

Commemoration  
Tribute to Professor S. Terabe

I first met Professor S. Terabe in the mid-1980s and I have visited his laboratory in Japan on several occasions. In my opinion, Professor Terabe is best known for his discovery and development of micellar electrokinetic chromatography (MEKC), a powerful separation technique that offers outstanding advantages in the separation of nearly neutral compounds present in a mixture. The separation of cationic and anionic species in solution is possible in capillary electrophoresis (CE) by choosing a suitable pH value of the solvent so that the species are charged and can be readily separated by virtue of their differential motions in an applied electric field. Much more problematic, however, is how to separate nearly neutral species that essentially move together in CE. What Professor Terabe has shown is that the introduction of a surfactant above its critical micellar concentration causes the surfactant to self organize into micelles in solution (the running buffer). These micelles form a pseudo-stationary phase into which species partition at different rates. Consequently, chromatographic separation is combined with electrophoretic separation to permit the separation and analysis of complex mixtures into their chemical constituents, both charged and neutral. For this reason this separation technique has been named by Professor Terabe micellar electrokinetic chromatography (MEKC).

MEKC has found wide uses both as a separation technique and in combination with other analytical tools, such as mass spectrometry. Since discovering this technique, Professor Terabe and co-workers have gone on to make many improvements, such as its use in preconcentrating samples prior to sample anal-

ysis. The impact of his work in the separation sciences has been immense. To appreciate this fact, I asked a search engine to find all those articles having the terms “micellar electrokinetic chromatography” or “MEKC” in their titles or abstracts. Of course, this selection does not gauge the full impact of MEKC, but it does serve as an interesting measure. I found the following:

Period	Number of articles
1990–1991	58
1990–1992	102
1990–1993	179
1990–1994	298
1990–1995	438
1990–1996	591
1990–1997	827
1990–1998	1022
1990–1999	1240
1990–2000	1461
1990–2001	1699
1990–2002	1957
1990–2003	2245
1990–2004	2466
1990–2005	2633

There can be no doubt what a giant in the field is Professor Terabe! It is a privilege to pay tribute to his many impressive accomplishments.

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