



## HARD SAMPLE GRINDING WITH 7ML METAL TUBE

Bertin technologies

### / CONTEXT

Up to now, the grinding of very hard samples like teeth and bones requires a pre-grinding step in liquid nitrogen with hammer or mortar in order to get really small pieces. With the new 7mL tube designed in metal, Precellys is now able to grind up to 6 mammalian bones or teeth samples without any pre-treatment. This offers a real alternative to manual grinding.

### / MATERIALS

- Precellys® Evolution + Cryolys®
- Precellys® kit : 7mL metal tube (ref: KT03961-1-602.M) + 3 x 6,8 mm ceramic beads (ref. KT03961-1-107.BK)
- Samples : 200 mg of cow marrowbone; one human teeth (premolar), dried for about 3 years
- No buffer (dry grinding)

### / PROTOCOL

- Precellys Evolution
  - Bones : 7500 rpm – 10x20s (1 min break)
  - Teeth\* : 7500 rpm – 1x20s
- \*The whole teeth is placed into the metal tube and the metal tube is then cooled into liquid nitrogen before grinding
- Analysis method : DNA extraction by following standard protocol

### / CONCLUSION

The combination of 3D-grinding with Precellys® Evolution and a metal tube makes easier the extraction of nucleic acid from very hard samples like bones and teeth. In addition to the capability to process 6 samples at once, the preparation time is dramatically decreased. The quality and quantity of extracted molecules is significantly increased.

### / RESULTS



1) 7mL metal tube designed in inox steel



2) Metal tube adaptor (6 samples at once)



3) 200mg of marrowbone before grinding with Precellys Evolution



4) 200mg of marrowbone after grinding at 75000 rpm – 10x20s (1 min break)



5) Human premolar dried for 3 years ( 1,12g)



6) Human premolar after grinding at 7500 rpm, 1x 20s

The combo Precellys Evolution + metal tube allows to get a fine powder of hard samples in a very short time. Only 20s for the teeth.

The tube can then be reused after cleaning with detergent solution and/or decontaminated by autoclaving.