

# Cannabis Testing Standards

As the *Cannabis* industry grows, various stakeholders are working towards standardization within the industry. Cayman provides analytical reference standards and ISO 17034-produced Certified Reference Materials to identify and quantitatively measure the components found in *Cannabis* products to aid in potency testing, terpene profiling, and analysis of contaminants. Along with single-component standards, we specialize in the production of pre-made, multi-component mixtures that are designed to improve quantitation accuracy and streamline workflows.



**PHYTOCANNABINOIDS**



**TERPENES**



**RESIDUAL SOLVENTS**



**PESTICIDES & MYCOTOXINS**

IMPROVE  
ACCURACY

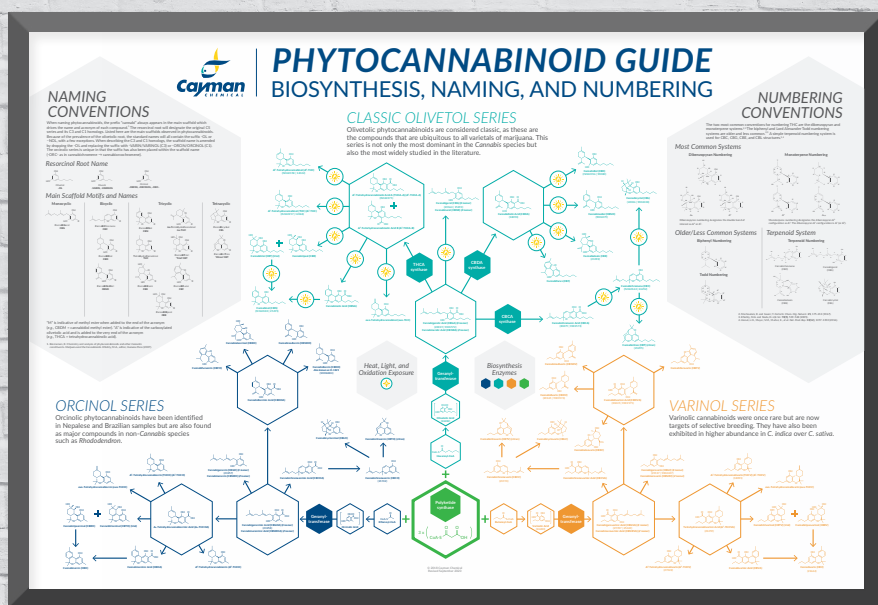
&

REDUCE CONSUMABLE  
COST, 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

Identify and quantitatively measure more than 25 unique phytocannabinoids in your samples using Cayman's single-component Certified Reference Materials (CRMs). Multi-component mixtures are also available to streamline the quantitation of multiple phytocannabinoids.

## Single- and Multi-Component CRMs

- 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
- Includes a certified property and uncertainty value for metrological traceability



		INCLUDED IN MULTI-COMPONENT PHYTOCANNABINOID MIXTURES			
Item No.	Single-Component CRMs	Phytocannabinoid Mixture 5 (CRM) <i>Item No. 25076</i> 500 µg/ml each	Phytocannabinoid Mixture 6 (CRM) <i>Item No. 25077</i> 500 µg/ml each	Phytocannabinoid Mixture 10 (CRM) <i>Item No. 21305</i> 250 µg/ml each	Phytocannabinoid Mixture 11 (CRM) <i>Item No. 21306</i> 250 µg/ml each
ISO60156	Cannabidiol (CRM)	✓	✓	✓	✓
ISO60157	Δ <sup>9</sup> -THC (CRM)	✓	✓	✓	✓
ISO60175	THCA-A (CRM)	✓	✓	✓	✓
ISO60183	Cannabinol (CRM)	✓	✓	✓	✓
18090	Cannabidiolic Acid (CRM)	✓	✓	✓	✓
20164	Cannabigerol (CRM)		✓	✓	✓
ISO60163	(±)-Cannabichromene (CRM)			✓	✓
20165	Cannabidivarin (CRM)			✓	✓
20019	Cannabigerolic Acid (CRM)			✓	✓
ISO60158	Δ <sup>8</sup> -THC (CRM)			✓	✓
18091	Tetrahydrocannabivarin (CRM)				✓
30879	(±)-Cannabichromenic Acid (CRM)				
21742	(±)-Cannabichromeorcin (CRM)				
21974	(±)-Cannabichromevarin (CRM)				
22036	(±)-Cannabicyclol (CRM)				
21295	Cannabicitran (CRM)				
30245	Cannabidivarinic Acid (CRM)				
29117	Cannabigerovarin (CRM)				
29787	Cannabigerovarinic Acid (CRM)				
21259	Tetrahydrocannabivarinic Acid (CRM)				

View our range of pre-made CRM mixtures designed to simplify workflows and provide super reproducibility, accuracy, and precision at [www.caymanchem.com/phytomixes](http://www.caymanchem.com/phytomixes)



Learn how pre-made mixtures improve quantitation accuracy in our app note at [www.caymanchem.com/CRMmixtures](http://www.caymanchem.com/CRMmixtures)

DEA exempt applies to US only. Products may be controlled in other countries. Please verify with your local distributor.

# Terpenes

Conveniently build a terpene profile for different strains of *Cannabis* using a pre-made, multi-component solution containing commonly found terpenes or by using qualitative single-component standards.

## 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

## Single-Component Standards

Item No.	Product Name
14007	(+)-Aphidicolin
9002495	(-)- $\alpha$ -Bisabolol
23467	(+)-Borneol
23468	(-)-Borneol
24478	( $\pm$ )-Camphene
21572	$\beta$ -Caryophyllene
21573	(-)-Caryophyllene oxide
23464	(+)- $\beta$ -Citronellol
25770	$\alpha$ -Copaene
23159	<i>p</i> -Cymene
25126	23- <i>epi</i> -26-Deoxyactein
19641	$\beta$ -Elemene
22183	Eucalyptol
25771	$\beta$ -Eudesmol
23162	(+)-Fenchol
11018	Forskolin
22184	Geranyl Acetate

Item No.	Product Name
23172	(-)-Guaiol
21574	$\alpha$ -Humulene
14620	(-)-Huperzine A
23161	(-)-Isopulegol
21719	(+)-Limonene
21575	( $\pm$ )-Linalool
23463	(+)-Menthol
21720	$\beta$ -Myrcene
25774	Nerol
11345	Paxilline
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)



# Mycotoxins

Test for the presence of mycotoxins produced by fungi that have been found in *Cannabis* samples and cultivation materials using Cayman's mycotoxin mixture and single-component standards.

## NEW: Mycotoxin Mixture 5 (CRM)

Item No. 28151

- Contains aflatoxin B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub>, G<sub>2</sub>, and ochratoxin A at 10 µg/ml of each compound
- Includes a certified concentration and uncertainty value for each analyte
- Intended for use as a calibration or quality control standard

Testing a larger panel of mycotoxins? Discover our collection of standards for aflatoxins, ochratoxins, and sterigmatocystins at [www.caymanchem.com](http://www.caymanchem.com)

# Pesticides

## Multi-Component Mixtures

- Contain 8-16 pesticides per mixture at 100 µg/ml of each compound
- 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 - 16 Components
26193	Pesticide Mixture 2 - 15 Components
26194	Pesticide Mixture 3 - 15 Components
26195	Pesticide Mixture 4 - 15 Components
26196	Pesticide Mixture 5 - 14 Components
26197	Pesticide Mixture 6 - 15 Components
26198	Pesticide Mixture 7 - 8 Components
26199	Pesticide Mixture 8 - 15 Components
26200	Pesticide Mixture 9 - 16 Components
26201	Pesticide Mixture 10 - 15 Components

# Residual Solvents

## Single-Component Standards

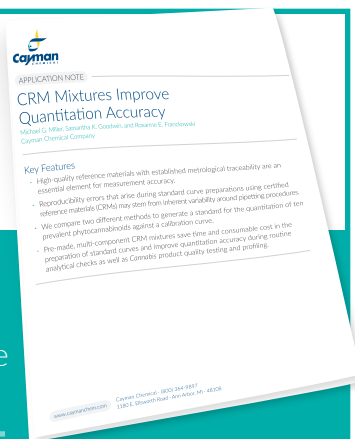
Item No.	Product Name
25932	Butane Residual Solvent Standard
25933	Isobutane Residual Solvent Standard
25934	Propane Residual Solvent Standard

## EXPLORE APPLICATION NOTES

Comparison of CRM Concentrations Among Four Different Reference Material Producers

CRM Mixtures Improve Quantitation Accuracy

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



View a complete list of our mycotoxin, pesticide, and residual solvent 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. Cayman offers DEA exempt preparations of classic and emerging synthetic cannabinoid compounds as well as a high-throughput mixture to rapidly screen for synthetic cannabinoid adulterants.

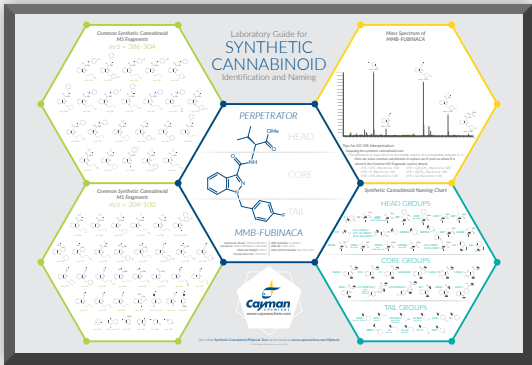
## Synthetic Cannabinoid Screening Library

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

## Single-Component Standards

Item No.	Product Name
27237	AB-CHMINACA (CRM)
19805	4-fluoro ADB (CRM)
27043	AM2201 (CRM)
28624	APP-BUTINACA (CRM)
19948	CUMYL-PINACA (CRM)
27973	JWH 018 (CRM)
22047	MAB-CHMINACA (CRM)
28186	4-fluoro MDMB-BUTINACA (CRM)
18203	PB-22 (CRM)
ISO60055	UR-144 (CRM)
ISO60059	XLR11 (CRM)



Request the Synthetic Cannabinoid Lab Guide wall poster at [www.caymanchem.com/literature](http://www.caymanchem.com/literature)

# Other Cannabinoids of Interest

## Single-Component Standards

Item No.	Product Name
29031	CBDB
29306	$\Delta^9$ -THCB
30169	CBDP
30171	$\Delta^9$ -THCP

Item No.	Product Name
29780	(6aR,9R)- $\Delta^{10}$ -THC (exempt preparation)
29781	(6aR,9S)- $\Delta^{10}$ -THC (exempt preparation)
29779	9(R)- $\Delta^{6a,10a}$ -THC (exempt preparation)
29782	9(S)- $\Delta^{6a,10a}$ -THC (exempt preparation)

View a complete list of more than 750 cannabinoid standards at [www.caymanchem.com](http://www.caymanchem.com)

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# 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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