



Utah Department of Agriculture and Food

Cannabis and Hemp
Division

Synthetic and Derivative
Cannabinoid Q&A for the
Cannabis Research Review Board

Q. Can you explain plant processing, assaying, and cannabinoid constituents that are then allowed into medical cannabis products?



Q. What happens between plant testing and extraction processes for commercialization?

Cannabis Flower

1. Trimming
2. Packaging
3. Full Panel Testing
4. Sale

Cannabis Flower

1. Trimming
2. Full Panel Testing
3. Packaging
4. Final Product Testing
5. Sale

Cannabis Biomass

1. Extraction
2. Isolation
3. Full Panel Testing
4. Formulation/Manufacture
5. Final Product Testing
6. Sale



Q. What is the scope and what are the limitations of the current (cannabinoids) testing protocol?

Analyte	Detection Limit (mg/g)
Δ 9-THC	0.01
Δ 8-THC	0.02
THCA	0.02
THCV	0.03
CBD	0.01
CBDA	0.01
CBDV	0.01
CBN	0.03
CBG	0.01
CBC	0.04
CBGA	0.03
CBCA	0.03
9(R+S)- Δ 6a,10a-THC	0.01
(6aR,9R)- Δ 10-THC	0.02
(6aR,9S)- Δ 10-THC	0.02



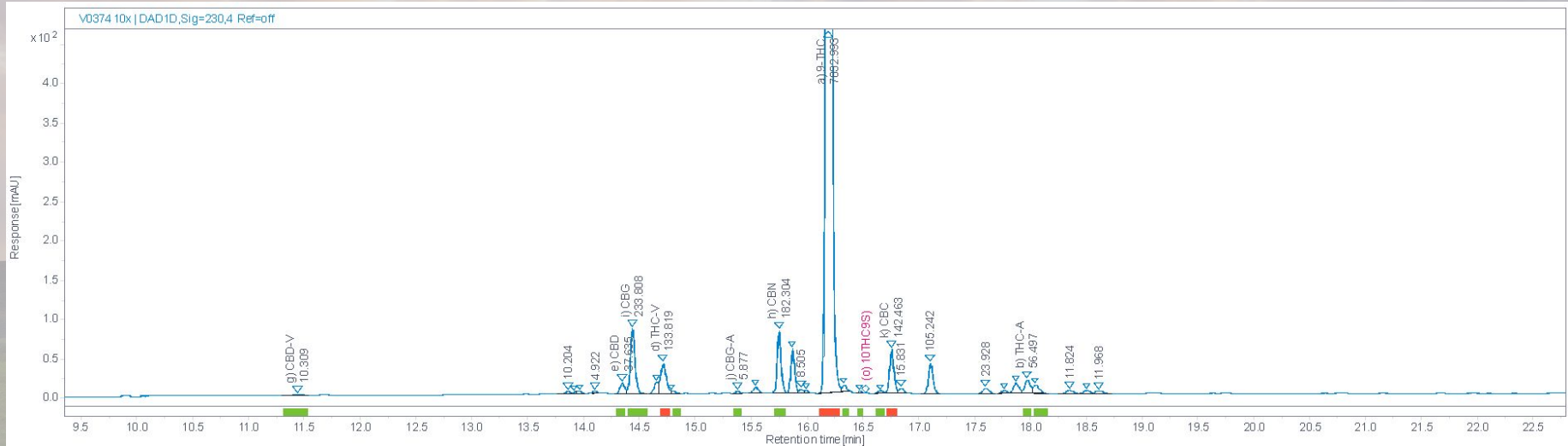
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Q. Which synthetic/derivative cannabinoids are they detecting and how much? (& variation by type)

	Flower			
	$\Delta 8$ -THC	9(R+S)- $\Delta 6a,10a$ -THC	(6aR,9R)- $\Delta 10$ -THC	(6aR,9S)- $\Delta 10$ -THC
Mean	0.01%	0.00%	0.00%	0.00%
Median	0.00%	0.00%	0.00%	0.00%
Min	0.00%	0.00%	0.00%	0.00%
Max	0.21%	0.00%	0.00%	0.00%
	Low Cannabinoid Final Products			
	$\Delta 8$ -THC	9(R+S)- $\Delta 6a,10a$ -THC	(6aR,9R)- $\Delta 10$ -THC	(6aR,9S)- $\Delta 10$ -THC
Mean	0.00%	0.26%	0.06%	0.02%
Median	0.00%	0.00%	0.00%	0.00%
Min	0.00%	0.00%	0.00%	0.00%
Max	0.00%	2.69%	0.69%	0.23%
	Concentrates			
	$\Delta 8$ -THC	9(R+S)- $\Delta 6a,10a$ -THC	(6aR,9R)- $\Delta 10$ -THC	(6aR,9S)- $\Delta 10$ -THC
Mean	0.22%	4.29%	1.15%	0.28%
Median	0.12%	0.00%	0.00%	0.00%
Min	0.00%	0.00%	0.00%	0.00%
Max	2.00%	43.09%	10.71%	3.73%

Q. What is the process for identifying new/unknown compounds; are they strictly limited to targeted analysis?

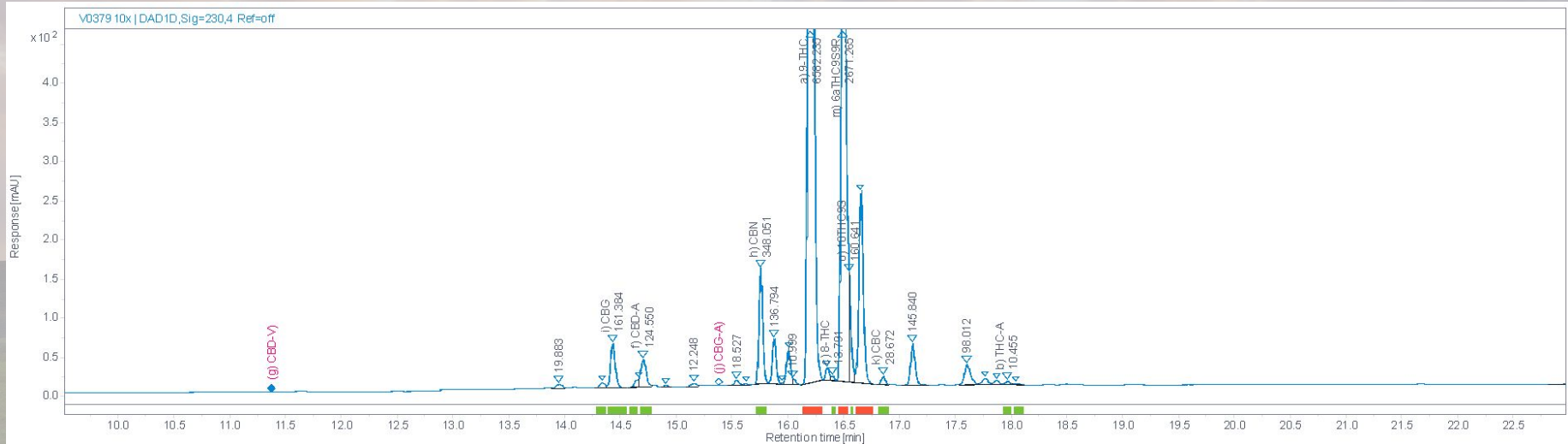
Typical Medical Cannabis Concentrate



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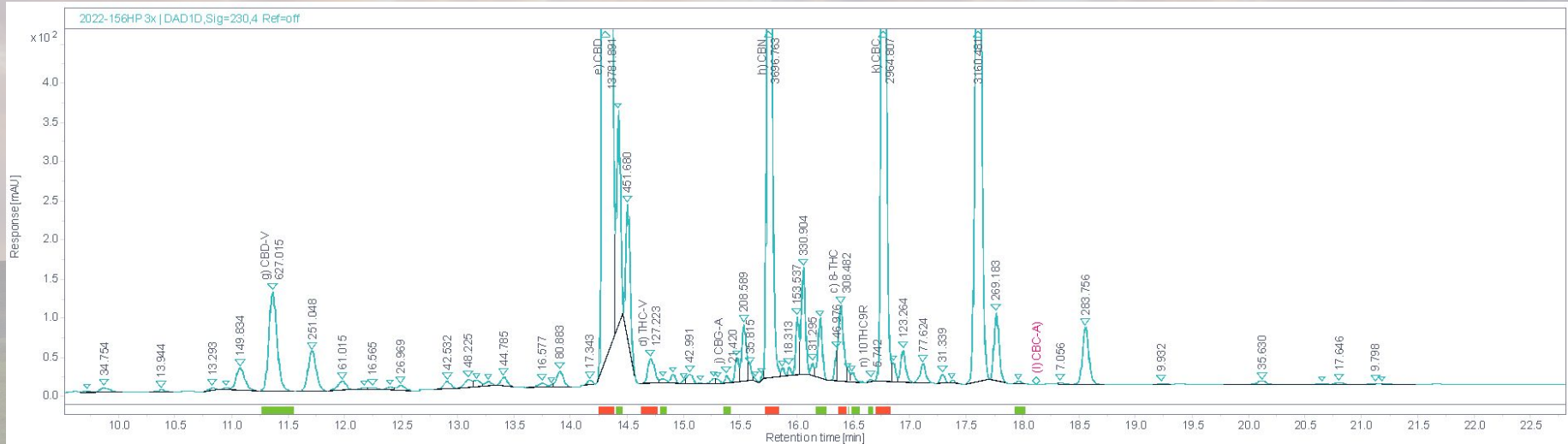
Medical Cannabis Concentrate with Degradation Products



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Q. What is the process for identifying new/unknown compounds; are they strictly limited to targeted analysis?

“Hemp” Vape Cartridge



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Q. Have any patterns been detected in the frequency and or concentrations of the derivative or synthetic cannabinoids?

- Ethanol extraction followed by short path distillation
- Sulfurous odor of distillate
- Levels can be lowered by reducing distillation time and temperature



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Q. Is there a comparison to expected, naturally occurring amounts and the synthetic/unexpected amounts?

	Flower			
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Mean	0.01%	0.00%	0.00%	0.00%
Median	0.00%	0.00%	0.00%	0.00%
Min	0.00%	0.00%	0.00%	0.00%
Max	0.21%	0.00%	0.00%	0.00%
	Concentrates			
	$\Delta 8$ -THC	9(R+S)- $\Delta 6a, 10a$ -THC	(6aR,9R)- $\Delta 10$ -THC	(6aR,9S)- $\Delta 10$ -THC
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Q. Are these processed hemp products or “regular” cannabis?

- Derivative cannabinoids can be found in both “hemp” and medical cannabis products.
- Medical cannabis products can only be legally made from medical cannabis flower grown in Utah & cannabinoid isolates that have received full panel testing.
- Only medical cannabis products can be bought in medical cannabis pharmacies.



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Q. If there is any testing if products sold in pharmacies, is there anything that assures no additives to the more than 1000 various products?

	Flower	Concentrate	Final Product
Cannabinoids	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foreign Matter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Microbial Life	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Water Activity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moisture	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesticides	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Heavy Metals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Residual Solvents	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mycotoxins	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Terpenes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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Q. Can you clarify the difference between banning a substance vs. disallowing synthetic or derivative substances in products obtainable and distributed by Utah medical cannabis pharmacies?



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