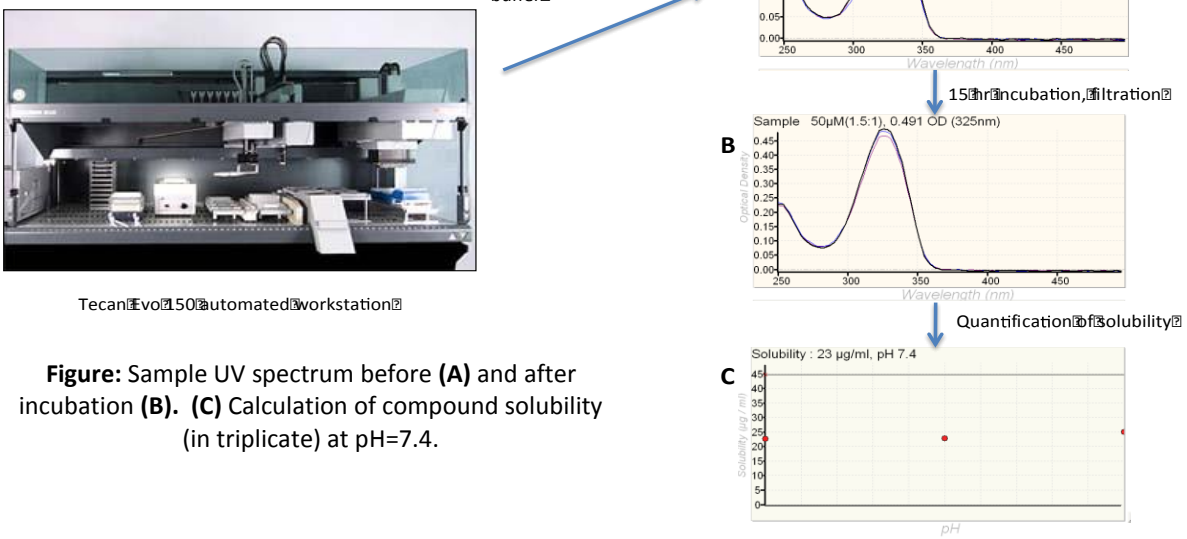
CDDI Focus on Technology: Pion µSol™ Solubility Assay

Instrument: Tecan EVO® 150 Automated Workstation, Tecan Infinite M1000 PRO Plate Reader
Screening tool from Pion: µSol solubility software

Background Solubility is an important consideration in compound development in the hit-to-lead drug discovery process- for bioassays, formulation and intestinal absorption. This potentially problematic hurdle can be managed with high-throughput *in vitro* solubility screening using our Tecan EVO® 150 Automated Workstation and Pion µSol™ software. Samples are incubated in Prisma™ HT buffer solution under single or multiple pH conditions to measure the intrinsic solubility of each sample. The solubility results are determined by UV detection and can be expressed in either µg/mL or Log S units.



Tecan Evo 150 automated workstation

Figure: Sample UV spectrum before **(A)** and after incubation **(B).** **(C)** Calculation of compound solubility (in triplicate) at pH=7.4.

After incubation in the buffer solution the samples are filtered and UV measurements are compared to the reference (prior to incubation) using the plate reader. The quantified results are then compared to standards with known lipophilicity (logD and logP).

The Tecan Freedom EVO 150 workstation (3 arms: 96 channels, 8-span liquid handler and robotic manipulator: Infinite® 1000 PRO microplate reader) is fully automated and capable of analyzing up to 288 samples at a single pH in triplicate per day.

Selected References and Information

(1) Avdeef, A. *et al.* "Solubility of sparingly-soluble ionizable drugs." *Adv. Drug Deliv. Rev.*, **2007**, *59*, 568-590.
(2) Kerns, E. H. *et al.* "Automation in Pharmaceutical Profiling." *JALA*. **2005**, 10, 114-123.

For more information on instrument availability and workshops, please contact:

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