

Compound extraction from whole lung of rats with Precellys®24 Dual – 7 ml vial.

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CONTEXT

The Company is focused on respiratory diseases. Our goal is the detection of chemicals entities as potential news drugs in biological fluids and tissues, as lung, bronchus and trachea after administration to animal.

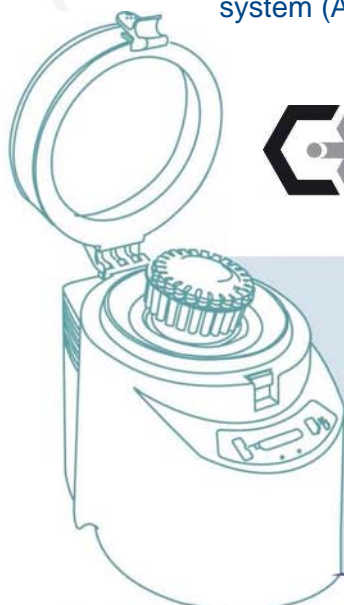
The sample preparation involves homogenization of tissues, most of the times, **whole organ** hence the trials with **Precellys®24 Dual – 7 ml vial**.

MATERIAL

- Precellys®24 Dual vs Ultraturrax (usual device)
- Precellys® kit 7ML ceramic bead CK28 (réf.0904-01)
- Samples : 8 whole lungs weights ranged from 1.2 to 1.4 g (4 samples by device)
- Buffer : Acetonitril / 0.9%NaCl mixture (50/50 v/v)

PROTOCOL

- Sampling : Whole lung (1 vol.) + Buffer (3 vol.)
- Precellys®24 Dual** parameters: 6500rpm, 2x20 sec. vs Ultraturrax : around 40s
- Analyze : Injection of 10 µl of supernatant (after protein precipitation) in LC/MS/MS system (API3000 Triple Quadrupole – Applied Biosystems).

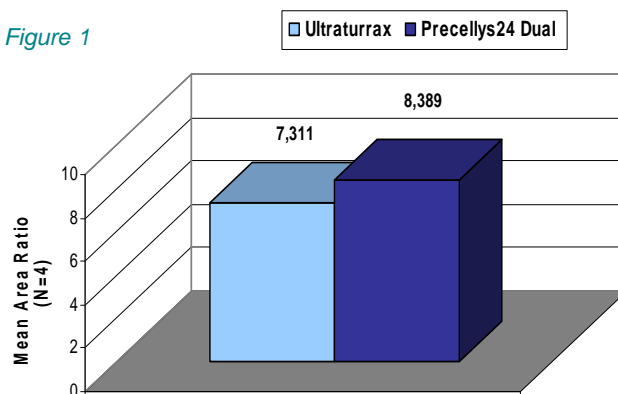


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RESULTS & DISCUSSION

The analyte levels in the sample are almost the same, so no difference involving the two homogenizing techniques are detectable (See Figure 1). Reproducibility is good in both cases, taking into account the individual variability.

Figure 1



Few residual cartilaginous fragments (probably bronchus/trachea) were observed in both methods (fewer amounts with Ultraturrax). **The results show that there is no impact on the analyte recovery from matrix.**

With both methods, temperature within the sample after processing could reach 70°C depending on the sample and protocols. Considering the stability of the analyte and the short time of exposure to this temperature (sample were preserved in ice before and after processing), sample degradation was not significant, but a refrigerating device could be useful in different situation.

Ultraturrax is fastidious and time consuming with cleaning steps and potential contamination between samples. **The spent time is at least 5 times less using Precellys®24 Dual.**

CONCLUSION

Precellys®24-Dual was successfully evaluated. As the results, **Precellys®24-Dual** is a suitable and reliable system **for grinding whole organs** with a fast process, without cross contamination, high reproducibility and comparable analyte levels extracted.

The use of **Cryolys cooling option** suits to reduce the increase temperature observed during processing.

Problem



Solution

