Homogenization of 6 mouse brains in a 15ml Precellys® tube using the Precellys® Evolution

Bertin Pharma (Orléans, France)

Introduction

The laboratory of Bertin Pharma works in the field of pharmacy, biotechnologies, cosmetics and nutrition (GLP & GMP). It is specialized in bioanalysis, formulation analysis, pesticide assays, and membrane protein quantification.

In several applications, matrices are crushed before LC/MS/MS or LC-UV analysis. Different kinds of matrices are studied (brain, liver, muscle, spinal cord of rats, plants, pollens, vegetables, bees) and different systems are used for sample preparation (Ultra-Turrax, Precellys® 24-Dual and Precellys® Evolution). The goal was to prepare a higher quality homogenate in less time.

Materials

- Precellys® Evolution:
 - Precellys® lysing kit: CK68_15ml (KT03961-1-514.15)
 - Sample: 6 mouse brains
 - Buffer: 6 ml of distilled water
- Precellys® 24-Dual:
 - Precellys® lysing kit: CK28_7ml (KT03961-1-302.7)
 - Sample: 4 mouse brains
 - Buffer: 3.6 ml of distilled water

Protocol

Precellys® Evolution: 6500rpm, 2x30sec, 30sec break

Precellys® 24-Dual: 5500rpm, 2x60sec, 30sec break.

– Analysis: LC/MS/MS or LC-UV analysis.

Results

The brain homogenate obtained using Precellys® Evolution was judged equivalent as the one obtained using Precellys® 24-Dual (Figure 1).

Conclusion

Precellys® Evolution is a high-throughput homogenizer that can process up to 36 mouse brain samples in less than 2 minutes. Moreover, the Precellys® Evolution avoids the problem of cross-contamination between samples with the use of single-use tubes (0.5 ml; 2 ml, 7 ml and 15 ml).

Precellys® Evolution is a versatile homogenizer essential for a service lab that deals with a large range of samples.

For more information about Precellys® Evolution visit www.bertin-instruments.com

Biotechniques 65: 231 (October 2018) doi: 10.2144/btn-2018-2007

Figure 1. 6 mouse brains in a 15 ml Precellys® tube before (A) and after (B) homogenization using the Precellys® Evolution.

The main goal was to prepare a higher quality homogenate in less time. 36 brains can be treated simultaneously (6 brains/15 ml Precellys® tube x 6) using Precellys® Evolution instead of 24 (4 brains/7 ml Precellys® tube x 6) with Precellys® 24-Dual. No difference was observed between the 2 evaluated programs.