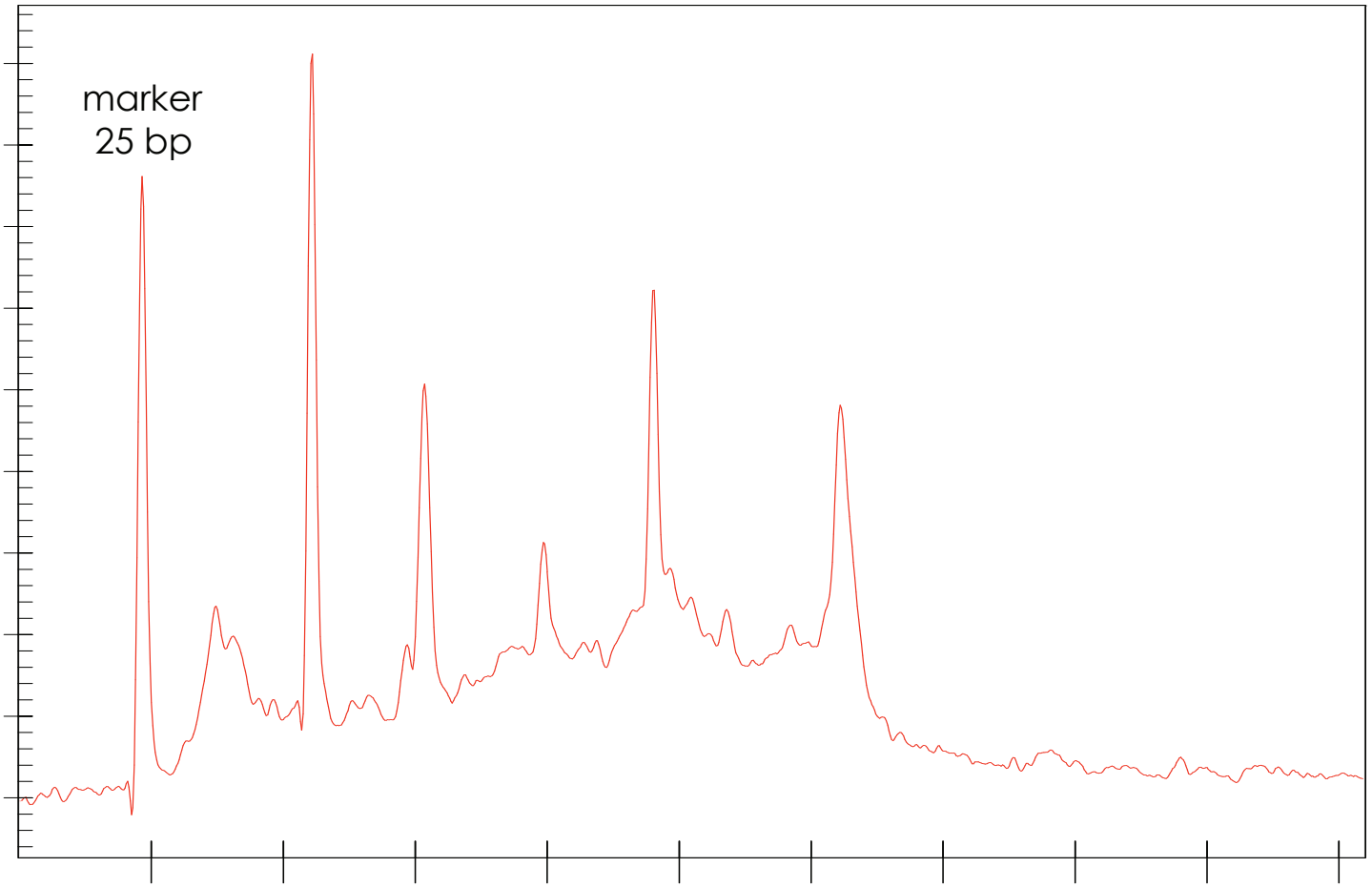
The larger the ladder fragment, the wider the peak. More difficult to create uniform peaks of large size.
Baseline is flat and has sharp peaks

Ladder That Has Not Been Denatured Sufficiently



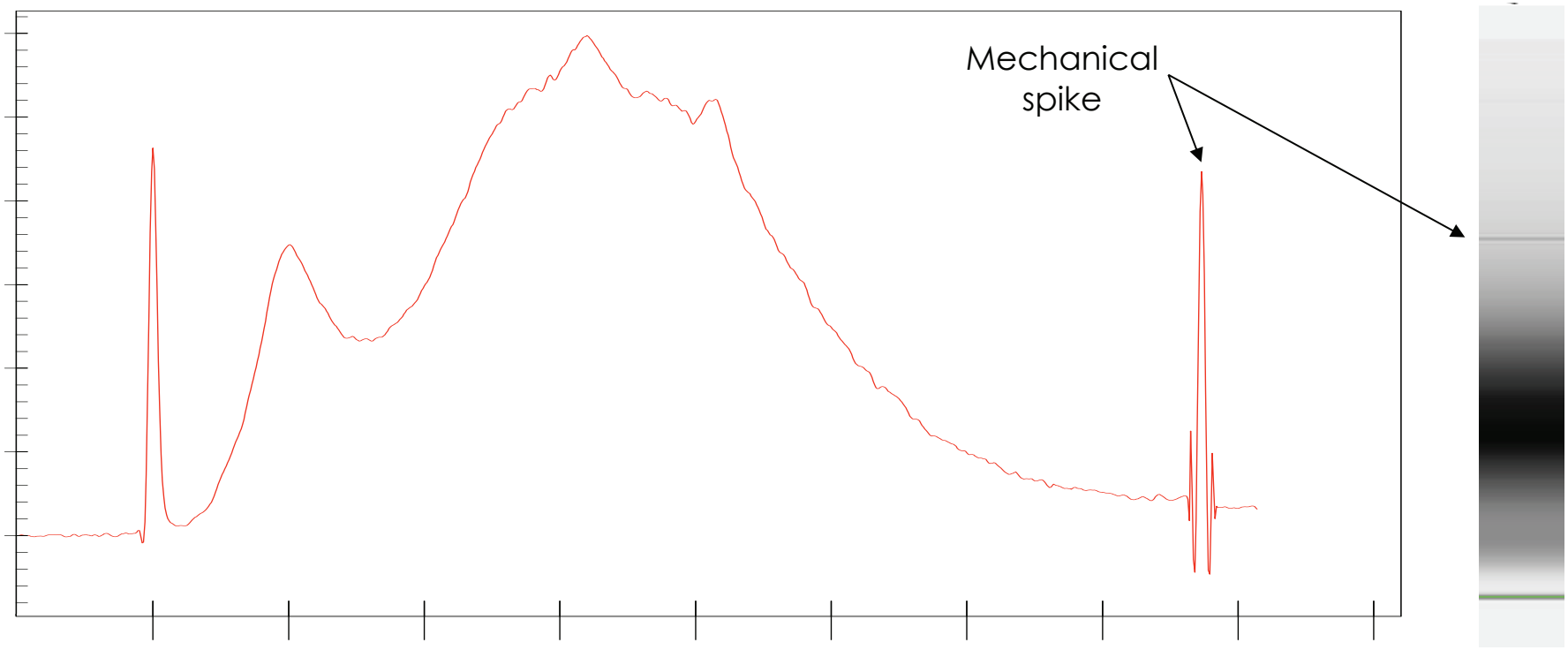
Compressed and/or missing peaks from incomplete denaturing.
Irregular or off-axis baseline

Degraded Ladder



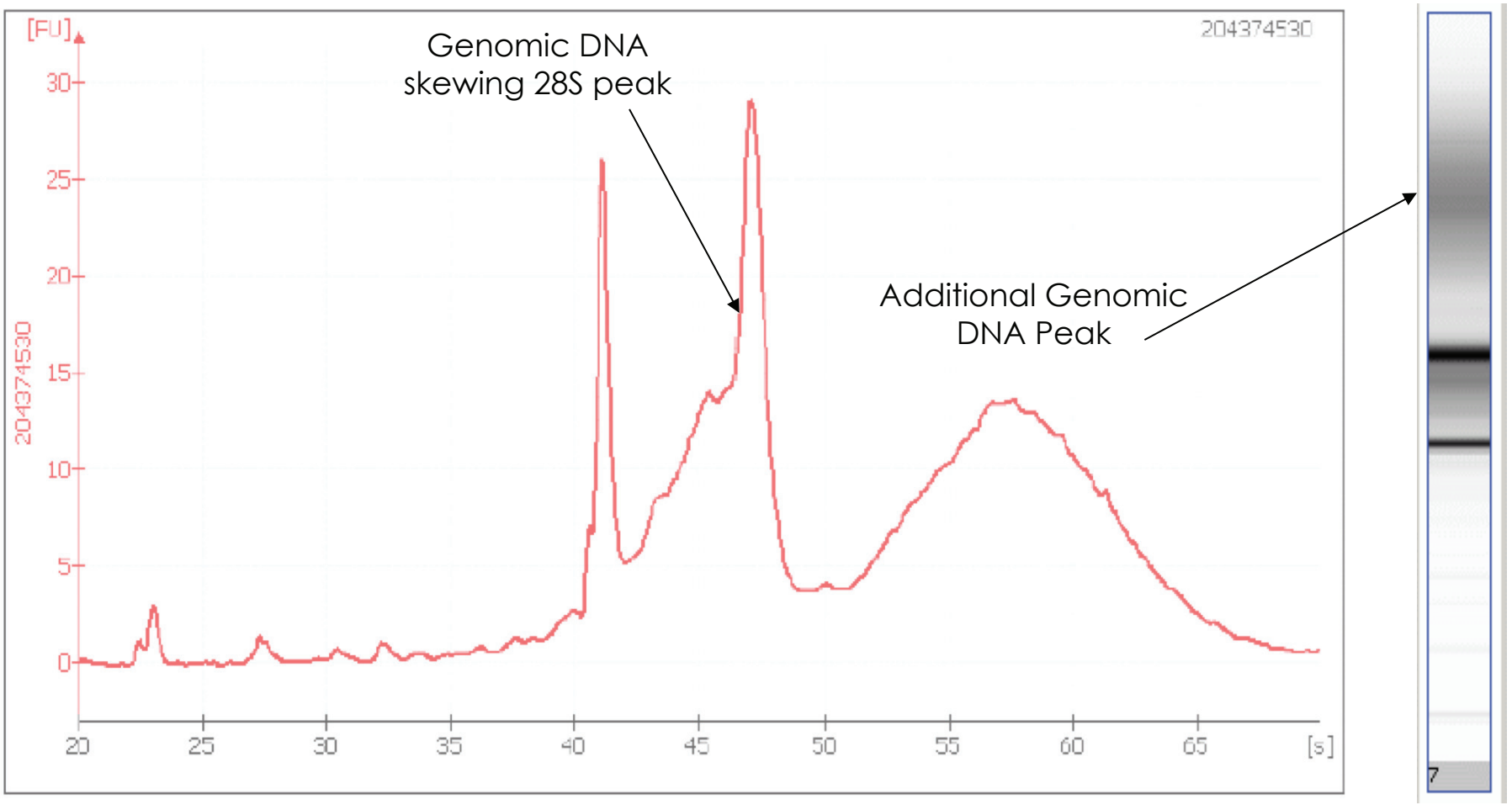
Compressed ladder as well as missing, or additional peaks.
Low intensity for ladder peaks (compare to marker peak)
Irregular background from degraded ladder.

Mechanical Spikes



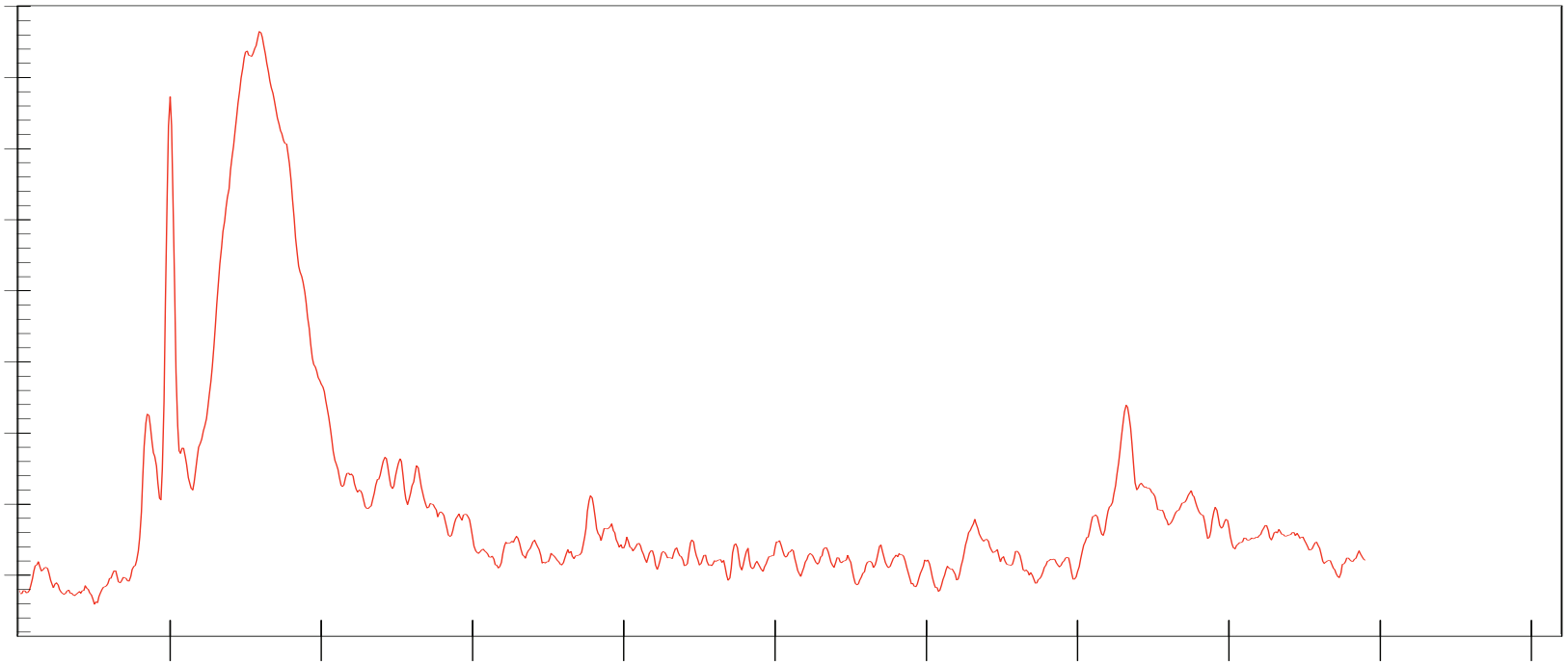
These spikes are due to microparticulates and microbubbles.
Dust is a common cause for these.
Make sure to quickly load your nanochips and keep your area clean. These do NOT affect the quality of the RNA, labeled cRNA, fragmented cRNA, etc. and are OK to continue processing.

Genomic DNA Contamination



Picture from Agilent Troubleshooting manual

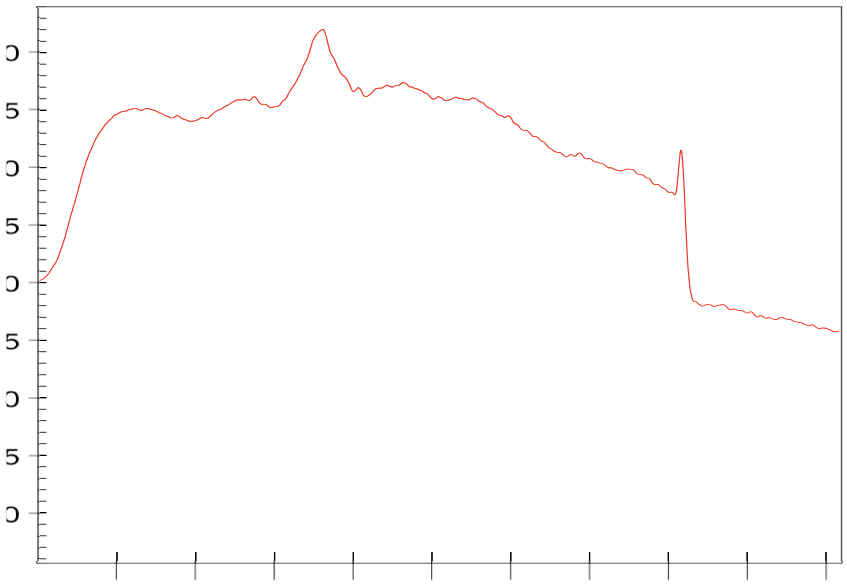
Nanochip Contamination



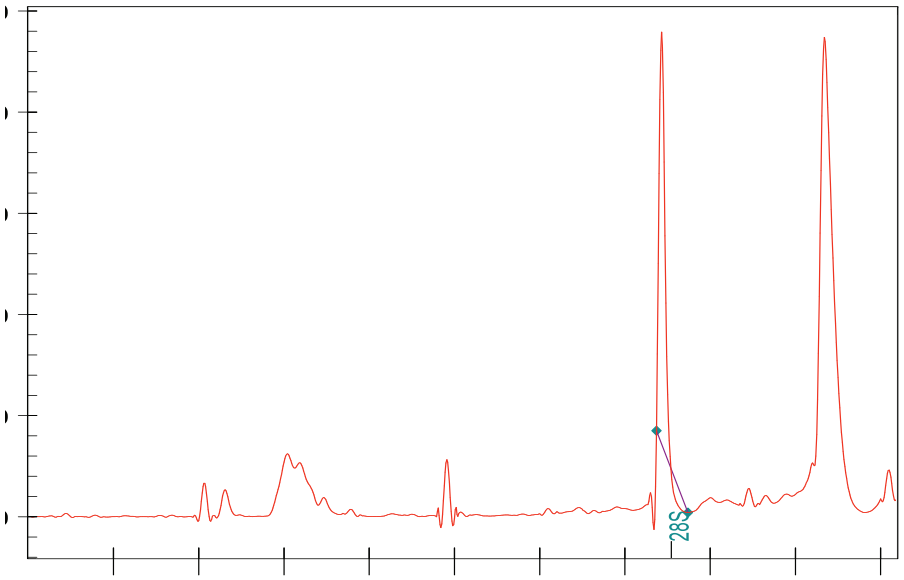
Could also result from fingerprints on focusing lens or on backside of chip.
Be careful not to touch top or bottom of chip.

Electrode Cartridge Contamination

Wavy Baseline



Late Migration



Dirty or wet electrode cartridge, or gel contamination from chip on sides of electrodes.