

IV.12 - Detection of Phenothiazines and Neuroleptics

Detection of phenothiazines and neuroleptics is carried out on the blood and/or stomach contents and/or viscera. Extraction is done using an extrelut column and dichloromethane and/or a C₁₈ column, depending on the state of preservation of the sample. Various methods are used.

A - Identification by gas chromatography coupled with mass spectrometry

Equipment and technique:

- HP 5890 series II chromatograph
- Mass spectrum HP 5972 A or improved 5973
- Microbore column; Stationary phase: methyl silicone
- Vector gas: helium, Temperature: 50 to 320 °C
- Volume injected: 1 µl

B - Identification and quantitative analysis by high pressure liquid chromatography coupled to photodiode array

Equipment and technique

- WATERS chromatograph
- automatic injector: 717 plus autosampler
- 600E quaternary pump
- Waters 996 photodiode array - recording of spectrum from 200 to 350 nm
- C₁₈ column - mobile phase: water - acetonitrile - phosphate buffer; injection: 20 µl
- capacity: gradient 1 to 1.5 ml/min

The principal standards used are: amisulpride, sulpiride, sultopride, trifluoperazine, trifluopromazine, penfluridol, metoclopramide, chlorproethazine, aceprometazine, acepromazine, trifluperidol, droperidol, prometazine, cyamemazine, haloperidol, fluphenazine, thioridazine, loxapine, levomepromazine, prephenazine, propericyazine, zuclopenthixal, flupenthixol

Conclusion: In these conditions, the presence of a neuroleptic in Henri PAUL has been revealed:

- in the blood: tiapride = 0.006 µg/ml
(therapeutic levels 1 to 2 µg/ml)
- in the urine: tiapride = 2.73 µg/ml
- in the stomach contents: tiapride < 0.005 µg/ml
 - liver: tiapride < 0.05 µg/g
 - kidney: tiapride < 0.05 µg/g
 - spleen: tiapride < 0.05 µg/g
 - lungs: tiapride < 0.05 µg/g
 - pancreas: tiapride < 0.05 µg/g

NB: the extraction yield of tiapride in the liver is 69 % with the method used, and 72 % in the lungs.