

Poster Presentations

[MS39-P02] Automated protein crystal optimisation with TTP Labtech's dragonfly.
Joby Jenkins

*TTP Labtech, Melbourn Science Park, Melbourn,
Royston, Herts, SG8 6EE*
E-mail: joby.jenkins@ttplabtech.com

The ability to crystallise proteins, nucleic acids or macromolecular complexes pose significant challenges to the protein crystallography community, from large scale screening assays for the determination of initial crystallization conditions, assay optimisation and final screen set-up. Protein crystal optimisation is vital to ensure high quality X-ray diffraction data for the solving of high resolution structures. This optimisation stage involves the set-up of a series of complex screening combinations where the ratios of each individual component where successful crystals have been observed is varied. In order to reduce the effort and tedium of this stage, TTP Labtech have introduced dragonfly as an addition to their successful mosquito liquid handling portfolio for crystallisation screening. Novel dispensing head technology enables automated, non-contact, positive displacement dispensing from disposable syringes directly into crystallography plates. This instrument is capable of dispensing a wide range of fluid viscosities, ethanol to glycerol; with a minimum dispense volume of 1 μ l from a 10 ml reservoir with zero cross contamination. Independent volume control and simultaneous dispensing from up to 10 pipetting heads allows the creation of optimisation screens directly into crystallisation plates in less than 5 minutes. This poster demonstrates that "dragonfly" is a valuable compact low cost addition to the crystallographer's bench, eliminating the tedium and complicated plate set up at the optimisation stage of crystallisation.

Keywords: Crystal optimisation, Optimisation screens, Screen set-up