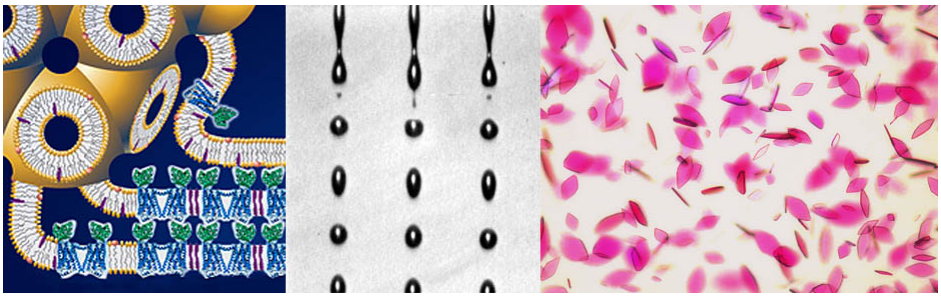

MicroFab Technologies announces the award of an NIH Phase I SBIR program entitled, "Inkjet Based System for Lipid Cubic Phase Crystal Screening of GPCR's."

This project will develop new instrumentation to perform crystallization screening of brain-derived G-protein coupled receptors (GPCRs) and other membrane proteins to obtain highly ordered crystals for X-ray diffraction and molecular structure determination. This instrument (LCPJet) will employ lipidic cubic phase (LCP) protein crystallization technology, demonstrated to be a highly successful membrane protein crystallization approach, with picoliter volume delivery of protein and precipitant via inkjet dispensing, creating a novel methodology for these existing technologies. The in meso LCP creates an organizing and stabilizing environment in which the protein retains its native conformation and activity, thus better facilitating nucleation and crystal growth of recalcitrant to crystallize membrane proteins. Inkjet dispensing of picoliter drops by LCPJet will require an order of magnitude less volume compared to other approaches using nanoliter volumes. This will extend the use of a crystallographer's limited GPCR sample, thus enabling the exploration of larger crystallization parameter space through a greater number of crystallization experiments, while using less material.

LCPJet will perform unprecedented on-the-fly mixing of molten lipid directly with the protein solution. This capability will eliminate mechanical mixing of molten lipid and protein solution and will enable screening of different lipids and ligand additives using sub-nanoliter volumes, making LCP crystallization trails feasible. The system will also be capable of on-the-fly generation of custom optimization / grid screen crystallization trials using inkjet dispensing. This approach eliminates the requirement of having a separate liquid handling robot to formulate the optimization screens, thus saving time and reducing expense. LCPJet will provide the user flexibility to perform sponge, bicelle, vapor diffusion and microbatch screening experiments. Access to the LCPJet technology will offer a more effective approach to the crystallogenesis of GPCR's resulting in a greater number of high-resolution crystal structures, thus leading to development of more selective pharmacologic treatments for improving mental health.