

# Cannabis Testing Standards

Cayman Chemical has nearly four decades of experience in producing high-quality analytical standards. Our background in cannabinoid receptor research and synthesis of highly qualified reference standards for forensic analysis has led to our growing catalog of standards for *Cannabis* quality testing. From quantifying cannabinoids to identifying the presence of harmful contaminants, our standards will give you the tools to meet the requirements for *Cannabis* quality testing.



**PHYTOCANNABINOIDS**



**TERPENES**



**RESIDUAL SOLVENTS**



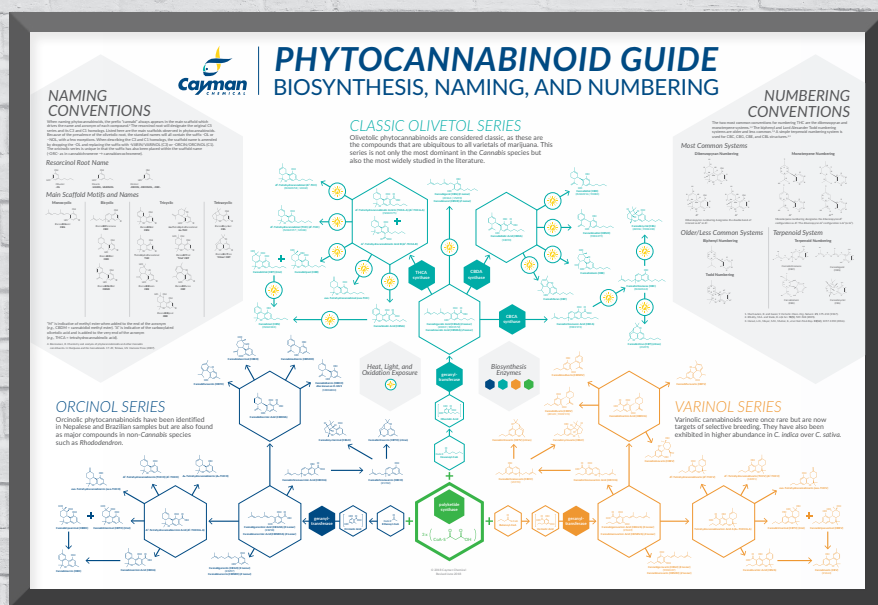
**PESTICIDES & MYCOTOXINS**

ACCELERATE  
WORKFLOWS  
— & —  
REDUCE PROCESSING  
COSTS, VARIABILITY,  
AND TIME!

Request a

# PHYTOCANNABINOID POSTER

for your lab!



A guide to the biosynthesis, naming, and numbering of phytocannabinoids

Visit [www.caymanchem.com/literature](http://www.caymanchem.com/literature)

# Phytocannabinoids

Trust the manufacturing experience that comes with decades of synthesizing, purifying, and characterizing cannabinoid receptor ligands – from endocannabinoids to highly selective synthetics – for your potency testing.

## Single Standards & Mixtures Available as Certified Reference Materials (CRMs)

Cayman's CRMs are...

- Sold as quantitative solutions in sealed ampules
- Formulated as DEA exempt preparations
- Manufactured and tested to meet ISO/IEC 17025 and ISO 17034 international standards
- Given a certified property and uncertainty value for traceability



### INCLUDED IN MULTI-COMPONENT PHYTOCANNABINOID MIXTURES

Item No.	Product Name	3-Component Mix <i>Item No. 23251</i> 1 mg/ml each	5-Component Mix <i>Item No. 25076</i> 500 µg/ml each	6-Component Mix <i>Item No. 25077</i> 500 µg/ml each	10-Component Mix <i>Item No. 21305</i> 250 µg/ml each
ISO60156	Cannabidiol (CRM)	✓	✓	✓	✓
ISO60183	Cannabinol (CRM)	✓	✓	✓	✓
ISO60157	Δ <sup>9</sup> -THC (CRM)*	✓	✓	✓	✓
18090	Cannabidiolic Acid (CRM)		✓	✓	✓
ISO60175	THCA-A (CRM)		✓	✓	✓
20164	Cannabigerol (CRM)			✓	✓
ISO60163	(±)-Cannabichromene (CRM)*				✓
20165	Cannabidivarin (CRM)				✓
20019	Cannabigerolic Acid (CRM)				✓
ISO60158	Δ <sup>8</sup> -THC (CRM)*				✓
18091	Tetrahydrocannabivarin (CRM)	<p>Want to mix and match different cannabinoids in a mixture?                      Email <a href="mailto:sales@caymanchem.com">sales@caymanchem.com</a> for an estimate</p>			
21974	(±)-Cannabichromevarin (CRM)				
22036	(±)-Cannabicyclol (CRM)				
21295	Cannabicitran (CRM)				

\*Isotopically labeled standards are available for mass spec analysis

View a complete list of our phytocannabinoid standards at [www.caymanchem.com](http://www.caymanchem.com)

For custom quantities or formulations, please email [sales@caymanchem.com](mailto:sales@caymanchem.com)

# Terpenes

Conveniently build a terpene profile for different strains of *Cannabis* using a pre-mixed solution containing commonly found terpenes – single standards are also available.

## Multi-Component Mixtures

### Terpene Mixture 1

Item No. 25928

- A 21-component mixture of terpenes that can be isolated from *Cannabis*
- Contains 1 mg/ml of each compound, including  $\beta$ -myrcene, linalool,  $\beta$ -caryophyllene, and (-)-caryophyllene oxide
- Includes a certified concentration and uncertainty value for each analyte

### Terpene Mixture 2

Item No. 25929

- A 21-component mixture of terpenes that can be isolated from *Cannabis*
- Contains 1 mg/ml of each compound, including (+)-limonene,  $\alpha$ -humulene,  $\alpha$ -pinene, and (-)- $\beta$ -pinene
- Includes a certified concentration and uncertainty value for each analyte

## Qualitative Single Standards

Item No.	Product Name
9002495	(-)- $\alpha$ -Bisabolol
23467	(+)-Borneol
23468	(-)-Borneol
24478	( $\pm$ )-Camphene
23176	(1S)-(-)-Camphor
23165	(+)-3-Carene
21572	$\beta$ -Caryophyllene
21573	(-)-Caryophyllene oxide
25769	(+)-Cedrol
23464	(+)- $\beta$ -Citronellol
25770	$\alpha$ -Copaene
23159	<i>p</i> -Cymene
19641	$\beta$ -Elemene
22183	Eucalyptol
23162	(+)-Fenchol
22184	Geranyl Acetate
21574	$\alpha$ -Humulene

Item No.	Product Name
23177	Isoborneol
23160	(+)-Isopulegol
23161	(-)-Isopulegol
13955	Lagochiline
21719	(+)-Limonene
21575	( $\pm$ )-Linalool
23463	(+)-Menthol
21720	$\beta$ -Myrcene
25774	Nerol
23466	Ocimene
23179	$\alpha$ -Phellandrene
21576	$\alpha$ -Pinene
21577	(-)- $\beta$ -Pinene
25777	Sabinene
23722	$\gamma$ -Terpinene
23173	Terpineol
21712	Terpinolene

View a complete list of our terpene standards at [www.caymanchem.com](http://www.caymanchem.com)

For custom quantities or formulations, please email [sales@caymanchem.com](mailto:sales@caymanchem.com)

# Pesticides

Test for the presence of insecticides, acaricides, herbicides, fungicides, carbamates, and more using Cayman's collection of pesticide mixtures and single standards.

## Multi-Component Mixtures

- Contain 8-15 pesticides per mixture at 100 µg/ml of each compound, including insecticides, herbicides, fungicides, acaricides, pesticide metabolites, and pesticide degradation products
- Include a certified concentration and uncertainty value for each analyte
- Intended for use as a calibration or quality control standard

Item No.	Product Name
26192	Pesticide Mixture 1
26193	Pesticide Mixture 2
26194	Pesticide Mixture 3
26195	Pesticide Mixture 4
26196	Pesticide Mixture 5

Item No.	Product Name
26197	Pesticide Mixture 6
26198	Pesticide Mixture 7
26199	Pesticide Mixture 8
26200	Pesticide Mixture 9
26201	Pesticide Mixture 10

Testing a larger panel of pesticides? Find our collection of more than 100 individual pesticide compounds at [www.caymanchem.com](http://www.caymanchem.com)

# Mycotoxins

## Qualitative Single Standards

Item No.	Product Name
11293	Aflatoxin B <sub>1</sub>
11294	Aflatoxin B <sub>2</sub>
11295	Aflatoxin G <sub>1</sub>
11296	Aflatoxin G <sub>2</sub>
11297	Aflatoxin M <sub>1</sub>
11298	Aflatoxin M <sub>2</sub>
20437	Aflatoxin R <sub>0</sub>
11439	Ochratoxin A
16167	Ochratoxin B
20183	Ochratoxin C
11441	Sterigmatocystin
22070	O-methyl Sterigmatocystin

# Residual Solvents

## Quantitative Single Standards

Item No.	Product Name
25932	Butane Residual Solvent Standard
25933	Isobutane Residual Solvent Standard
25934	Propane Residual Solvent Standard

Be the first to know when we release new *Cannabis* testing standards.

Follow us on social media!

 @CaymanChemical

 [www.facebook.com/caymanchemical](http://www.facebook.com/caymanchemical)

View a complete list of our pesticide, residual solvent, and mycotoxin standards at [www.caymanchem.com](http://www.caymanchem.com)

# Synthetic Cannabinoids

Synthetic cannabinoids designed to mimic the effects of THC have appeared in herbal products. As a leader in the field of designer drugs, Cayman aims to quickly synthesize standards to identify these types of drugs of abuse. A high-throughput mixture and screening library are available to rapidly screen for the presence of synthetic cannabinoid adulterants – single standards are also available.

## Screening Library and Multi-Component Mixture Available as Qualitative Solutions Synthetic Cannabinoid Screening Library

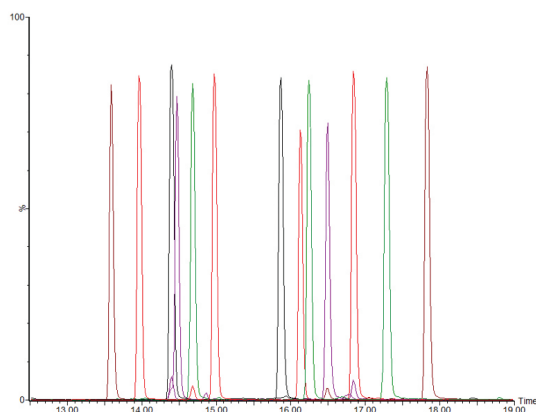
Item No. 9002891

- Contains >350 synthetic cannabinoids in five 96-well plates
- Includes parent compounds and their positional isomers, analogs, and homologs
- Supplied in a 96-well Matrix tube rack format as 10 mM stocks in DMSO

## Synthetic Cannabinoid Mixture 1

Item No. 9002566

- Contains a mixture of 13 commonly abused synthetic cannabinoids
- Prepared as a DEA exempt preparation
- Formulated as a solution in methanol (100 µg/ml of each compound)



See table to the right for peaks identified in this chromatogram

Peak No.	Analyte
Peak 1	UR-144 N-(5-chloropentyl) analog
Peak 2	AM2201
Peak 3	JWH 018
Peak 4	JWH 018 8-quinolinyl carboxamide
Peak 5	JWH 073
Peak 6	JWH 122
Peak 7	JWH 210
Peak 8	JWH 250
Peak 9	MAM2201
Peak 10	UR-144
Peak 11	UR-144 degradant
Peak 12	XLR11
Peak 13	XLR11 degradant

## Single Standards Available as Qualitative Solids and Quantitative Solutions (CRM)

View a complete list of more than 700 synthetic cannabinoid standards at [www.caymanchem.com](http://www.caymanchem.com)

# High-Throughput Sample Preparation

Precellys® Evolution from Bertin Technologies




Grind, lyse, and homogenize samples in less than 30 seconds!

- **Super Efficient:** homogenizes in a powerful figure-8 multi-directional motion at speeds up to 10,000 rpm
- **Super Flexible:** processes four sizes of tubes from 0.3 ml to 15 ml
- **Super Easy:** includes automatic tube locking system



ASK US ABOUT  
— A DEMO! —  
[sales@caymanchem.com](mailto:sales@caymanchem.com)

## Plant Extraction Application Notes

-  *DNA Extraction from Rice Leaf*
-  *Mycoviral double-stranded RNA extraction from plant leaf with Minilys*
-  *Protein extraction from Nicotiana benthamiana leaf*

To request a copy, email [sales@caymanchem.com](mailto:sales@caymanchem.com)

Cayman Chemical is a proud distributor of Bertin Instruments' homogenizers and consumables in the United States. Learn more at [www.caymanchem.com/Precellys](http://www.caymanchem.com/Precellys)



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