

### **53c Two Dimensional Electrophoresis in Liquid Media: Advances Using the Protein Profiler™ for the Separation and Quantification of Fluorescence-Labeled Proteins and Peptides**

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Two dimensional gel electrophoresis (2DGE) remains unchallenged in its ability to resolve complex mixtures of proteins and in its efficiency of presentation. For these and other reasons, it is ideally suited for the separation and isolation of differentially expressed proteins from normal and perturbed cells or tissues. However, even with advances in gel manufacturing and electrophoretic devices, its implementation remains difficult and time-consuming, and fraught with artifactual losses. We have been engaged in developing a liquid-based 2DE system, called the Protein ProFiler™, that preserves the desirable features of 2DGE that together with pre-separation covalent saturation fluorescence labeling yields a system that is rapid, accurate, sensitive, and permits real-time monitoring and quantitative recovery of proteins for post-separation processing and identification. We will present performance of the system with standard proteins and peptides, as well as complex mixtures of proteins with internal peptide standards.