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SAMPLE PREPARATION & CELL LYSIS

Precellys
The Science of Lysing

Total RNA extraction from Cartilage tumors

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CONTEXT

Our platform is specialized in extraction of nucleic acids from tumoral tissues intended to be analyzed by microarray and sequencing. In this study, nucleic acids have been extracted from important series of **cartilage tumors.** Although DNA extraction from cartilage samples is common, the extraction of high quality RNA is still a challenge. In this way, the Precellys Dual was evaluated to increase quality of extracted RNA from cartilage tumors.

MATERIAL

- Precellys Dual homogenizer.
- Precellys lysing kit: 03961-1-007 (CK28R).
- Sample: 50 to 100 mg cartilage tumors (chondrosarcoma).
- Buffer: 1 ml TRIzol Reagent (Invitrogen) + 200 µl Guanidine thiocyanate 4M (SIGMA).
- miRNeasy Mini kit (Qiagen).

PROTOCOL

- Precellys Dual: 6500 rpm, 3x15sec, 10s break.
- Subsequent RNA extraction and purification was done as described previously [1].
- Verification of RNA quality: Agilent 2100 Bioanalyzer (Agilent Technologies).

[1] Banneau et al., Breast Cancer Research (2010) 12:R63.

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RESULTS

Qualification of **RNA and miRNA** is based on some criteria as 28s/18s ratio, RIN and Agilent 2100 Bioanalyzer profiles. Figures 1 and 2 show the results of RNA and miRNA qualifications extracted from a cartilage tumor. Characteristics of total RNA are reported in Table 1.

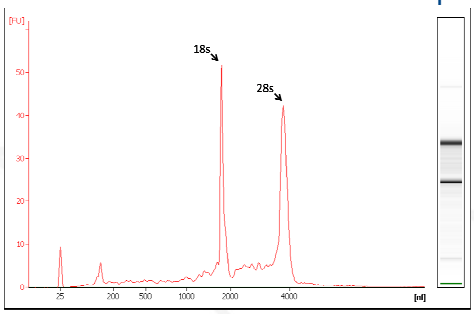

Figure 1: Profile of RNA extracted from a cartilage tumor on Agilent 2100 Bioanalyzer

A260/280	2.07
A260/230	1.9
28s/18s	1.5
RIN	8.6
%miRNA/RNA	7.88
[RNA] ng/µl	408.3
Quantity (ng)	10819

Table1: Characteristics of total RNA extracted from a cartilage tumor

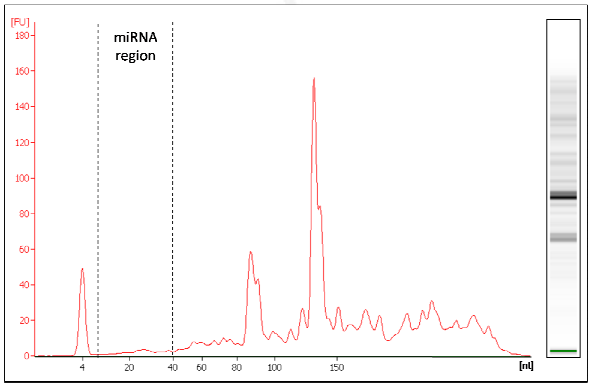

Figure 2: Profile of miRNA extracted from a cartilage tumor on Agilent 2100 Bioanalyzer

RNA and miRNA quality and integrity are optimal to microarray and sequencing analysis.

CONCLUSION

The **Precellys Dual** is successfully validated for total RNA extraction from cartilage tumors.

It provides better homogeneity in grinding of hard tissue as cartilage and so, increases quality and quantity of total RNA extracted. Moreover, the **Precellys Dual** is easy to use, simple, efficient and much faster than former methods.

For more details, please contact precellys@bertin.fr

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