

'...a study designed to assess the appropriate anaesthetic dosage for these marine giants using Zoletil...'

Anaesthesia of the Southern Elephant Seal

There is some evidence to suggest that during the past forty years the population of Elephant Seals in the Southern Ocean has been halved. Whether increased predation or diminished food supply is responsible for limiting the number of seals is not known (Reference 1). Intense fishing by commercial fleets in Southern waters, in particular those using 'drift-net' techniques, may also be a significant factor.

As part of a continuing international program aimed at monitoring the population of the Southern Elephant Seal, scientists from the Australian Antarctic Division (Kingston, Tasmania) attach sensors to the hides of anaesthetised seals in order to record variations in temperature and pressure experienced by individual members of the species.

The chromatograms displayed in Figure 1 resulted from a study designed to assess the appropriate anaesthetic dosage for these marine giants using Zoletil™, a combination of tiletamine (1) and zolazepam (2).

Keywords:

Zoletil, tiletamine, anaesthetics, tranquilisers, conservation studies

Hydrophobic bases such as the anaesthetic, tiletamine (1), usually exhibit poor peak symmetry owing to excessive tailing when chromatographed on octadecylsilyl - modified silica, i.e., on an ODS or C18 column. This undesirable asymmetry may be remedied by the addition of alkylamine salts, e.g., triethylammonium phosphate, to the mobile phase. However, in this instance, a column packed with cyanopropylsilyl - modified silica, i.e., a cyano (CN) or nitrile column, which provided suitable peak symmetry throughout the simple, isocratic analysis was chosen.

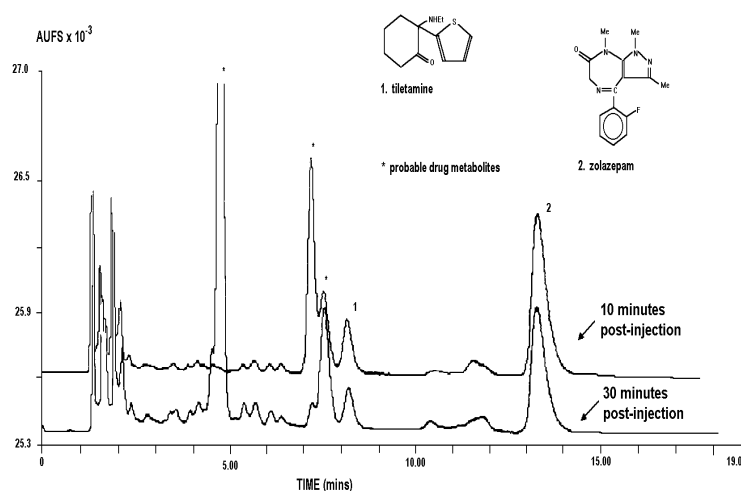


Figure 1 Serum levels of tiletamine and zolazepam at 10 and 30 minutes post-injections



HPLC Conditions

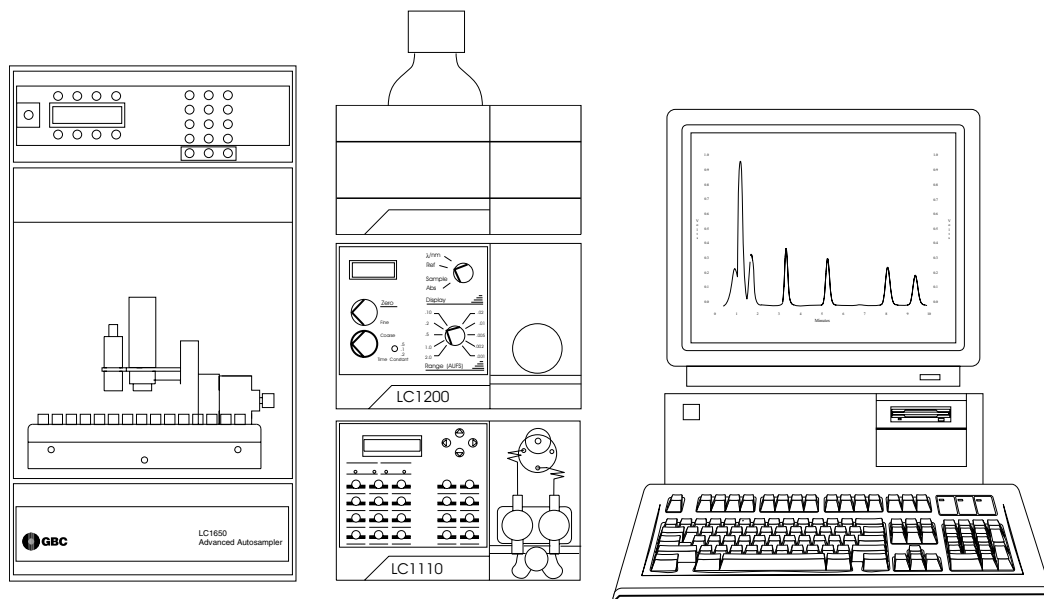
Column: Spherisorb S5 CN,
250 mm x 4.6 mm ID
Guard: Spherisorb S5 CN,
50 mm x 4.6 mm ID
Mobile Phase: Acetonitrile: 0.1 M NH₄
C104 aq (8.92)
Wavelength: 227 nm
Injection Vol.: 20 µl

GBC HPLC Instrumentation

LC1110 Dual Piston HPLC Pump
LC1650 Advanced Autosampler
LC1200 Variable Wavelength UV/Vis
Detector
WinChrom Chromatography Data
Management System

Reference

1. Harry Burton, 'The Tasmanian Naturalist', 1986,
No.86 (July), 4.



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