DRUG NANO-MILLING USING THE PRECELLYS® EVOLUTION AND CRYOLYS

CONTEXT

The majority of approved drugs have poor solubility or permeability. Reducing the particle size and surface area of the API (Active Pharmaceutical Ingredient) increases drug performance and bioavailability which is important in clinical studies . The Precellys® Evolution with Cryolys was validated for drug nanosizing using different milling protocols.

MATERIALS

- **Precellys® Evolution + Cryolys**
- Precellys lysing kits: 0.6-0.8mm zirconia/yytrium beads in 2mL tubes
- Samples: 5 mg/mL of Indomethacin, Ibuprofen, and Itraconazole, respectively, were used as models of poorly water-soluble API
- Formulation vehicle: 1mL of 0.5% Pluronic F68 and 0.5% HPC (low viscosity) dissolved in ultrapure water

PROTOCOL

- Precellys® Evolution: 6500 rpm, 24 cycles of 30 sec, 5 sec pause
- Cryolys cooling unit: Maintained a sample chamber temperature between 2-4 ° C
- Particle size after nanon-milling was measured by a Malvern Zetasizer

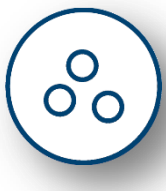
CONCLUSION

Successful nano-milling scale up can be achieved with 2, 7, and 15 mL tubes using the Precellys Evolution. The Cryolys cooling unit allows for nano-milling of temperature sensitive API. **Particle sizes close to 200 nm were observed, which is a new and interesting application on the Precellys**!

SPECIAL OFFER

Precellys tools needed to start nano-milling:

- **Precellys® Evolution** (including 2mL holder pack)
- 7mL and 15mL holder packs
- **Cryolys cooling unit** to protect sensitive API
- 500 empty tubes + 0.6-0.8mm zirconia/yttrium beads
- **Technical expertise** from our Application specialist



Full package for 500 preps starts at

$ 20,000

CONTACT US TO GET PERSONALIZED OFFER

Contact our local distributor to precise your needs:

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Toll Free tel: 1 844 7BERTIN

Package also available for 7mL and 15mL applications