

CHROMBIO. 1411

## Letter to the Editor

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**Analysis of barbiturates in blood by high-performance liquid chromatography**

Sir,

In a recent letter [1] Dr. Gupta has made some valuable comments concerning the use of alkaline eluents in high-performance liquid chromatography (HPLC) with particular reference to our recent paper [2] describing the analysis of barbiturates in small volumes of blood. In this procedure, using an ODS-silica column, we advocated the use of a pH 8.5 eluent to enhance detection sensitivity and optimise separation. Dr. Gupta relates their experience of a rapid loss in column efficiency with eluents of  $\text{pH} > 8$ .

The dissolution of silica in aqueous solutions at high pH is well known but our experience has shown that ODS-silica columns have reasonable lifetimes (weeks rather than days) when used with the pH 8.5 eluent providing that sensible precautions are taken. We include a short column packed with silica (40  $\mu\text{m}$ ) between pump and injector to ensure that the mobile phase contains dissolved silica before entering the analytical column [3] and maintain a continuous flow such that the packing material is never in contact with static eluent. At the end of each working day the column is thoroughly washed with methanol–water (50:50, v/v) before stopping the flow.

Voids at the top of ODS-silica columns have occasionally been encountered after periods of extensive use but we do not consider this to be an overwhelming problem and certainly not outweighing the usefulness of the assay. Such voids are generally easy to repair by topping up with packing material hence restoring the performance of the column and extending its life. In addition, we pack our own HPLC columns rather than buying expensive pre-packed columns and finding this rapid and straightforward would urge others to do the same. By so doing costs are considerably reduced and column deterioration is not seen as such a serious disaster.

We thank Dr. Gupta for highlighting this problem area.

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- 1 R.N. Gupta, *J. Chromatogr.*, 233 (1982) 437.
- 2 R. Gill, A.A.T. Lopes and A.C. Moffat, *J. Chromatogr.*, 226 (1981) 117.
- 3 J.G. Atwood, G.J. Schmidt and W. Slavin, *J. Chromatogr.*, 171 (1979) 109.

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