

DELTA 8-THC IMPACT ON DRUG TESTING

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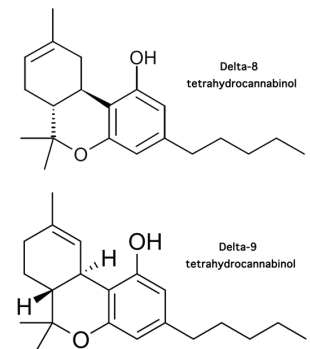
The cornerstone for marijuana testing has been the detection of delta 9-THC ($\Delta 9$ -THC) in oral fluids or its metabolite, delta 9-THCA ($\Delta 9$ -THCA), in urine. Under federal and non-regulated drug policies, $\Delta 9$ -THCA metabolite is the only reportable metabolite. Specifically identifying $\Delta 9$ -THCA as the prohibited cannabinoid has created an opportunity for marijuana chemists to create alternative cannabinoids with similar effects to avoid reporting a positive result in a workplace drug testing situation.

What is delta 8-THC?

Delta 8-THC ($\Delta 8$ -THC) is one of the naturally occurring cannabinoids found in very low levels in cannabis plants. It was never considered a cannabinoid of concern, although the psychological effects are very similar to $\Delta 9$ -THC. Both $\Delta 8$ -THC and $\Delta 9$ -THC interact with a receptor in the brain, which creates the psychological high associated with marijuana use. Another naturally occurring cannabinoid, cannabidiol (CBD), is widely used by the public for its reported benefits for the treatment for chronic pain, anxiety, neurological diseases, GI disorders and many more medical conditions. CBD interacts with a different receptor which primarily affects systems other than the brain.

How did $\Delta 8$ -THC come into being?

Marijuana confirmation testing began to change around 2018 when marijuana chemists began creating $\Delta 8$ -THC. CBD or $\Delta 9$ -THC can be converted into $\Delta 8$ -THC by adjusting the substance's chemical structure (see figures below). These new $\Delta 8$ -THC products are available as edibles and included in vape pens sold through CBD shops, gas stations and convenience stores.



Is $\Delta 8$ -THC legal?

The legality of $\Delta 8$ -THC is under review at the federal level. Sellers of $\Delta 8$ -THC products are claiming that it comes from hemp, which by definition has < 0.3% THC. The federal counter argument to this is that the Hemp Farm Bill does not allow for the conversion of CBD to other cannabinoid products. Both state and federal courts are reviewing the issue.

$\Delta 8$ -THC and the workplace

The introduction of $\Delta 8$ -THC has had a major impact on laboratory testing. Individuals ingesting $\Delta 8$ -THC products test positive using traditional immunoassay screening tests. In confirmation testing using mass spectrometry, $\Delta 8$ -THC and $\Delta 9$ -THC are similar and must be separated from each other to allow the laboratory to make the forensic identification that is required in drug testing. This requires more instrument time and additional tools to make this happen.

In work performed at CRL, individuals using large amounts of $\Delta 8$ -THC as a replacement for traditional marijuana are identified in the laboratory. The problem for these individuals is that $\Delta 8$ -THC products are not pure and various amounts of $\Delta 9$ -THC remain from the chemical conversion, meaning they test positive for both substances.

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