“Is this the fastest way to screen for co-crystals?”

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How?

Using very productive (but normally laborious) techniques

• Liquid Assisted Grinding (LAG)
• Solvent Drop Grinding (SAG)
• Dry Grinding

But milling in many vials, in parallel

• See http://dx.doi.org/10.1016/j.ijpharm.2011.03.037
What is the milling system?

- Patented modification to planetary mill
- Manual or Automated
- Uses vial holders in place of grinding bowls in a Fritsch (or other) planetary mill mill.
- Holds multiple standard inexpensive glass vials*

*can be customised for vial size
Procedure

Dispense a few 10’s mg of API into GC vials
Dispense equivalent, or multiple, moles of CCF into same vials
Add 2 stainless steel 3 mm beads to each
Add a few µL of solvent as needed
Load into mill and process
So, what is the throughput?

- Mills can hold 1, 2 or 4 adapters – ie 12, 24 or 48 samples
- Milling time is 1 to 3 hours

But what about all that dispensing?
Ways to avoid laborious dispensing

- Automaxion provides kits of CCF’s
  - already dispensed to the same molar weight
  - to 10’s mg weights
  - Already in GC vials
- 4 different standard kits of 12 vials
- A list of 148 chemicals to define your own kits

Simply add same weight of API to each vial, 2 beads and the solvent, and then process.
Ways to avoid laborious dispensing

• Automaxion is also working on devices to aid dispensing of the API
  – Either a means to dispense into multiple vials (imprecisely, volumetrically)
  – Or into individual vials under manual control (by weight)

But what about all that analysis?
Fast ways for you to analyse

• Perform Raman through the vial

• Send them to us! (OK, so this might be cheating):
  – Automaxion provides a highly competitive analytical service with the kits, through it’s partners
Summary

- Dispense API into supplied kits
  - With aid, under development
- Add solvent as needed
- Process in mill
- Analyse by Raman or put samples into envelope
- No mill to clean so it’s ready for more

Done.

- No sample loss
- Reprocessing possible
  - …
But that is not the end of it

• We are also working on a way to allow you to select CCF’s in the kit by likelihood of forming a cocrystal with your API
  – Because avoiding an experiment increases throughput.

• So, is this the fastest way?
Thanks for listening

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