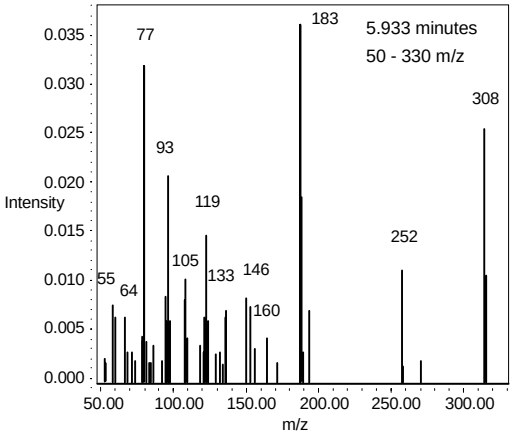
Waters Integrity System Applications

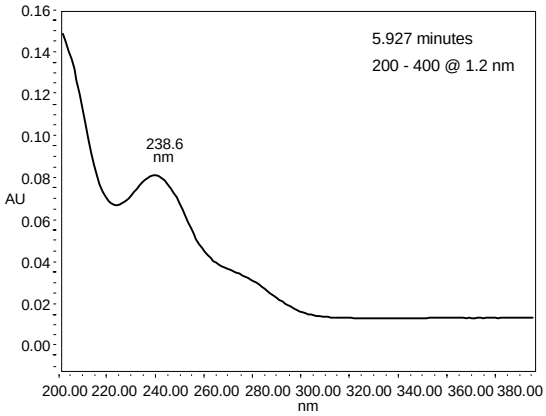
Identifying Anti-Inflammatory Drugs

Highlights: Analysis of veterinary anti-inflammatory drugs using combined photodiode array and mass spectra to confirm identity.

Photodiode array detectors produce UV spectra which can be used for identification of compounds through spectral matching. Many UV spectra are quite similar and without reference spectra cannot be used for positive compound identification. The ability of the photodiode array detector to provide information on peak homogeneity combined with the availability of commercial mass spectral libraries simplifies the identification of unknowns and increases confidence in chromatographic peak identification.

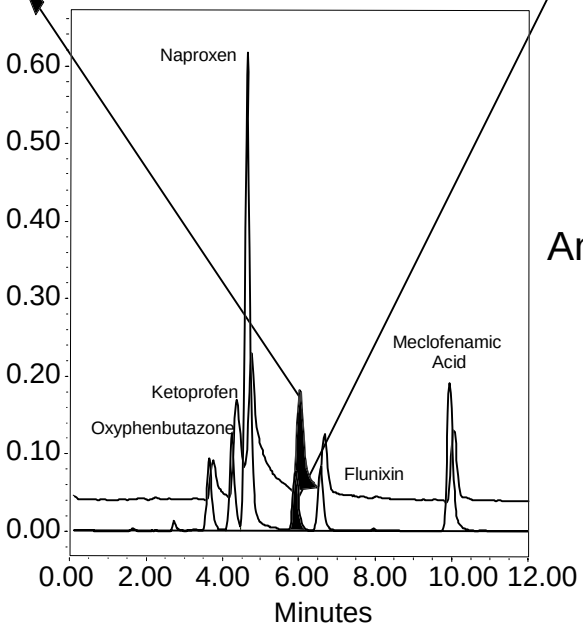


Phenylbutazone Peak UV Photodiode Array and EI Mass Spec data from a single injection



MS Spectrum from Ion Current Response for Phenylbutazone Peak

PDA UV Profile Response for Phenylbutazone Peak

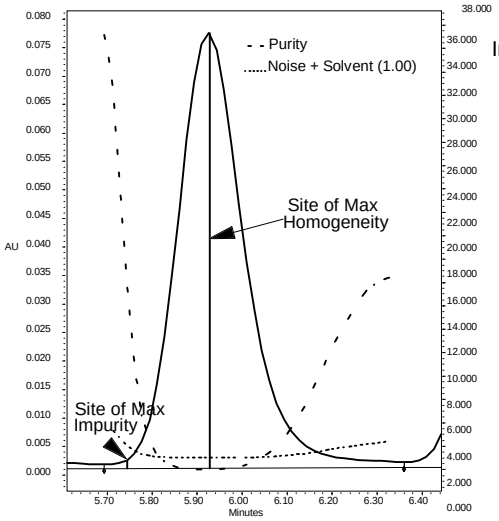


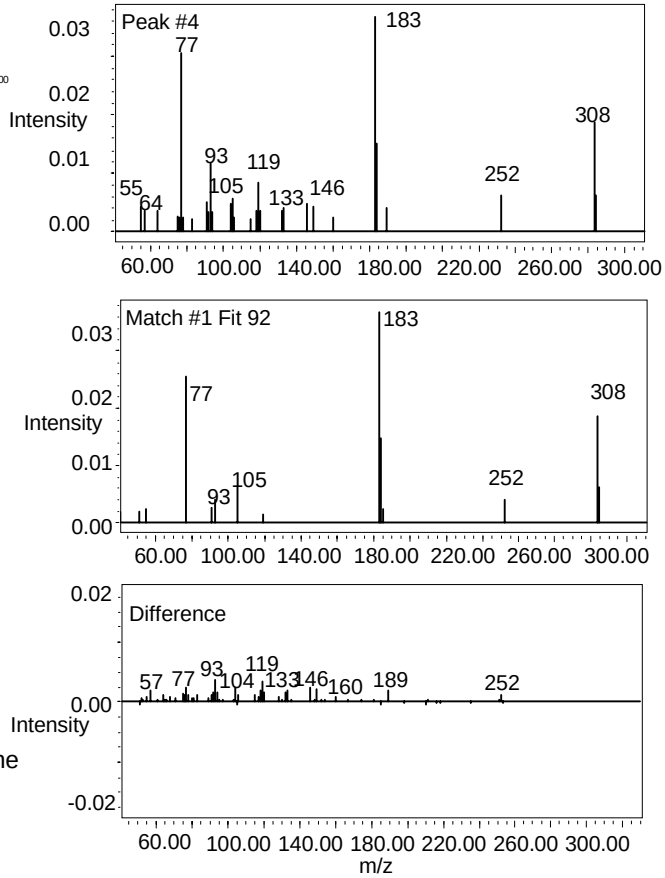
Anti-Inflammatory Drug Mixture

100ng sample injected on column

The combination of mass spectral and photodiode array detection provides a complete picture of the chromatographic peaks in a separation. The anti-inflammatory drug mixture shows reasonable response in both the UV and the PDA at the 100 ng level injected.

Copyright 1998 Waters Corporation.



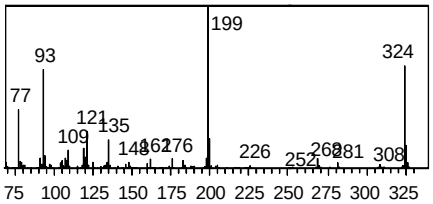


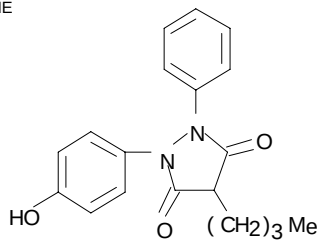
Millennium PDA Purity Plot and MS Triple Plot for Phenylbutazone Peak

PDA
Purity Angle: 0.71 Threshold: 1.05
MS
Fit 92 Contamination 15 Phenylbutazone

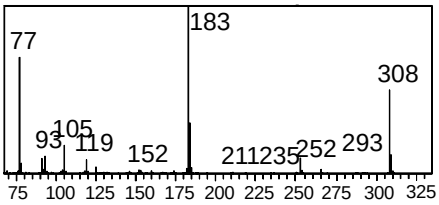
Wiley Library Reference Spectra

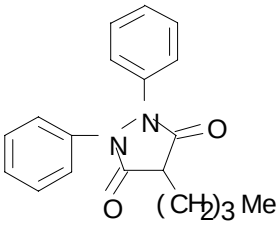
Serial: 48374 CAS Reg No: 129-20-4 MW: 324 Form: C19 H20 N2 O3
Oxyphenylbutazone
1-(P-HYDROXYPHENYL)-2-PHENYL-4-BUTYLPYRAZOLIDINE





Serial: 45890 CAS Reg No: 50-33-9 MW: 308 Form: C19 H20 N2 O2
Phenylbutazone
1,2-DIPHENYL-4-BUTYLPYRAZOLIDINE-3,5-DIONE





Phenylbutazone and oxyphenylbutazone differ only in a hydroxyl group, but the mass spectra are clearly distinct and allow for positive compound identification.

Waters
Waters and Integrity are trademarks of Waters Corporation.
1996 Waters Corporation. Printed in the U. S. A.