

The DiscovIR-GC is a powerful new tool for materials analysis. When connected to the outlet of a GC column, the DiscovIR deposits GC eluents as a continuous track on an infrared transparent substrate. The built-in interferometer simultaneously captures a set of time-ordered infrared spectra from the deposited track. The result is a map of molecular structure of all sample components.

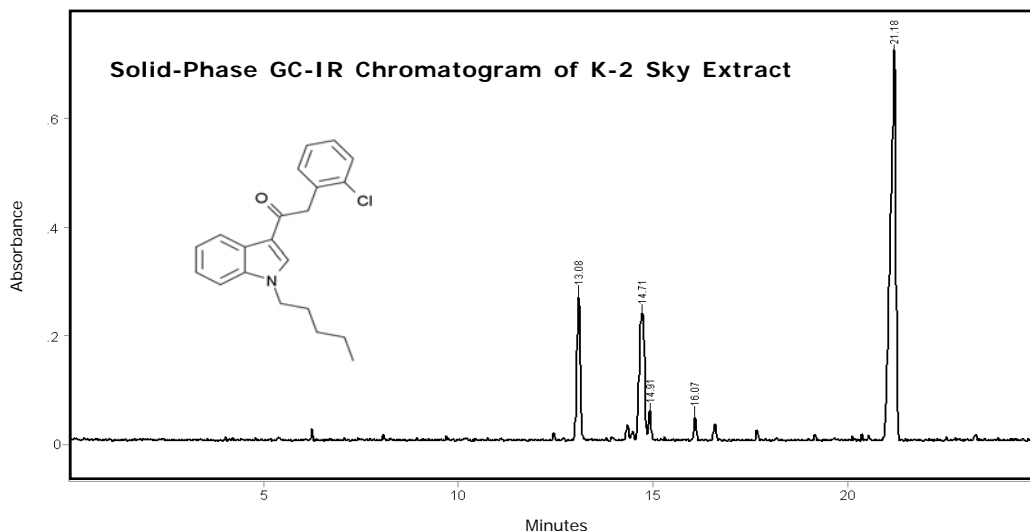
K-2 Sky Analysis

The National Forensic Laboratory Information System's estimate for reports of synthetic cannabinoids increased from 15 in 2009 to almost 3,000 reports in 2010. The variety of synthetic cannabinoids reported also increased from two compounds in 2009 to 14 different synthetic cannabinoids in 2010¹. Prior to 2010, synthetic cannabinoids were not controlled by any individual state or at the federal level. In March 2011, five synthetic cannabinoids were temporarily categorized as Schedule I substances under the Controlled Substances Act: JWH-018, JWH-073, JWH-200, CP-47,497 and cannabicyclohexanol.

The K-2 Sky sample analyzed in this application note contains a new synthetic cannabinoid, JWH-203, not reported in 2010 but for sale in 2012. A sample of K-2 Sky was obtained and analyzed to identify the

cannabinoid(s) present. Leaf material (0.5g) was mixed with 5 ml of chloroform and allowed to stand overnight. The supernatant (1ml) was decanted into an auto-sampler vial and analyzed by the DiscovIR-GC[®]. The main component at 21.17 minutes is identified as JWH-203 (Figure 1) and the infrared spectra overlays the spectra of a standard very well (Figure 2). The spectra of the minor components are consistent with fats contained in food oils.

Synthetic cannabinoids can be viscous oils and difficult to handle at room temperature. The ever increasing variety of closely related synthetic analogs and isomers available makes the identification challenging. Solid phase GC-IR is an excellent SWGDRUG Category A technique well suited for unambiguous identification of synthetic cannabinoids.



¹Special Report: Synthetic Cannabinoids and Synthetic Cathinones Reported in NFLIS, 2009, 2010; US Department of Justice Drug Enforcement Administration Office of Diversion Control

Figure 1 - Solid-Phase GC-IR Spectra of the Main Component in K-2 Sky Extract

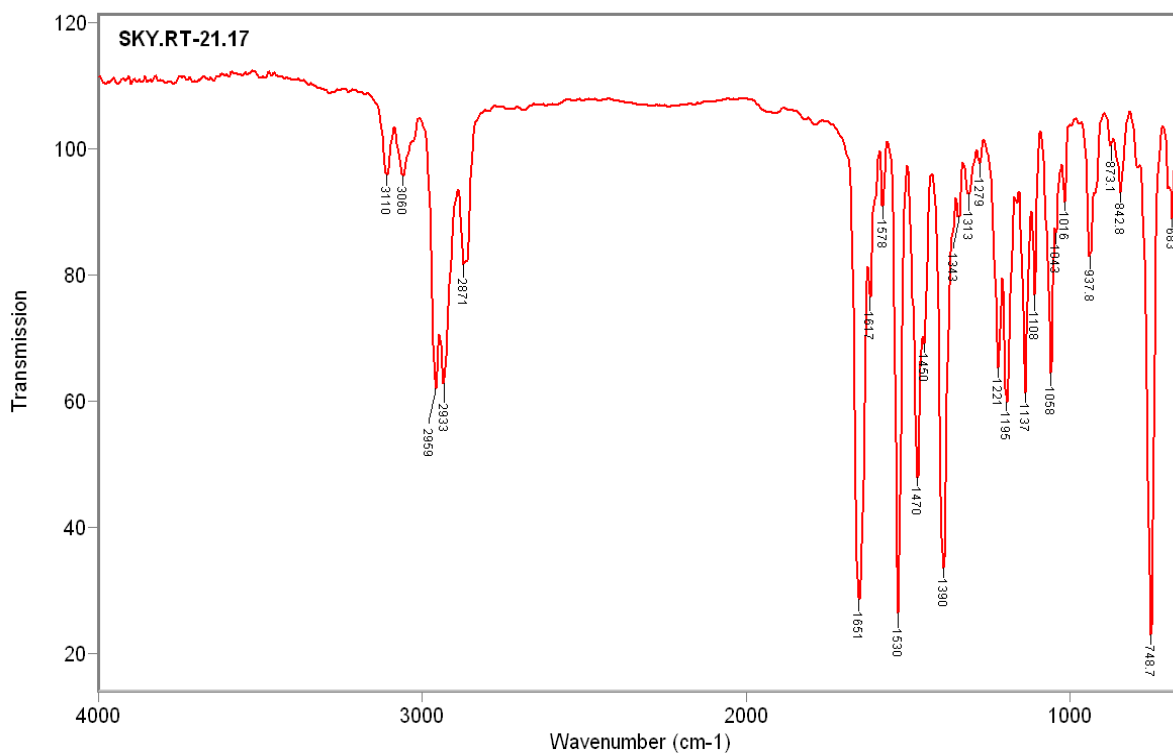


Figure 2 - Overlay of Sky Cannabinoid (red) with JWH-203 Standard (black)

