caroverine etc. A 33-year-old female who was in the hospital treatment was found lying in the rest room of a neurological hospital. The public prosecutor ordered to examine the cause of death closely. The corpse was sent to Western District Office, National Institute of Scientific Investigation and the autopsy was performed. We received the postmortem blood and gastric contents obtained at autopsy for toxicological investigations, together with the medical prescription and her prescribed drugs. The analytes were extracted by back extraction with ethyl acetate. After extraction, the extracts were reconstituted 50$\mu\ell$ dextromethorphan (IS, 100μg/mℓ in methanol). Levomepromazine, chlorpromazine, flurazepam, tramadol, benztropine and caroverine were detected in gastric contents and blood by GC/MS and quantitated in the blood using GC. These drugs were consistent with the medical prescription, and also detected in her prescribed drugs. The quantitative contents in postmortem blood were levomepromazine 0.92μg/mℓ, chlorpromazine 0.38μg/mℓ, flurazepam 0.23μg/mℓ, tramadol 0.30μg/mℓ and benztropine 0.26μg/mℓ, caroverine 0.29μg/mℓ, respectively.

[PD4-14] [04/19/2002 (Fri) 10:00 - 13:00 / Hall E]

Determination of Hydrogen Peroxide Concentration by Portable Near-Infrared (NIR) System

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This experiment was carried out to determine the hydrogen peroxide concentration of 3% antiseptic hydrogen peroxide solutions. Hydrogen peroxide standards were prepared over the range of 0 to 25% concentration and the near infrared (NIR) spectra for hydrogen peroxide standard solutions were collected through a quartz cell in 1mm pathlength. Partial least square(PLS) regression was explored to develop a calibration model over the spectral range 1100-1750nm. We found the variation of absorbance band due to OH vibration of hydrogen peroxide depending on the concentration change around 1400nm. The calibration showed good results with a standard error of prediction(SEP) of 0.18%. In order to validate the developed calibration model, routine analyses were performed using newly prepared standard samples and commercial antiseptic hydrogen peroxide solutions. The hydrogen peroxide values from the NIR calibration model were compared with the values for a redox titration method. Results of the NIR routine analyses showed good correlation with those of the reference method, the redox titration. This study showed that the determination of hydrogen peroxide in the antiseptic solution was successfully performed by portable NIR system without very harmful solvents.

[PD4-15] [04/19/2002 (Fri) 10:00 - 13:00 / Hall E]

Enantiospecific Determination of Ibuprofen by HPLC

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Achiral-chiral HPLC method has been developed for the stereo-specific analysis of ibuprofen. Achiral analysis was carried out using a Novapak C18 (4.6mmx 250mm, 5μm) column with acetonitrile/water/acetic acid/triethylamine(55:45:0.1:0.02) at a flow-rate of 1.0ml/min. Diastereomers of ibuprofen were detected at 232nm. Separation is based on the resolution of the diastereomeric amides formed on reaction of the ibuprofen enantiomers with (S)-(-)-and (R)-(+)-1-(1-naphthyl)ethylamine(NEA) in the presence of ethylchloroformate. The standard calibration curve of each ibuprofen diastereomers showed good linearity from 0 upto 50.2μg/mℓ (R=0.9976, S-form, R=0.9981, R-form). R/S ratio of standard solutions was 1.01$\pm$ 0.01.
Chiral analysis was carried out using a (R,R)-Welk-O1 (4.6mmx 250mm, 5μm) column with hexane/isopropanol/acetic acid (98:2:0.5) at a flow-rate of 0.9ml/min. Detection of the enantiomers was successful at 220nm without pre-column derivatization. Same method was applied to the determination of ibuprofen tablets containing racemic mixtures. Standard ibuprofen racemic mixture showed linear correlation up to 51.0μg/mℓ, and the R value was 0.9993 for S-ibuprofen, 0.9993 for R-ibuprofen, respectively. And the R/S ratio of commercially available ibuprofen tablets determinated by chiral column method was 0.972~ 1.049.

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