CORRESPONDENCE

ROTARY FILTRATION

To the editor:

The article on "Downstream Processing" (*Bio/Technology* **7**:777, Aug. '89) correctly identifies the two major problems affecting filter performance—fouling and concentration polarization. The evolution of filtration technology has been towards the solution of these problems. Stirred cell and cross flow configurations are technologies developed and marketed to solve these problems. A third solution is available in the form of rotary filtration. I would like to clarify one point, however. Membrex's Benchmark® system is neither a cross flow nor a tangential flow system. Benchmark is a rotary filtration system which exploits a phenomenon of hydrodynamics called Taylor flow to reduce and control the concentration polarization effect. Taylor flow coupled with hydrophilic membranes serves to reduce fouling. Large scale Taylor flow systems are being tested, at present, in various process configurations.

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CAPILLARY ELECTROPHORESIS

To the editor:

Several unfortunate typographical errors found their way into the recent article on Capillary Electrophoresis (*Bio/Technology* **7**:903, Sept. '89). While some are obvious, several others are quite misleading and should be brought to the attention of your readers. In the table "Manufacturers of CE Systems," Microphoretic Systems is shown as offering a CE system with a 0.3 kV power supply, which would provide a very leisurely electromotive force. This clearly should be 30 kV instead. The BioRad HPE 100 system does have dual power supplies, an important safety feature which ensures that the detector is always at or near ground potential. The Applied Biosystems Model 270A thermostats the capillary with a heated air bath which can maintain any set temperature from 5 °C above ambient up to 60 °C. It does not maintain a set temperature of 5 °C unless one is working in a quite frigid environment.

A number of readers questioned why the article provided no data on detector sensitivity. Considerable effort was, in fact, expended trying to obtain directly comparable specifications from the various manufacturers. But we were not able in the time available to get agreement on the standardization of samples to be used, along with buffer ionic strength and pH, volumes injected, capillary diameters, and wavelength measured. Rather than present misleading data, we omitted these from the table. We suggest that readers evaluate their own standardized samples with a short list of qualified suppliers, bearing in mind the variables mentioned above. We are also tentatively planning to include this data in a second article next year when additional suppliers are expected to be on the market.

Several readers questioned why, as the article states, electromigration cannot be considered a universal injection system. This is due to the method's extreme sensitivity to the ionic strength and pH of the sample buffer. A lower ionic strength results in a larger voltage drop within the sample vial and a more rapid loading of the sample onto the capillary. This causes severe reproducibility problems when comparing samples with unmatched ionic concentrations. For this reason, most manufacturers offer, as an alternative, a pressure differential method of sample injection employing either positive or negative pressure. Neither positive nor negative pressure can be considered a universal means of injection, though, since the method is not recommended when loading gel-filled capillaries. Both Dionex and Beckman recommend using electromigration when loading these capillaries. The article's advice stands: look for versatility in sample injection when selecting system.

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