

# OSAC RESEARCH NEEDS ASSESSMENT FORM



**Title of research need:**

Cannabinoids

**Keywords:**

Cannabis; Marijuana; Cannabinoids; Hemp

**R&D Need Rank:**

Low, Medium, High

High

**SAC Approved  
Date:**

6/4/2025

**Submitting subcommittee(s):**

Forensic Toxicology

## Research Need Summary:

The purpose of these research needs is to build a stronger scientific foundation for forensic science standards. The information provided herein will help to evaluate and strengthen existing standards, and/or fill any standards related gaps. In the space below, please provide a brief narrative of the need to be addressed. This should include:

- The identity of any specific standards that would be affected/improved/evaluated
- A discussion on gaps that exist within the standards or standards related gaps that need to be filled
- How this work would fill those gaps
- An overview of any current or past research efforts that may be relevant to this effort
- A discussion regarding how this research might improve current laboratory capabilities and/or forensic services within the criminal justice system
- Any relevant references

There are many issues that raise concern since states legalized/decriminalized cannabis and since the 2018 Farm Bill, which defines the standards for industrial hemp production. Cannabis has changed over the years with increasing concentrations of  $\Delta 9$ -THC, as well as  $\Delta 8$ -THC. There is growing anecdotal evidence that  $\Delta 8$ -THC is deliberately sought to increase the likelihood of beating drug tests and to achieve a different type of "high." Further, there is evidence that  $\Delta 8$ -THC may be produced (converted) as a consequence of hemp processing and as edibles age. Additionally, there is limited data to determine whether products that fall within the legal definition of hemp would also produce positive drug tests or whether repeated/long-term exposure to hemp-derived CBD products would increase one's chances of testing positive for THC. Further, there is limited data to suggest that products currently on the market comply with the Farm Bill standards.

Research is needed in the development of analytical methods for the identification and quantification of emerging cannabinoids to enhance the scope of capability and knowledge of the forensic toxicology community. Evaluation of existing and novel sample preparation techniques for the recovery of these analytes is also warranted while chromatographic separation from  $\Delta 9$ -THC and its metabolites remains problematic for cannabinoid isomers. Research should also include epidemiological studies, metabolite identification, matrix studies, and pharmacodynamics/pharmacokinetics studies. Reference materials are needed for emerging cannabinoids as well as their metabolites.

*This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.*