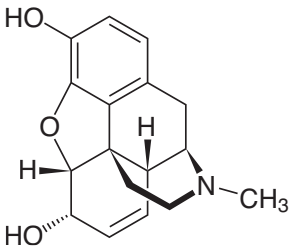
SCREEN & QUANTIFY PAIN MANAGEMENT DRUGS FOR FORENSIC TOXICOLOGY

Sensitive, six-minute LC/MS analysis of 65 compounds and their metabolites in urine

Forensic Toxicology



Morphine

Figure 1. Structure of a target compound.

Background

LC/MS is an ideal solution for accurately and confidently analyzing large panels of pain management compounds spanning multiple drug classes. Using the simple method presented here, LC/MS delivers sensitive and specific results for these toxicologically relevant analytes with rapid sample turnaround.

The Approach

A comprehensive LC/MS method was developed, using dynamic MRM for the analysis of a suite of compounds: amphetamines, benzodiazepines, opiates, stimulants, and drugs of abuse. Analysis with the combination of an Agilent 6400 Series Triple Quadrupole Mass Spectrometer coupled to an Agilent 1200 Infinity Series LC delivered the outstanding sensitivity and specificity required to confidently identify and quantify compounds of interest in difficult biological matrices.

With easy-to-use MassHunter software, a simple work flow can be established to rapidly screen and quantify these compounds. Linearity of calibration curves, as well as accuracy of quality control and sample data, can be quickly verified. Processed data can be viewed in a variety of customizable report formats or can be exported to a laboratory informatics system (LIMS) in .xml or .csv format.

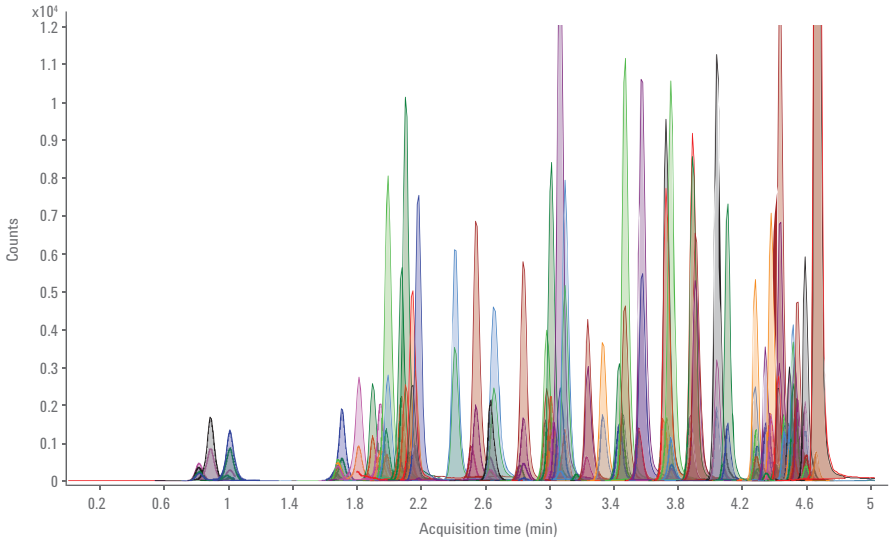


Figure 2. Representative overlaid chromatograms demonstrating the rapid and sensitive LC/MS analysis of over 65 drugs with respective internal standards.

Key Benefits

- Comprehensive, high-throughput analysis of over 65 drugs
- Sensitive, accurate screening and quantitation within six minutes
- Simple, straightforward sample pre-treatment
- Rapid results interpretation with advanced software tools
- A highly-selective, cost-effective, and time-saving method

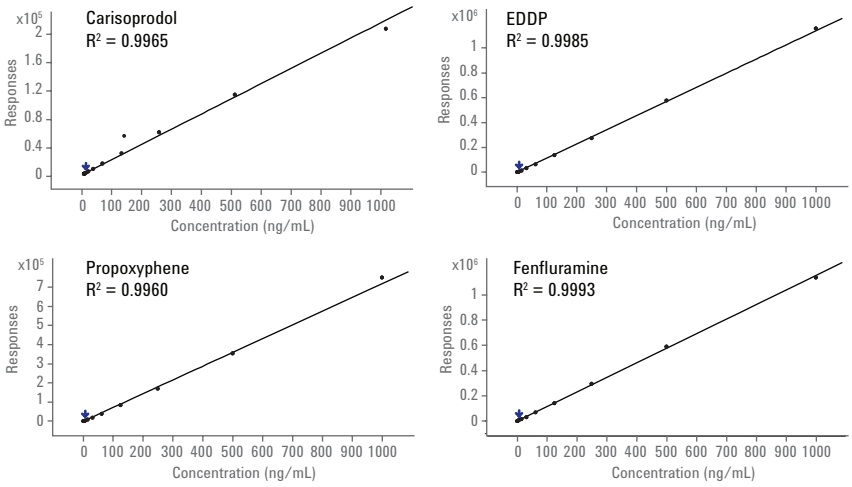


Figure 3. Typical drug examples showing excellent calibration linearity and sensitivity for accurate screening and quantitation.

www.agilent.com/lifesciences/clinresMS

For Forensic Use.

This information is subject to change without notice.

Published in the USA, January 13, 2012
5990-9682EN

The Measure of Confidence

Agilent Technologies