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Letter to the Editor

Liquid chromatographic determination of mitomycin C in human plasma and urine

Sir,

In the paper of Eksborg et al. [1] on the liquid chromatographic analysis of the antitumor agent mitomycin C in plasma and urine, it was claimed that the aim of the study was to simplify a previously described sample treatment [2] and to find conditions under which the degradation of mitomycin C is negligible for a proper handling of biological samples as well as for the use of a suitable liquid chromatographic isolation procedure. However, we wish to comment on both parts of this study.

As far as the sample pre-treatment procedure is concerned, evaporation of 1—10 ml of chloroform—2-propanol (1:1, w/w) takes some hours [2]; but, because of the varying sample size and accordingly varying amount of extraction solvent, a skilled analyst can arrange the treatment of the samples in such a way that the first extracts are ready for chromatographic analysis at the time when all the extracts are prepared. The alternative proposed by Eksborg et al. [1], Sep-Pak C_{18} column separation of plasma substituents and drug, needs column pre-treatment and includes evaporation of 4 ml of methanol. We think it is very doubtful whether this procedure, which is moreover much more expensive, is simplified and less time-consuming. The main draw-back of this sample treatment is, however, the varying recovery at different concentration levels. If one prefers column isolation above a liquid—liquid extraction, we suggest the use of Amberlite XAD-2 columns, which do not introduce non-linearity in the recovery, although it needs experience to produce these non-commercial columns reproducibly [3].

A thorough investigation into the pharmacokinetics of mitomycin C in 36 patients showed that the batch-wise extraction procedure is reliable and fast enough for routine analysis [4].

With regard to the second aim of Eksborg et al. [1], the authors only studied the instability of pure mitomycin C in acidic media, a subject which is already well-documented in the literature [5]. The authors did not solve the main problems in the handling of biological samples containing mitomycin C such as the proper conditions for the separation of plasma and red blood cells, stability of mitomycin C during storage, stability in daylight, etc. [6].

Without having investigated these subjects, a study into the conditions for a proper handling of samples seems at the least incomplete.

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