

MS41-01 | CRYSTALLISATION FOR SERIAL CRYSTALLOGRAPHY IN LIPIDIC CUBIC PHASE (LCP) MADE SIMPLE

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In recent years, serial millisecond and femtosecond crystallography has emerged as promising tool for structural studies of membrane proteins. The possibility of collecting data from very small crystals at room temperature with reduced radiation damage has opened new opportunities to the membrane protein scientific community, in particular in the field of time-resolved studies. However, one of the technical bottlenecks of the method is the production of large amounts of tiny optimized crystals in mesophases (LCP). Here, we present a simple and fast method to prepare hundreds of microliters of high-density microcrystals in lipidic cubic phase for serial crystallography. This approach does not only eliminates the need of using large quantities of gas-tight syringes as also may be used as a high-throughput tool when screening conditions for the growth of high density well-diffraction crystals. The crystals grown by this technique are compatible with the current LCP extruders existent in the free electron lasers and synchrotron sources. This semi-automated method is also easily implemented in any standard crystallisation laboratory.