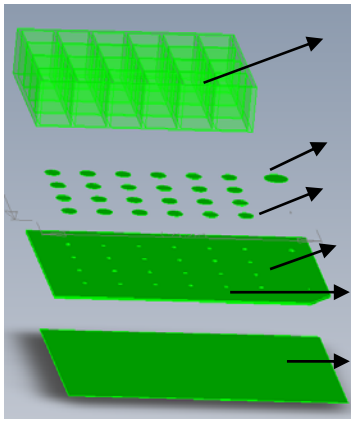
XZ™ Nanoliter Dialysis Crystallography Plate

The XZ™ plate is a dialysis-based microfluidic protein crystallization device that uses patent-pending microfluidic technology to reduce the consumption of precious protein samples by more than 3,000 times the volumes of the existing dialysis protein crystallization products.



Exploded View of the Microfluidic Dialysis Plate

Product Highlights

- Protein consumption as low as 15nL per dialysis chamber
- Fast set-up in as little as 4 minutes for up to 96 dialysis chambers
- Low capital equipment costs to begin running experiments
- High-throughput compatibility with dispensing and imaging systems
- Clear path to structure due to directly scalable designs, easy crystal retrievability and in-situ diffraction capability

Proven Crystallization Method

Dialysis protein crystallization is a well-established method for protein crystallization. This method utilizes the diffusion and equilibration of small precipitant molecules through a semi-permeable membrane as a means of slowly approaching the concentration at which the protein solute crystallizes.

Precise Nanoliter Metering of Protein Samples

The XZ™ plate patent-pending microfluidic technology enables precise loading of protein samples. Dialysis protein crystallization experiments having protein consumption as low as 15nL per chamber make the XZ™ plate an attractive option for screening experiments.

Directly Scalable Design

The larger volume XZ™ optimization and growth plates (up to 1μL per chamber) have the same diffusion lengths (400μm) to that of the screening plates, therefore, these designs allow for straight forward scale-up to run optimization experiments as well as for translating screening conditions to grow harvestable crystals for use in x-ray diffraction.

Easy Crystal Extraction

Unlike other enclosed microfluidic systems where crystals are difficult to extract, crystals grown on XZ™ plates can be easily extracted because the dialysis membrane in each reagent well can be conveniently removed to allow easy loop access for crystal manipulation.

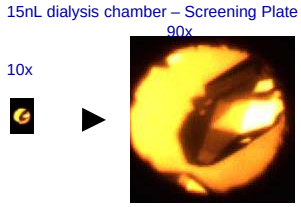
In-Situ Diffraction Capability

The XZ™ plates can be used as is for meaningful in-situ diffraction data collection using a SBS plate gonimeter (BL8.3.1, ALS), thus avoiding time consuming crystal manipulation steps and damages associated with crystal handling.

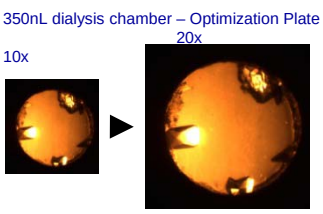
Availability

1x96 XZ™ Screening, Optimization and Growth Plates are now available. Other configurations are available upon request.

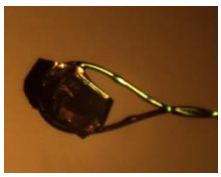
15nL dialysis chamber – Screening Plate



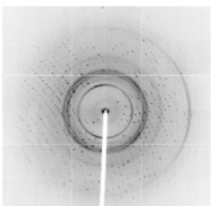
350nL dialysis chamber – Optimization Plate



Lysozyme crystals in screening and optimization dialysis plates



extracted crystal



1.5Å resolution in-situ diffraction data

Contact

To start running your crystallization experiments using the XZ™ plates please contact sales@gnbiosystems.com. +1-510-333-3488. www.gnbiosystems.com