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SAMPLE PREPARATION & CELL LYSIS

Precellys
The Science of Lysing

Improving RNA Extraction from Mouse Tissues using the Precellys24-Dual

Pharmaceutical Company, San Francisco, California

CONTEXT

The time spent on sample processing is often time consuming and arduous when using traditional methods, particularly for large scale animal studies. In our research, mice organs are dissected after small molecule treatment for RNA extraction, followed by cDNA synthesis and gene expression analysis using real time PCR. Our current pulverization method results in poor gene expression results due to RNA degradation during sample extraction. We aim to improve the quality of RNA yield using the Precellys24-Dual, a high throughput sample homogenizer.

MATERIAL

- **Precellys®24-Dual Homogenizer**
- Precellys lysing kits: CK14 2mL (KT03961-1-003.2) for heart, liver and CKMix 2mL (KT03961-1-009.2) for spleen
-Samples: Heart, liver, spleen (10-30mg)
-Buffer: 1mL of Trizol reagent

PROTOCOL

- Precellys24-Dual: 5000 rpm, 1x30 sec
- Pulverization: Mortar and pestle, followed by homogenization using a needle and syringe in Trizol.
- Methods: Mouse tissues were removed and snap frozen in liquid nitrogen or dropped into RNAlater prior to homogenization.

RESULTS

RNA integrity and yield was evaluated using an Agilent Bioanalyzer, and an average RIN (RNA integrity number) value of 9 (highest score is 10) was observed using the Precellys, with RNA concentration falling between 400-1800 ng/ul. The gel displays clean 18S and 28S rRNA bands with little or no degradation (Figure 1A). RIN values of "N/A" were observed after pulverization, which is indicative of highly degraded RNA as observed on the gel (Figure 1B).

Figure 1A

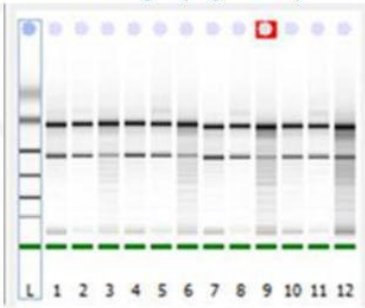

Figure 1B

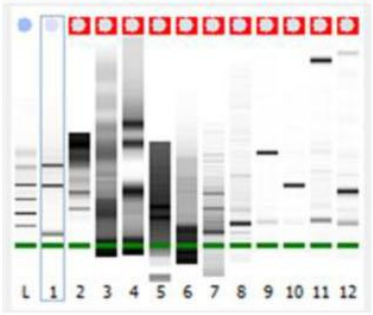

Figure 1. RNA integrity after sample homogenization on the Precellys24-Dual (A) or using pulverization (B).

CONCLUSION

The **Precellys24-Dual** significantly improves RNA integrity and yield compared to our previous pulverization method. In addition, the time spent on sample homogenization was decreased from one hour to 30 seconds. **The Precellys24-Dual in an efficient and high-throughput homogenizer that is an ideal tool for quickly generating high quality extracts in any animal study.**

For more details, please contact precellys@bertin.fr

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03712-810-DU081

エムエス機器株式会社
http://www.technosaurus.co.jp

□東京 〒162-0805 東京都新宿区矢来町 113 番地 TEL（03）3235-0661（代）/ FAX（03）3235-0669
□大阪 〒532-0005 大阪市淀川区三国本町2丁目12番4号 TEL（06）6396-0501（代）/ FAX（06）6396-0508
□福岡 〒812-0054 福岡市東区馬出 1 丁目 2 番 23 号 TEL（092）631-1012（代）/ FAX（092）641-1285