

# MOLECULAR IDENTIFICATION FOR GAS CHROMATOGRAPHY

Wavelength Range:	4000-500cm <sup>-1</sup> Standard
Source Type:	Pseudo Black Body
Wavenumber Resolution:	4, 8, 16 cm <sup>-1</sup>
Laser:	HeNe
Laser Wavelength:	632.8nm
Detector:	High Sensitivity MCT
Flow Cell Interface:	100µl Gold lined light pipe 120mm L x 1mm id
Flow Cell Heaters:	300oC Maximum
Flow Cell Windows:	ZnSe or KBr
Size:	H 19.3" x W 8.3" x D 26"
Scan Rates:	3 scans/second at 4cm <sup>-1</sup> 6 scans/second at 8cm <sup>-1</sup> 8 scans/second at 16cm <sup>-1</sup>
Liquid Nitrogen:	1-2L per day
Control Software:	ASIC
Analysis Software:	Essential FTIR
Operating System:	Windows XP or greater
Communication:	USB 2.0

For more information and  
application notes visit  
[www.go-jsb.com](http://www.go-jsb.com)



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S H A R P E R P E A K S , B E T T E R S E P A R A T I O N S



## IRD 3 VAPOR PHASE GC-FTIR

### Forensic Application Notebook

S H A R P E R P E A K S , B E T T E R S E P A R A T I O N S



## MOLECULAR IDENTIFICATION FOR GAS CHROMATOGRAPHY

The IRD 3 is designed from the chromatographer's point-of-view and is the only analytical infrared instrument that combines the separating power of the Gas Chromatograph with the molecular identification of FTIR.

- Vapor phase FTIR for use with GC
- Low maintenance- Contains NO moving parts
- Smallest footprint available- saves bench space
- IRD 3 software interfaces with GC software
- Single sequence table reduces errors



The IRD 3 is the perfect tool for the chromatographer looking to obtain more information about unknown samples that would not be possible with a MS detector. Using a heated light pipe flow cell, the sample is kept in the vapor phase while interacting within the IR band width. This allows the molecules to freely rotate in a low energy environment. Keeping the molecular geometry intact during analysis provides a unique and highly reproducible spectra.

## PRODUCT OVERVIEW

The IRD 3 was designed to give chromatographers a tool to obtain IR molecular data from separated chromatographic peaks. The result is a compact, easy to use system that operates like other GC based detectors. Samples can be prepped just like they would be for GC-MS analysis and injected using the same GC method parameters. After column separation, the analytes are then introduced to the IRD through the heated capillary flow cell. While in the flow cell the separated peaks interact with the IR beam. A second heated transferline allows the sample to stay in a vapor state and then passed back into the GC oven. Once back in the oven the sample can then be sent to a secondary detector such as MS for further analysis and confirmation.

### History and enhanced performance

The IRD 3 is the 3rd generation of the IRD and incorporates the same proven optical path with new modern electronics.

### Maximum productivity

The IRD 3 is compatible with all styles of autosamplers and with the optional Magnum transferline can seamlessly be integrated with an MSD.

### Software integration

With improved IRD to GC communications, making single runs or sequence runs is easier then ever before using the state of the art IRD control software.

### Easy maintenance

With no moving parts and only four consumables, the IRD 3 is the most reliable GC-FTIR instrument available today.

### Multiple platform solution

The IRD 3 can be used with GC instruments from both Agilent Technologies and Shimadzu Scientific.

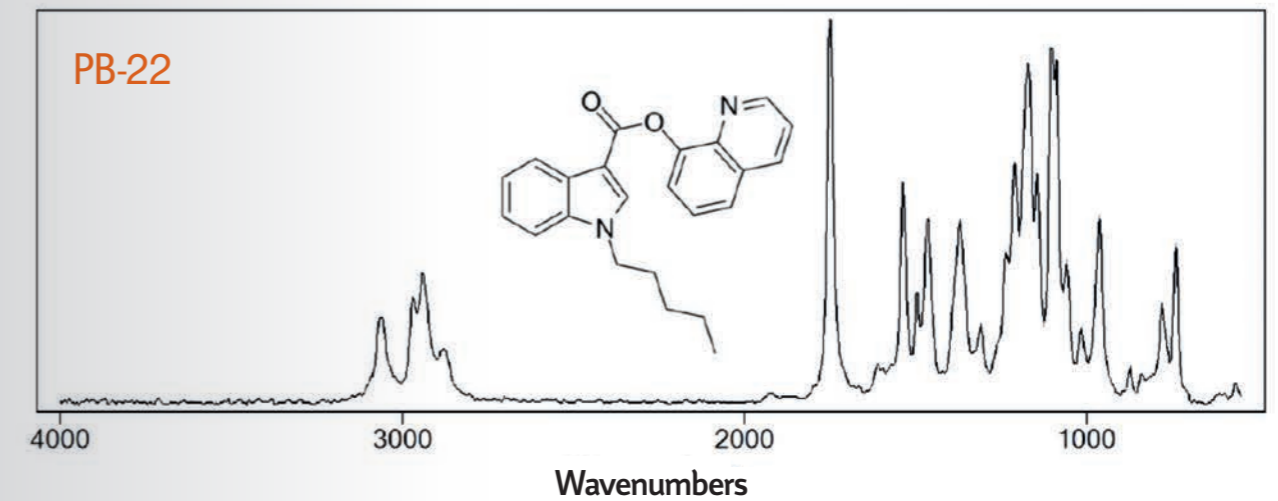
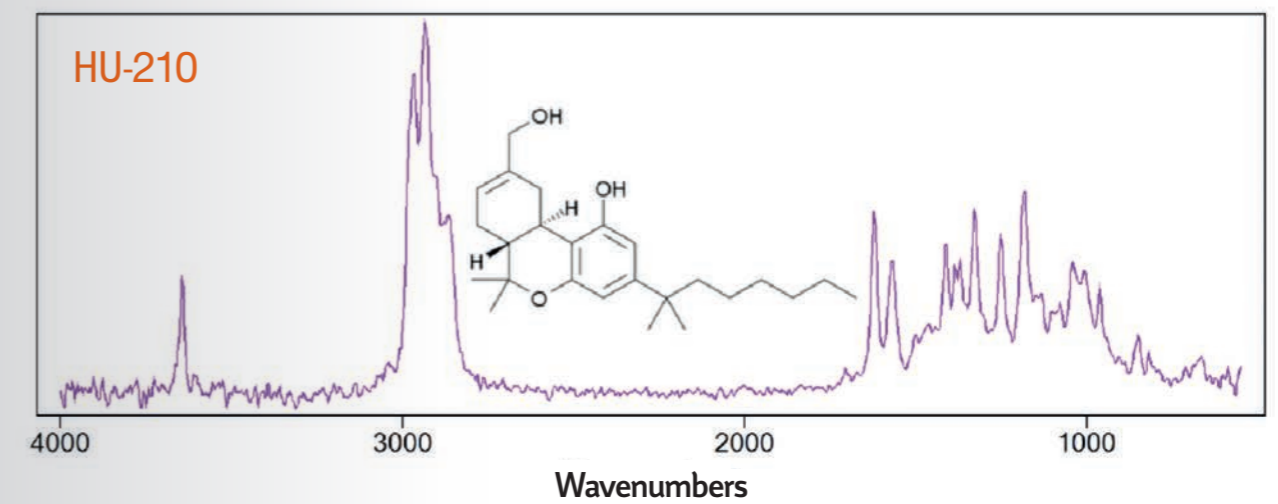
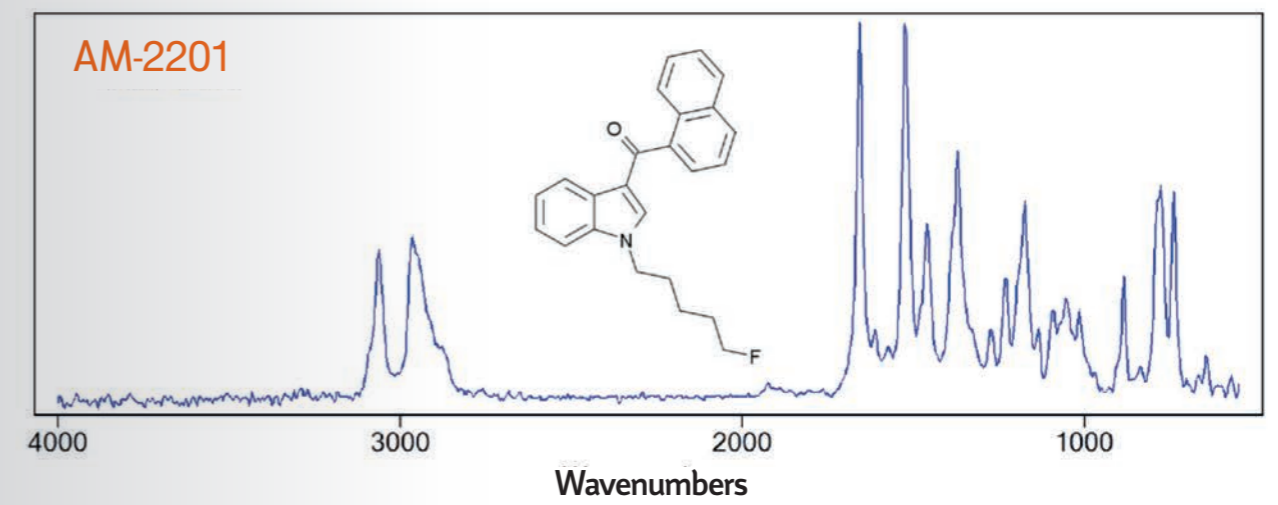
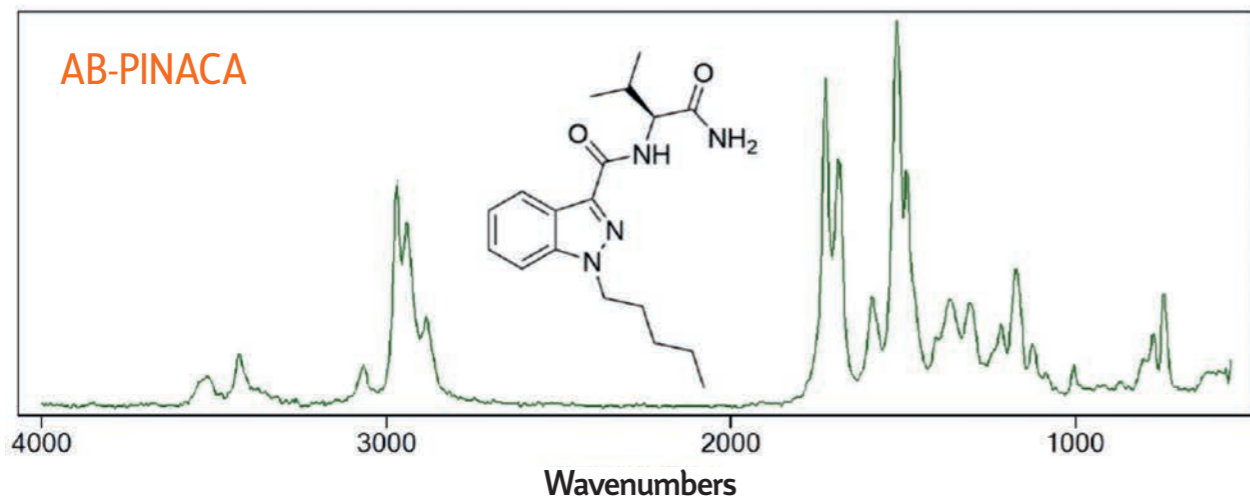
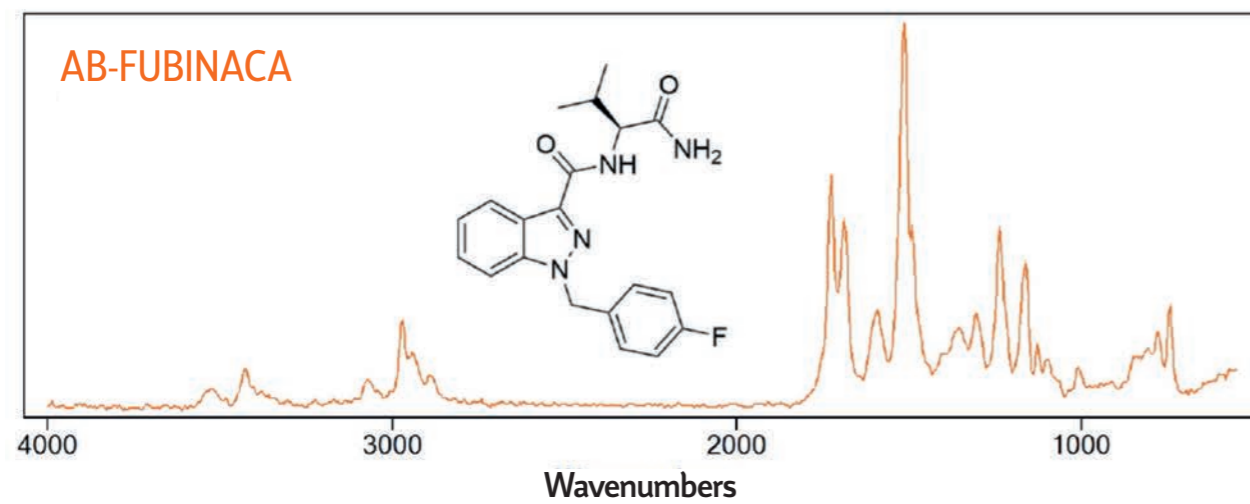
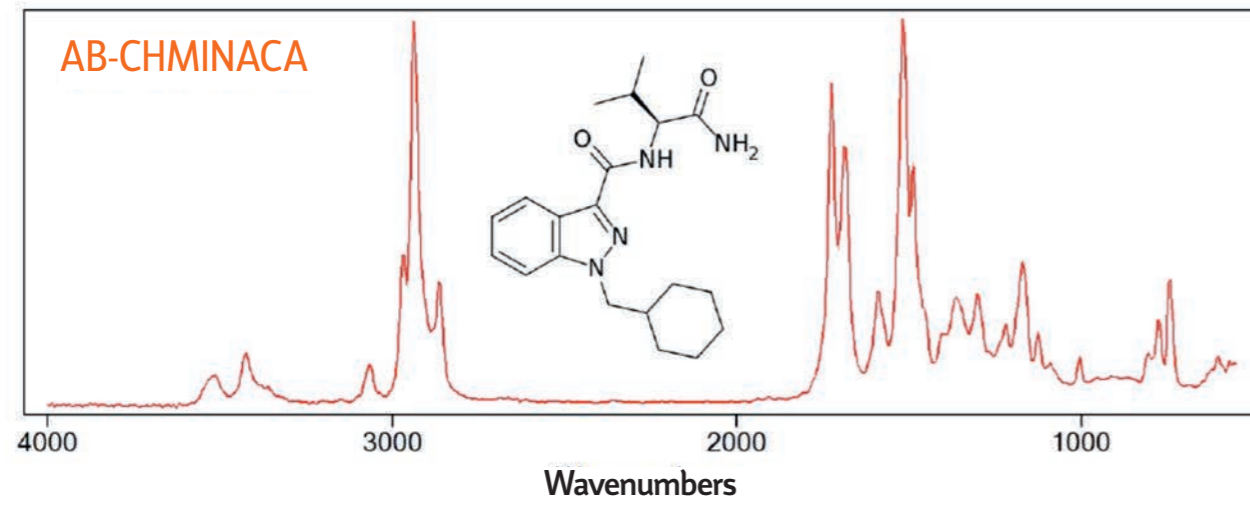


## Document Overview

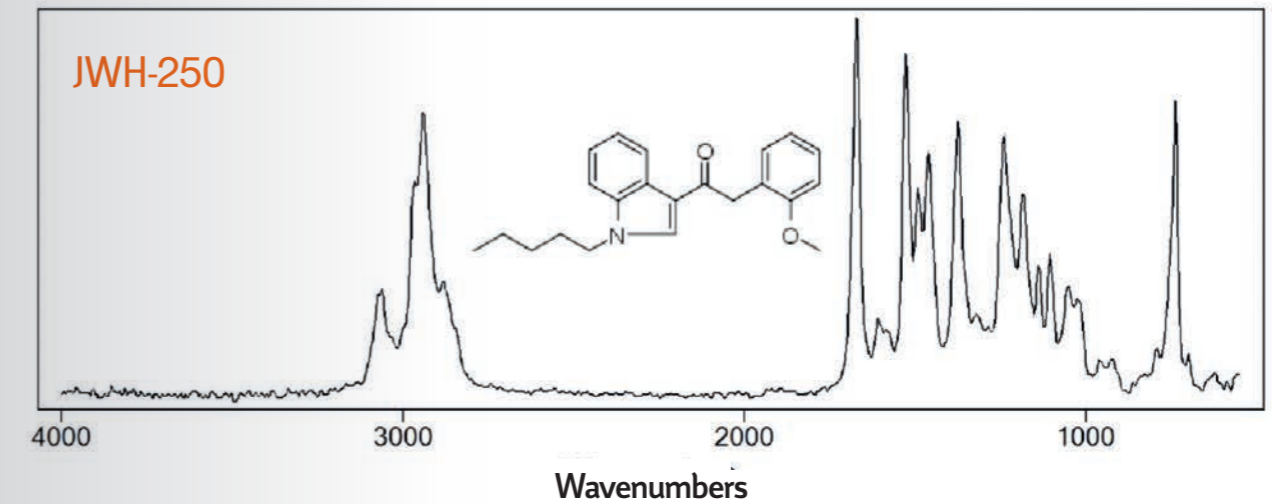
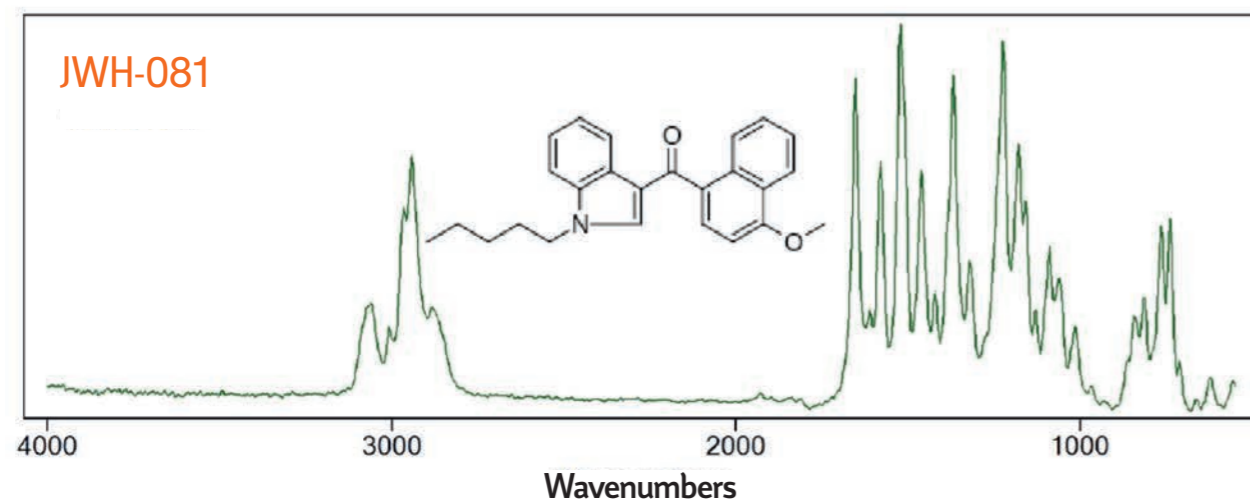
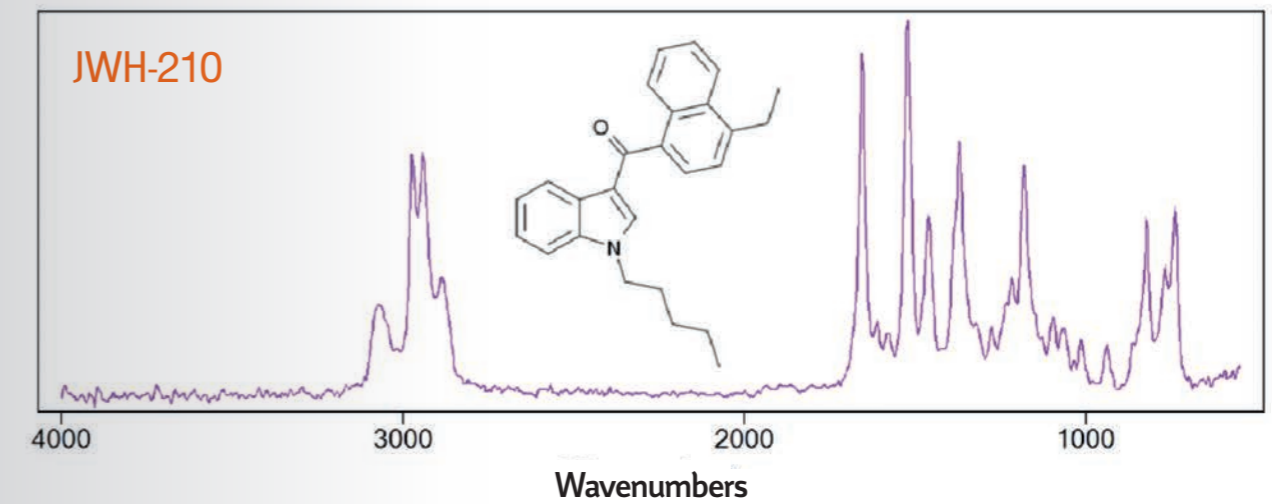
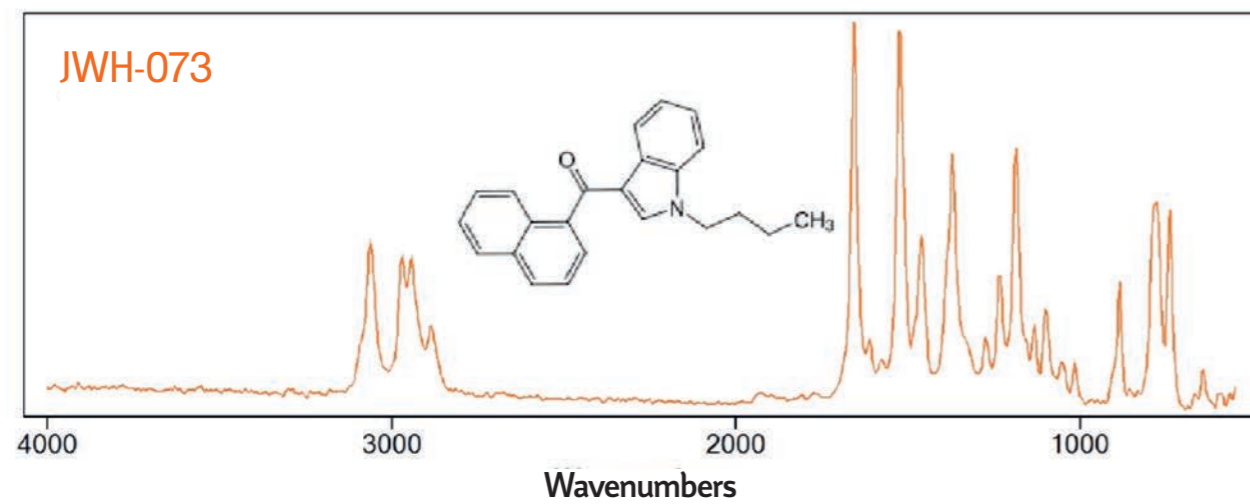
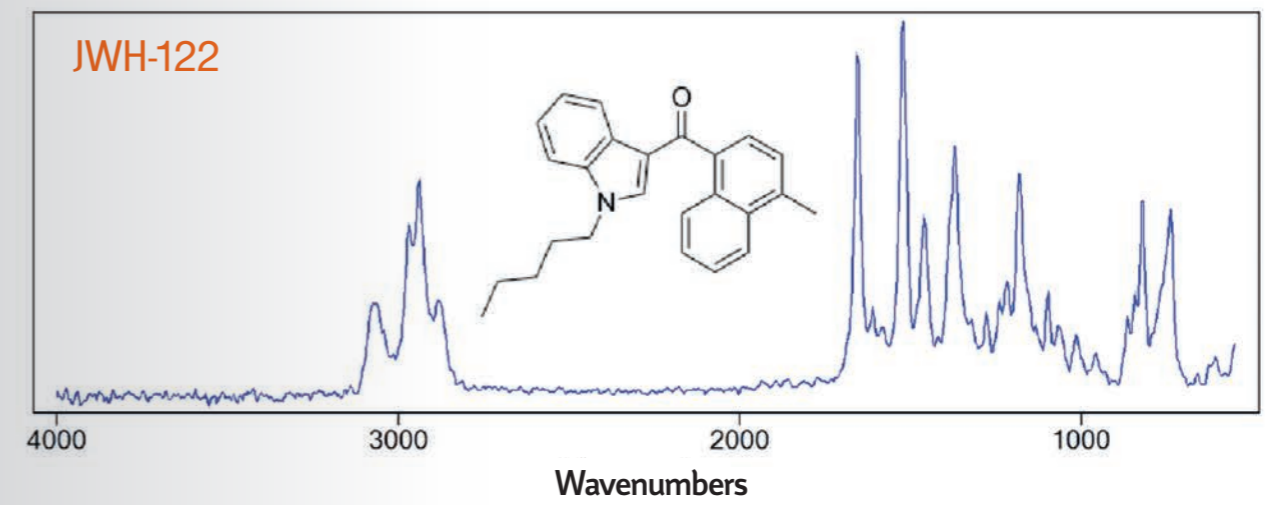
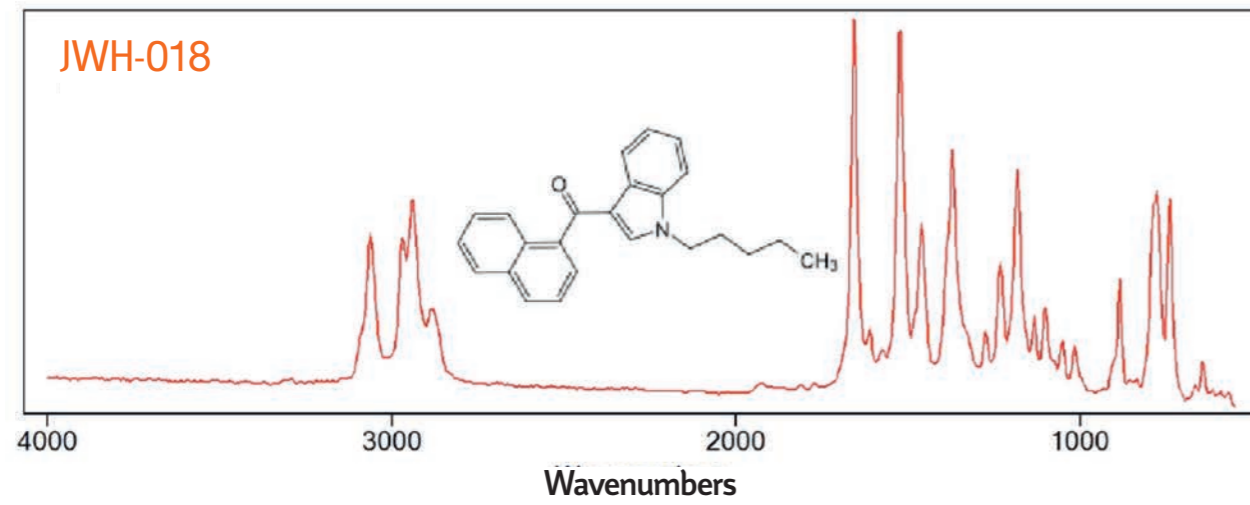
The purpose of this application notebook is to show the power of the IRD 3 for a wide range of forensic samples. One of the biggest challenges facing forensic chemists is isomers. Whether it's substituted phenethylamines or synthetic cathinones, the IRD excels at determining the difference between similar compounds. Easy to operate and maintain the IRD is an essential tool for the modern forensic lab. The spectra in this document are a non-exhaustive list of compounds the IRD can help to identify with certainty.



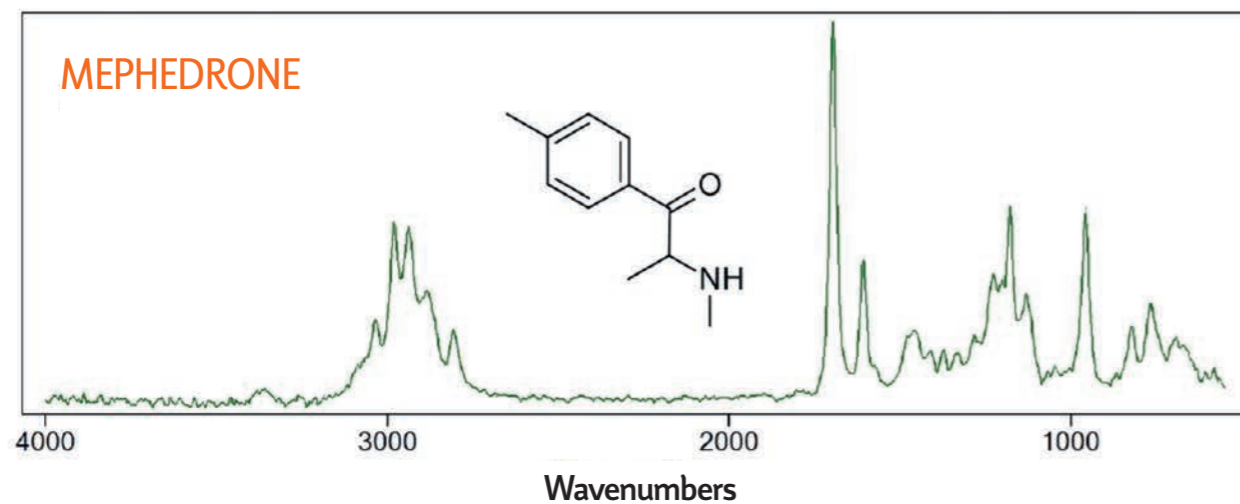
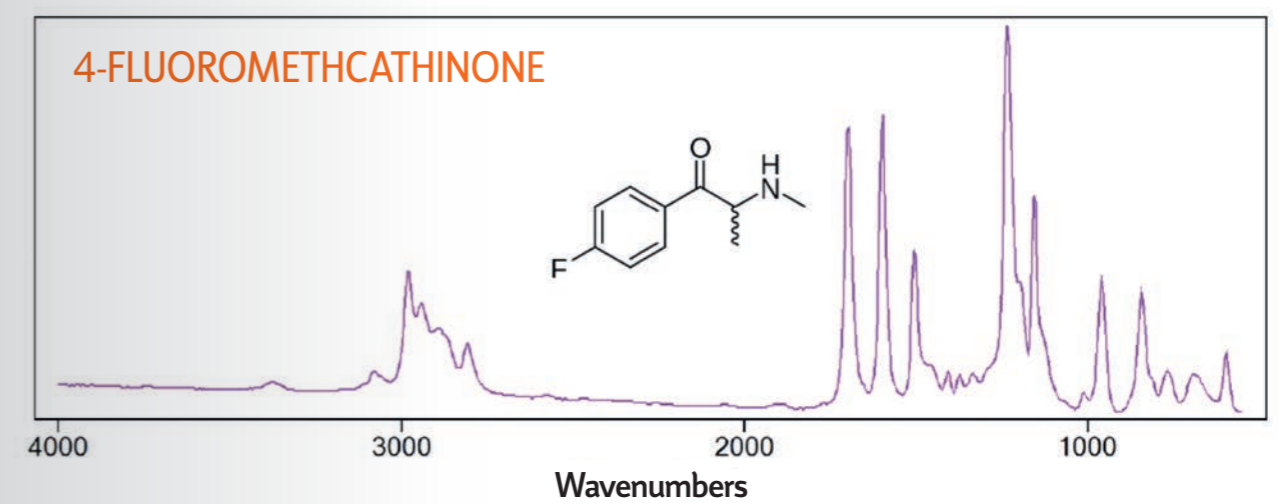
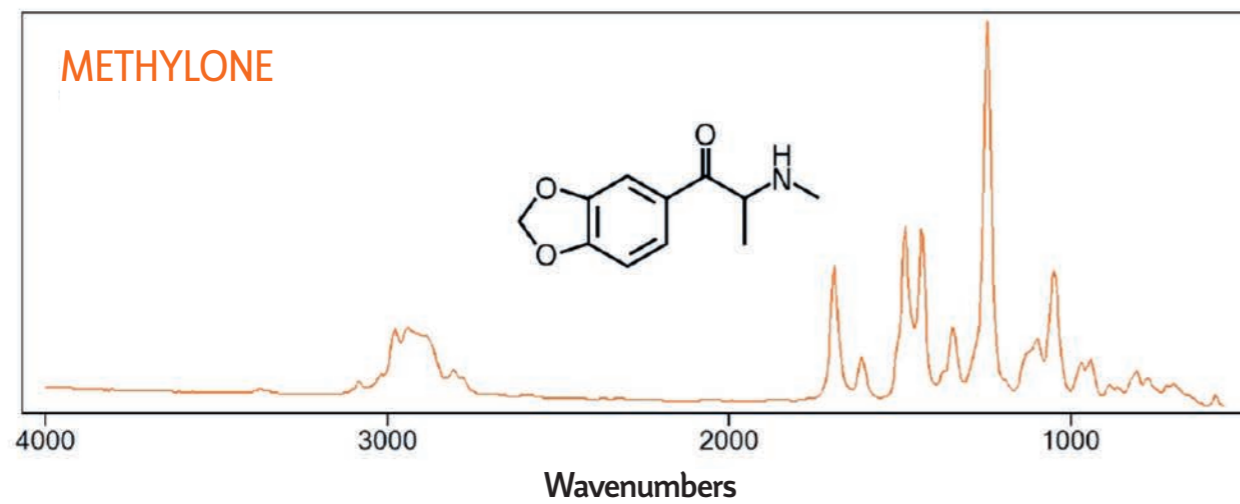
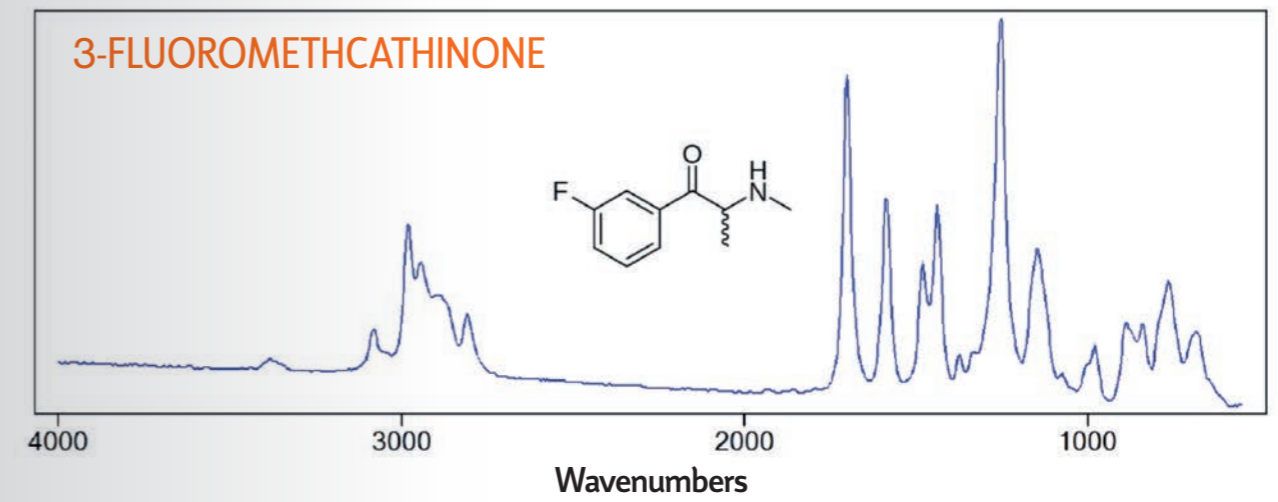
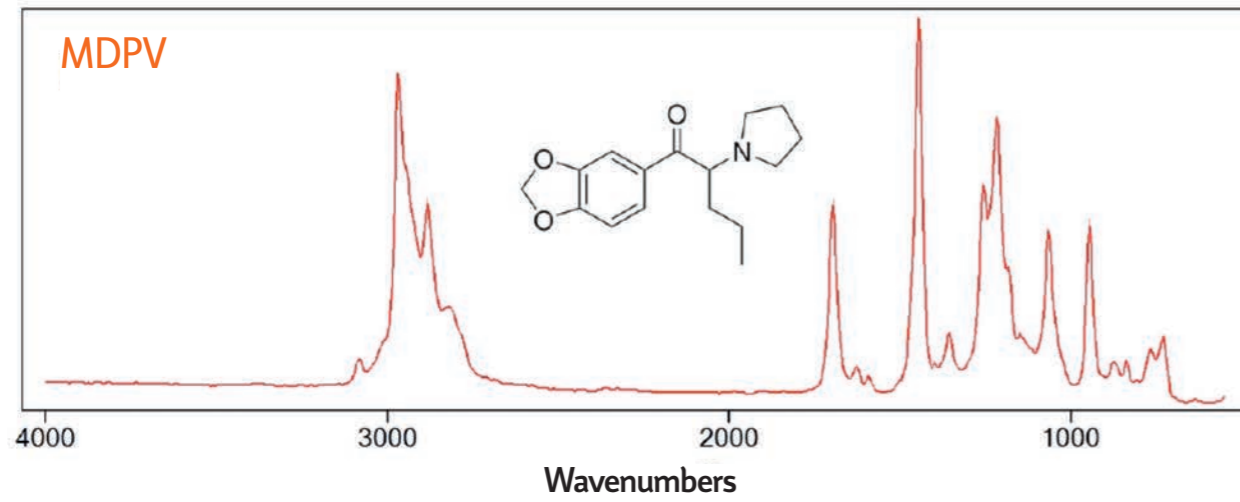
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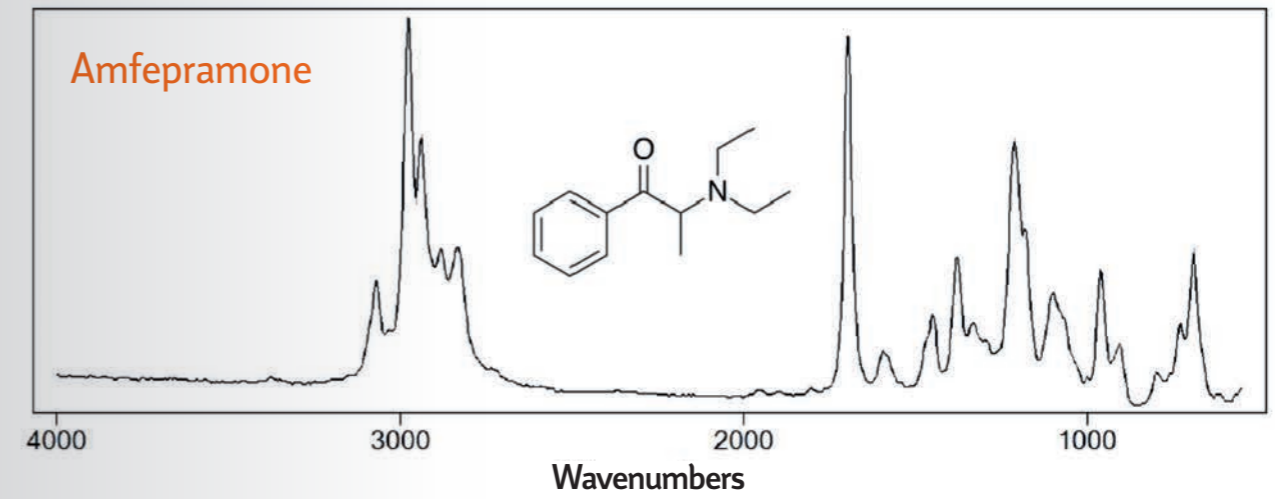
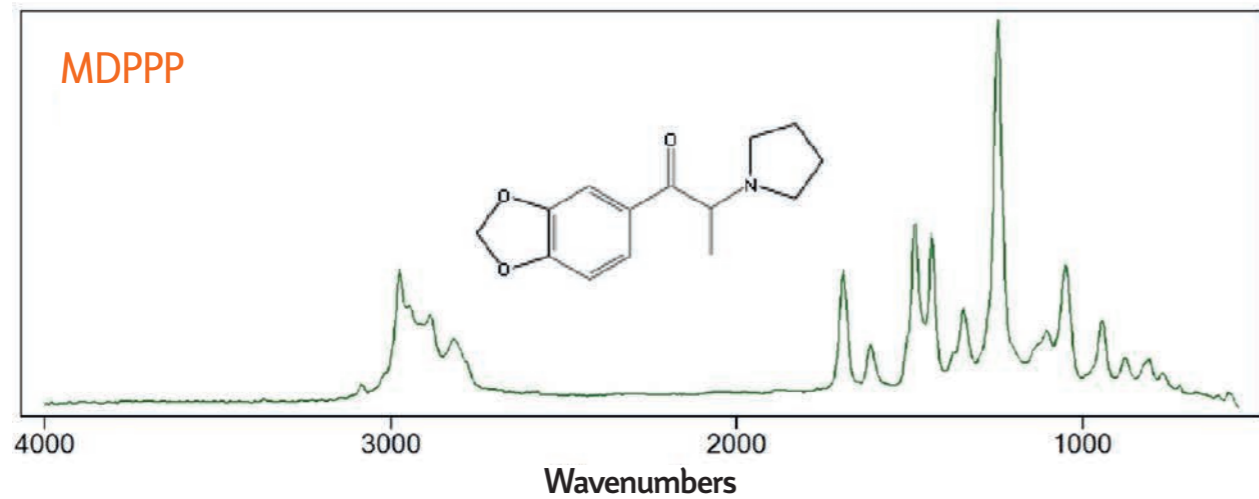
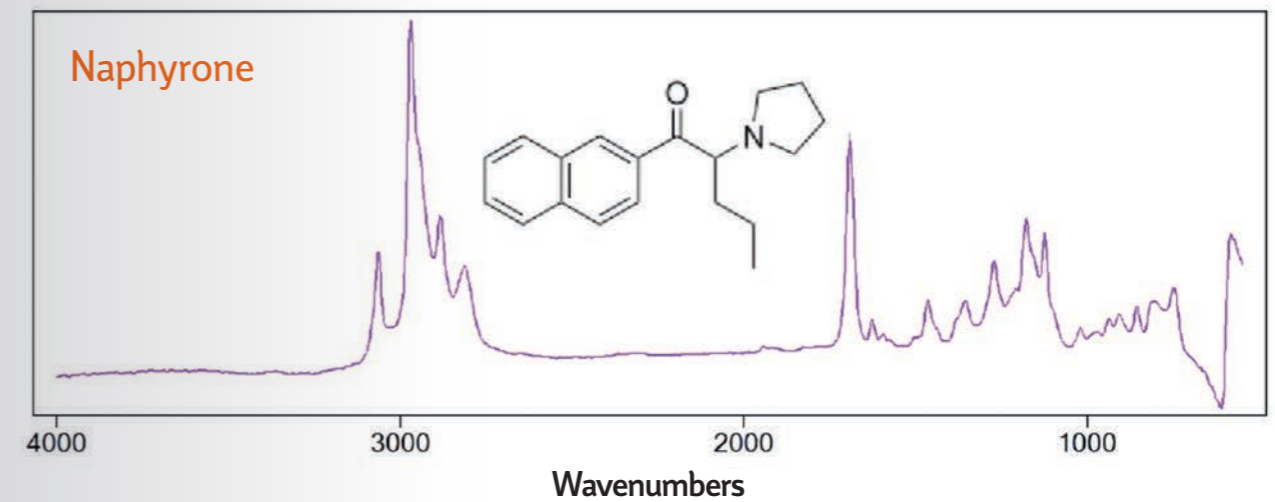
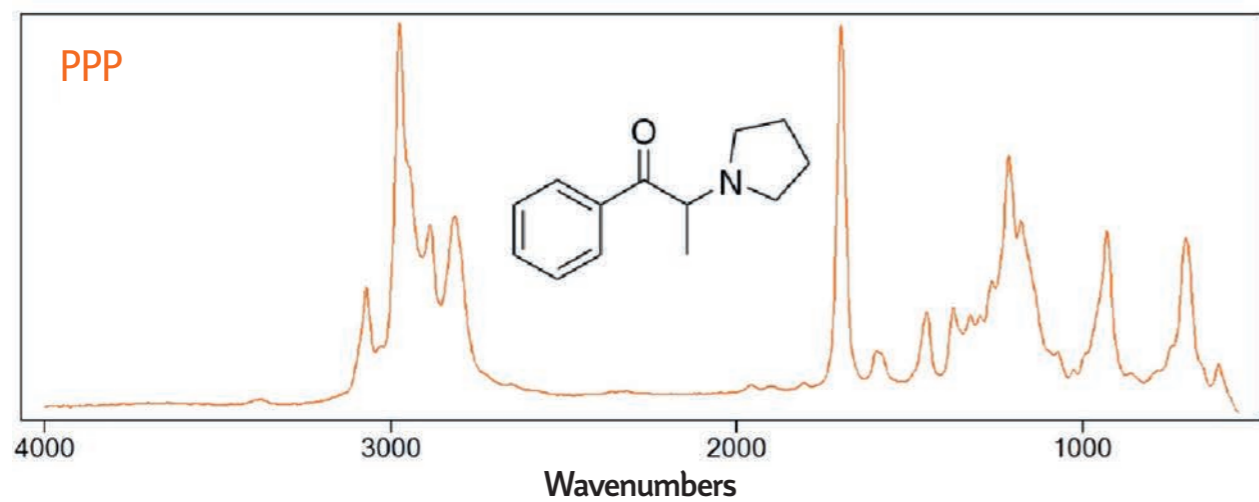
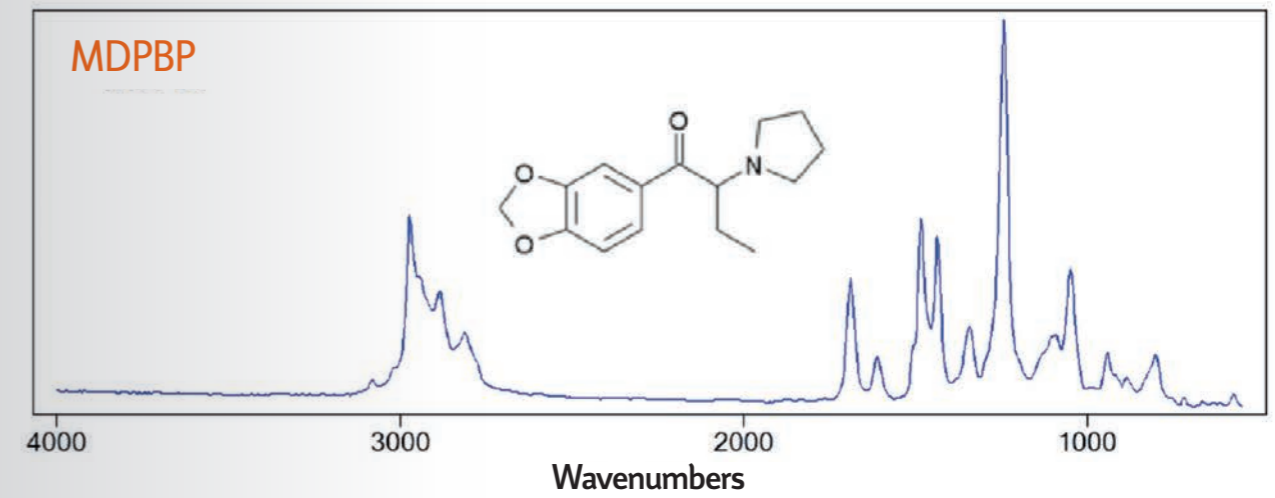
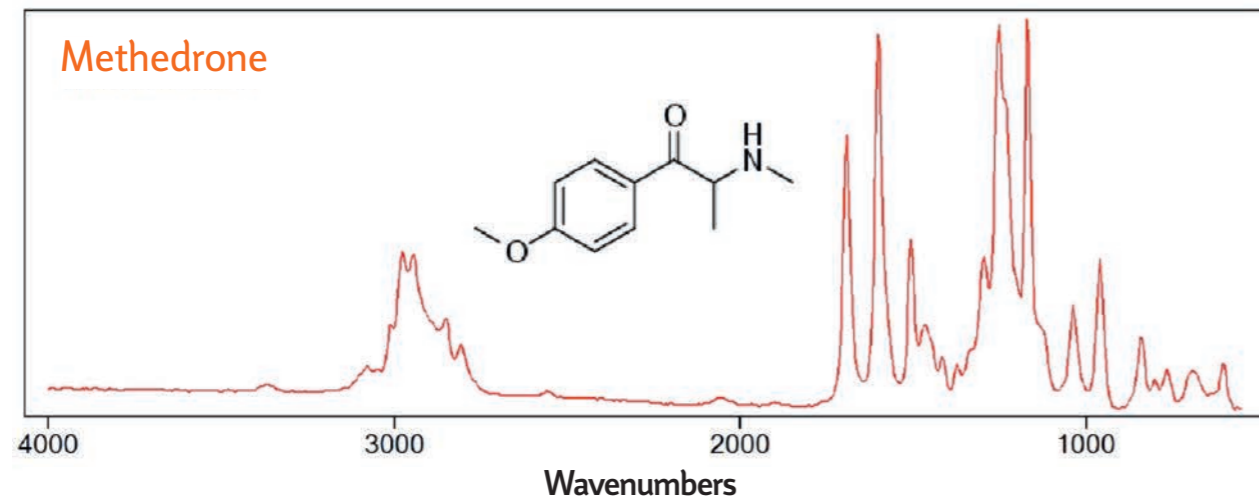
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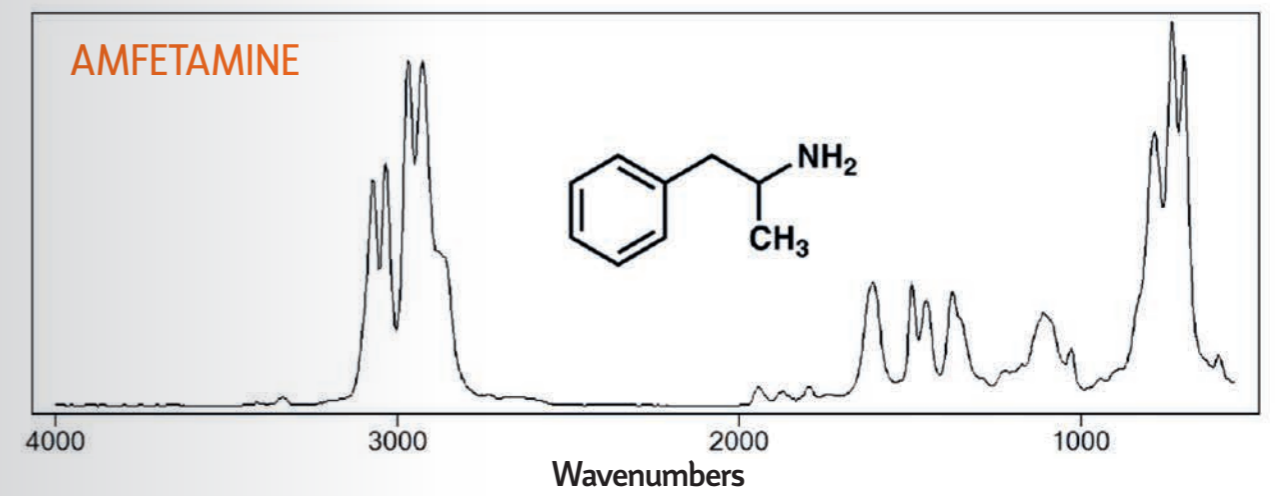
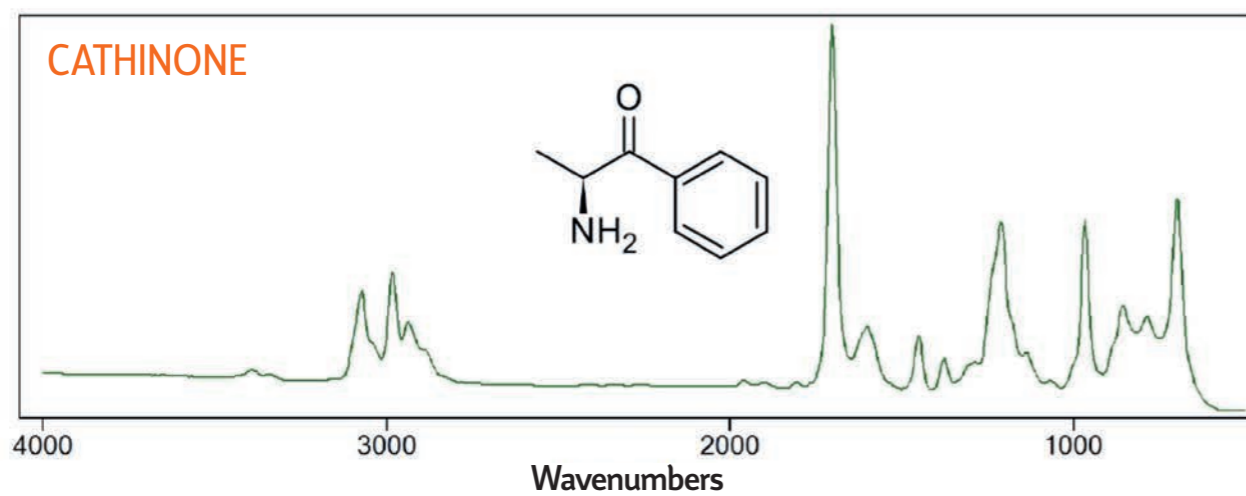
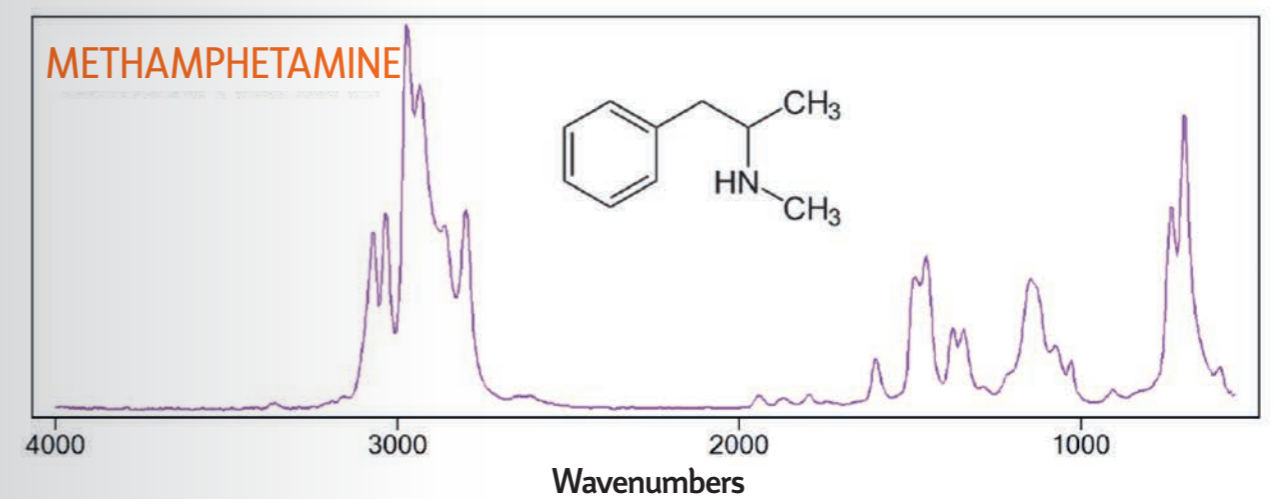
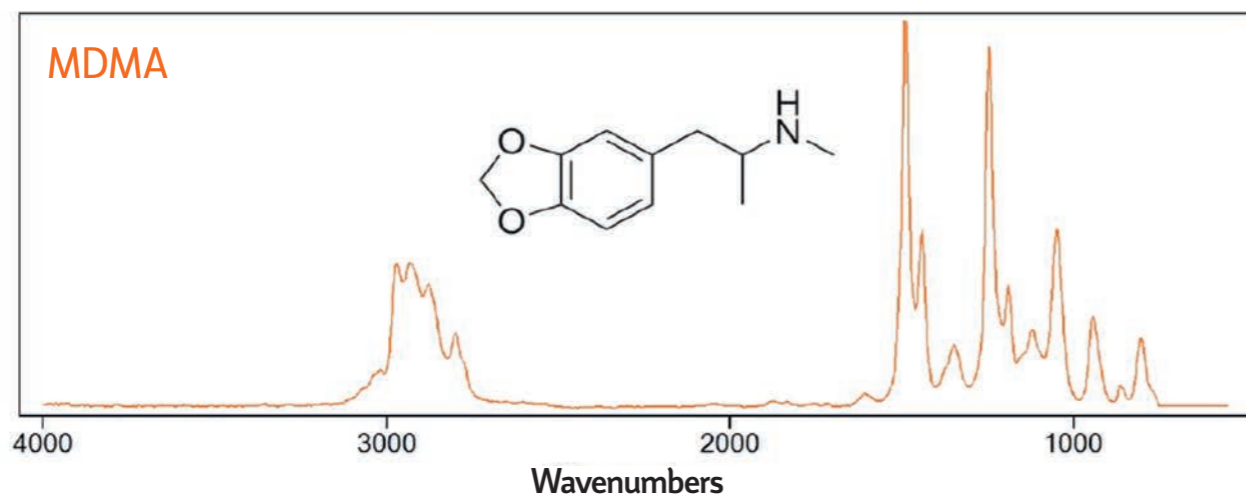
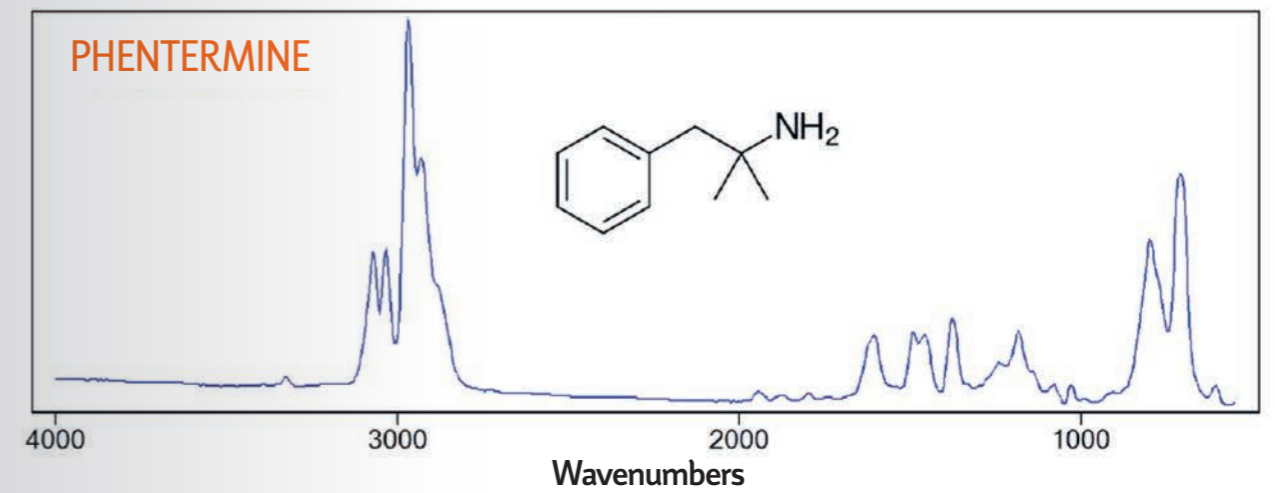
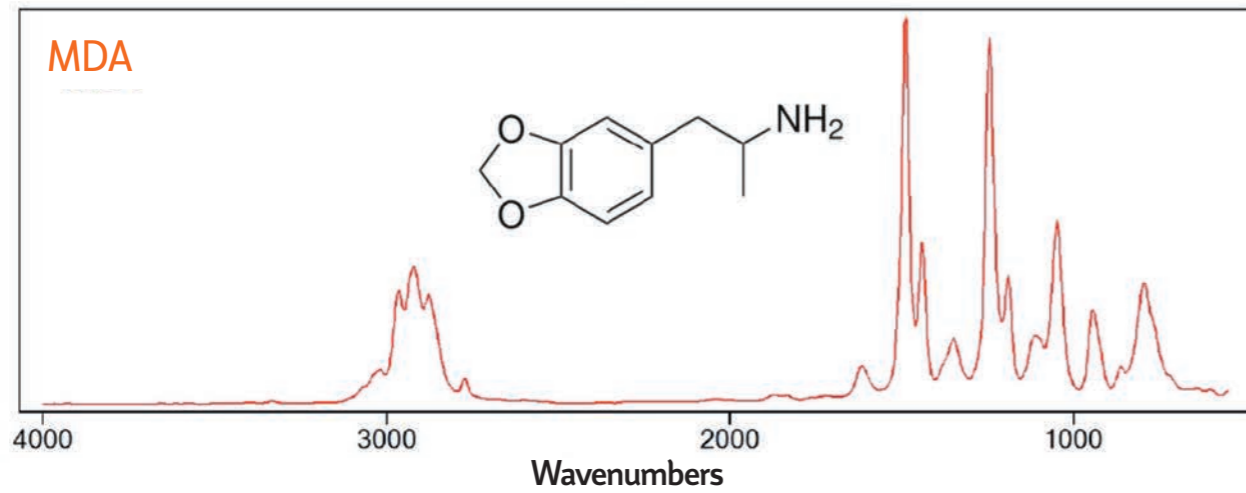
# VAPOR PHASE SPECTRA OF SYNTHETIC CATHINONES



# VAPOR PHASE SPECTRA OF SYNTHETIC CATHINONES



# VAPOR PHASE SPECTRA OF AMPHETAMINES



# VAPOR PHASE SPECTRA OF AMPHETAMINES

