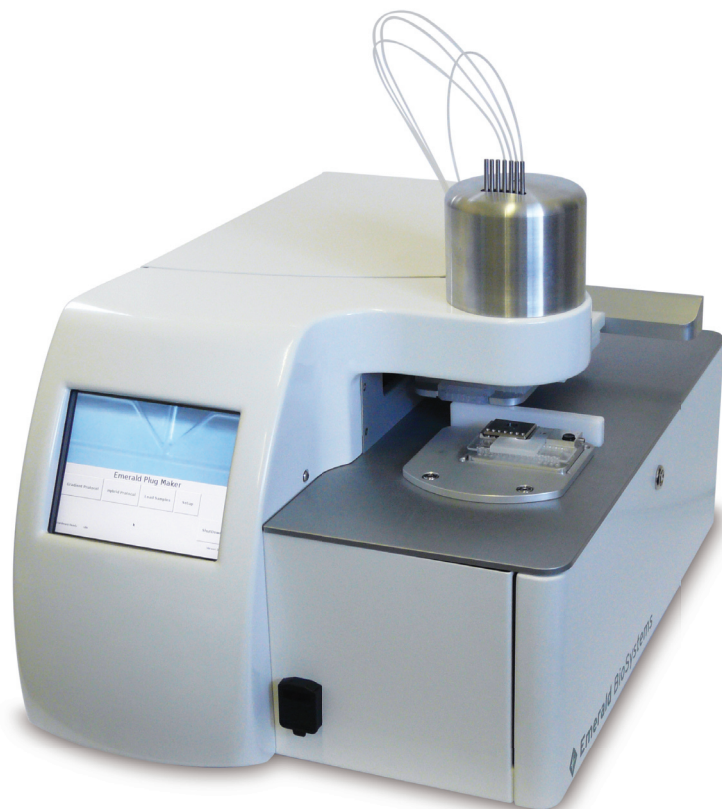


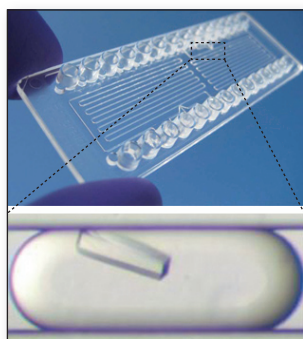
MPCS™ | PLUG MAKER



Grow Diffraction Ready™ crystals with about 2 μ L of protein.

The **Microcapillary Protein Crystallization System™** (also called Plug Maker™) is a next-generation protein crystallization workstation that enables you to obtain crystals from as little as 10 nL of protein per experiment. Perform high-throughput, batch-style crystallization in “plugs” inside microfluidic CrystalCards™. The crystals can be easily extracted for analysis by X-ray diffraction or subjected to *in situ* X-ray diffraction.

- > **Screen**, optimize, and produce diffraction ready crystals
- > **Generate** up to 800 individual experiments per CrystalCard using about 4 μ L of protein
- > **Combine** protein with up to 24 conditions at a range of concentrations in each CrystalCard.
- > **Increase** your chance of obtaining a crystal



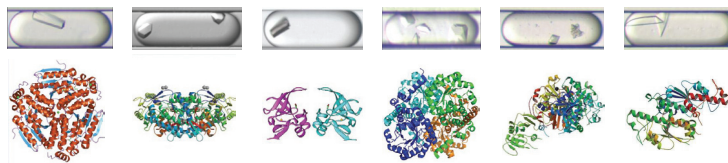
Grow crystals in durable, X-ray transmissive CrystalCards. Visualize crystallization sweet spots, transport crystals, or store them for months in the cards. Remove crystals easily for traditional cryoprotection and X-ray diffraction studies. Or test crystals for X-ray diffraction inside the CrystalCards using a simple goniometer adaptor.



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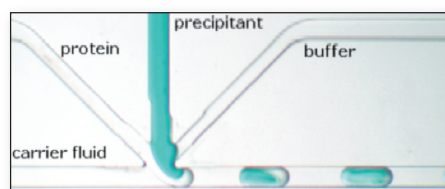
Grow crystals, solve structures

These images show actual crystals grown in, and harvested from CrystalCards along with the corresponding 3-D structures that resulted.



CrystalCards: convenient, portable, diffractable

Each CrystalCard combines protein, precipitant, and buffer to create individual experiments at various concentrations that are separated by carrier fluid. Ideal for sparse matrix and gradient screening, ligand screening, microfluidic seeding, batch-style protein crystallization experiments, and simultaneous gradient screening from two crystallization hits.



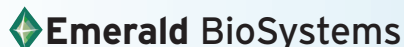
Technical features

- > Screen more conditions: Sparse matrix and gradient (hybrid) screening for thorough phase space sampling
- > Easily optimize: Efficiently scan a narrow region of phase space in a single go
- > Scan different concentrations of protein, precipitation agents, ligands, or cryoprotectants
- > Perform microfluidic seeding experiments
- > Offers a benchtop footprint of less than 2 by 2 feet
- > Winner of the 2010 Association for Lab Automation New Product Award



References and patents

- > Gerdts CJ et al., Nanovolume optimization of protein crystal growth using the Microcapillary Protein Crystallization System. J. Appl. Cryst. (2010). 43, 1078-1083
- > Gerdts CJ, et al., The plug-based nanovolume Microcapillary Protein Crystallization Systems (MPCS). Acta Cryst. (2008) D64 (Pt 11):1116-22
- > US Patents #7,129,091; #6,409,832; #7,655,470, and patents pending



Emerald BioSystems is a leading provider of sophisticated laboratory automation, **reagent kits, stock solutions, and plasticware** products for structural biologists. An innovation leader, scientists at Emerald BioSystems and its sister company Emerald BioStructures have created award-winning research tools that accelerate the gene-to-protein structure determination process. Our instruments automate cell-free protein expression, protein purification, liquid handling, and crystallization. Our stock solutions and reagents are available individually and in convenient screens. The **Opti Matrix Maker** allows you to create your own 96-formulation reagent kits in a matrix using 10 stocks and water.