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## Liquid chromatography mass spectrometry for determination of medetomidine and other anesthetics in plasma\*

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Medetomidine, 4-[1-(2,3-dimethylphenyl)ethyl]-1H-imidazole hydrochloride, is used as an analgesic sedative for animals. It is a full agonist at both pre- and postsynaptic  $\alpha_2$ -adrenoreceptors. Human use as premedication is under investigation. Medetomidine has no significant absorption at wavelengths longer than 220 nm and lacks native fluorescence. These properties make it difficult to develop a chromatographic assay method of the drug and its metabolites. Its gas-chromatographic mass-spectrometric assay in serum was reported. Though the method is very sensitive, the need for derivatization with pentafluorobenzoyl chloride made it somewhat tedious.

A liquid chromatography atmospheric-pressure chemical-ionization mass spectrometric assay is presented for the simultaneous determinations of medetomidine and other anesthetic drugs in solutions and dog plasma. The drugs examined were flumazenil butorphanol, atropine, ketamine xylazine medetomidine, atipamezole, and midazolam. The separation was carried out on a reversed-phase column, using methanol 0.1 M ammonium acetate (3 : 2). The peaks were separated satisfactorily to allow determination of each component. The method can be also used for the identification and determination of metabolites of medetomidine and the other drugs in plasma.

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