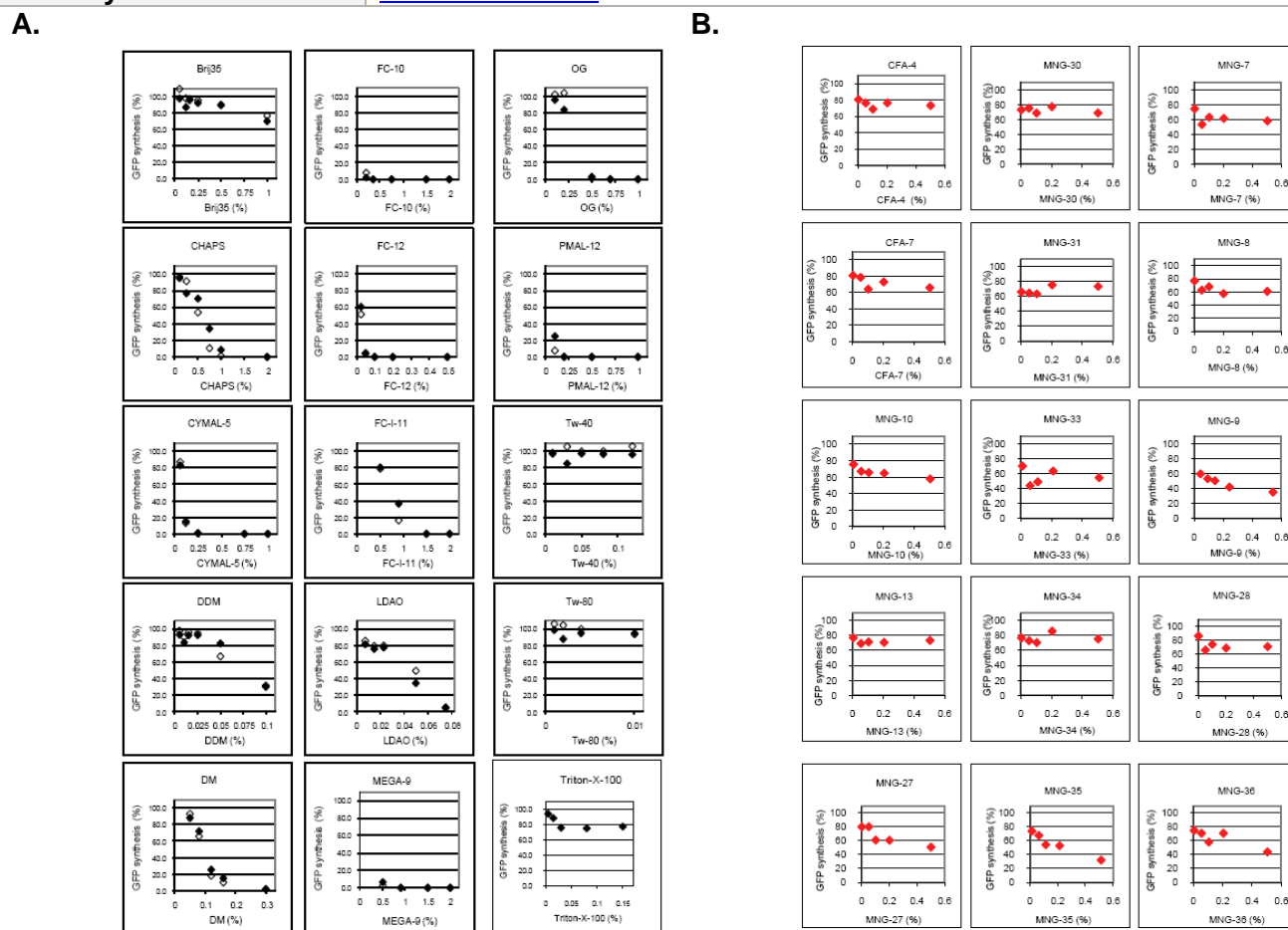


Center for Eukaryotic Structural Genomics

Technology Dissemination Report

CESG Tech Report No.	023
Title	Development of Detergent Arrays for Membrane Protein Compatibility Screening
Research Unit	Cell-Free Protein Production
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Summary

We have developed a series of detergent arrays for high-throughput screening of cell-free protein expression of membrane proteins. The above graphs describe the effect of a variety of detergents on wheat germ-based *in vitro* translation in 96-well bilayer format. Each detergent was tested at several concentrations ranging from below the critical micelle concentration (CMC) to several-fold higher than the CMC. Effect on translation was monitored by the level of fluorescence of GFP expressed in each condition. **Panel A** shows the effect of non-ionic and zwitterionic detergents commonly used for membrane protein purification. Each translation series was performed twice (open and closed symbols). The results demonstrate the diversity of translation compatibility profiles for commonly used detergents.

A series of novel amphiphiles of the CFA and MNG class were also tested (**Panel B**) to establish a link between the size of the hydrophilic group and translational compatibility. These low-CMC compounds are largely compatible with translation even at concentrations several hundred times the CMC. The compounds with the longest hydrophobic tails displayed the highest level of compatibility.

Acquiring the Technology	Contact Brian Fox bgfox@biochem.wisc.edu .
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