

CERTIFICATE of ANALYSIS

Cathinone Analytical Standards Panel

For R&D purposes only. Not intended for human or animal use.

Item No.:	31616
Batch No.:	0690269
Size:	100 µg/well
Expiry Date:	05OCT2026 (valid from date of certification)
Storage & Handling:	Store upright and unopened at -20°C. Warm to room temperature prior to opening.
Safety:	Danger. Review the Safety Data Sheets before use.

Description

This product consists of 96-well Matrix plates containing individual cathinone and cathinone-class standards. The individual well locations for each unique standard are listed in the table below.

Traceability Statement

This kit was prepared from individual standards that have been verified through standard quality testing and are traceable via individual item and batch numbers. All compounds used to make this kit were used within their valid expiry dates. Stability testing of this kit is ongoing to ensure continuous quality and traceability of the materials.

Quality Testing

A single kit was pulled randomly from the batch and high resolution accurate mass analysis was performed to verify the contents of each vial position. A summary of results is reported below as the average ppm mass error $\pm$ standard deviation determined for all analytes.

Test	Result	Specification	Meets Specification
Average mass error	0.97 $\pm$ 0.48 ppm	$\pm$ 10 ppm	Yes

Individual results are reported in the table on pages 2-13.

Approval: 

Title: Director of Analytical Chemistry

Certification Date: 05OCT2023

Cayman Chemical certifies that this product meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiry date when stored unopened as recommended.

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Kit Contents Plate 1

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
A1	Unused	Unused	Unused	Unused	Unused
A2	(-)-(S)-Cathinone (hydrochloride)	C ₉ H ₁₁ NO	150.0913	150.0912	0.93
A3	4-methyl Pentedrone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
A4	Methcathinone (hydrochloride)	C ₁₀ H ₁₃ NO	164.1070	164.1069	0.55
A5	2-chloro-N,N-Dimethylcathinone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0835	0.80
A6	2-Fluoroisocathinone (hydrochloride)	C ₉ H ₁₀ FNO	168.0819	168.0818	0.71
A7	4-chloro Buphedrone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0834	1.27
A8	2-Thiothionone (hydrochloride)	C ₈ H ₁₁ NOS	170.0634	170.0634	0.06
A9	Mephedrone (hydrochloride)	C ₁₁ H ₁₅ NO	178.1226	178.1224	1.35
A10	3-methyl-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₄ H ₁₉ NO	218.1539	218.1536	1.56
A11	3-Methylmethcathinone (hydrochloride)	C ₁₁ H ₁₅ NO	178.1226	178.1225	0.79
A12	Unused	Unused	Unused	Unused	Unused
B1	Unused	Unused	Unused	Unused	Unused
B2	Ethcathinone (hydrochloride)	C ₁₁ H ₁₅ NO	178.1226	178.1225	0.79
B3	3,4-dichloro-α-Pyrrolidinoisohexanophenone (hydrochloride)	C ₁₆ H ₂₁ Cl ₂ NO	314.1073	314.1070	0.96
B4	N,N-Dimethylcathinone (hydrochloride)	C ₁₁ H ₁₅ NO	178.1226	178.1225	0.79
B5	Mephedrone metabolite (hydrochloride)	C ₁₁ H ₁₇ NO	180.1383	180.1381	1.05
B6	4-ethyl Pentedrone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1692	1.77
B7	Mephedrone metabolite (hydrochloride)	C ₁₁ H ₁₇ NO	180.1383	180.1381	1.05
B8	α-ethylamino-3,3-Dimethylbutyrophenone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1693	1.32
B9	3-Fluoromethcathinone (hydrochloride)	C ₁₀ H ₁₂ FNO	182.0976	182.0974	0.93
B10	α-Ethylaminopentiophenone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1538	0.68
B11	2-Fluoromethcathinone (hydrochloride)	C ₁₀ H ₁₂ FNO	182.0976	182.0975	0.38
B12	Unused	Unused	Unused	Unused	Unused

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640

techserv@caymanchem.com
www.caymanchem.com

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Kit Contents Plate 1 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
C1	Unused	Unused	Unused	Unused	Unused
C2	α-Dimethylaminopropiophenone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
C3	4-Fluoromethcathinone metabolite (hydrochloride)	C ₁₀ H ₁₄ FNO	184.1132	184.1131	0.65
C4	α-Methylaminohexanophenone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
C5	MTA (hydrochloride)	C ₁₂ H ₁₅ NO	190.1226	190.1224	1.26
C6	4'-fluoro-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₃ H ₁₆ FNO	222.1289	222.1285	1.67
C7	2-Methylethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
C8	3,4-Dimethoxymethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO ₃	224.1281	224.1277	1.87
C9	2,3-Dimethylmethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
C10	4-chloro Pentadone (hydrochloride)	C ₁₂ H ₁₆ ClNO	226.0993	226.0990	1.42
C11	4-Methylbuphedrone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
C12	Unused	Unused	Unused	Unused	Unused
D1	Unused	Unused	Unused	Unused	Unused
D2	Isopentadone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
D3	bk-EABDI (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1693	1.25
D4	N-Ethylbuphedrone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
D5	4-fluoro Buphedrone (hydrochloride)	C ₁₁ H ₁₄ FNO	196.1132	196.1131	0.61
D6	2,3-Methylenedioxymethcathinone (hydrochloride)	C ₁₁ H ₁₃ NO ₃	208.0968	208.0965	1.54
D7	3-Chloromethcathinone (hydrochloride)	C ₁₀ H ₁₂ ClNO	198.0680	198.0677	1.62
D8	N-methoxy Mephedrone (hydrochloride)	C ₁₂ H ₁₇ NO ₂	208.1332	208.1329	1.49
D9	α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₃ H ₁₇ NO	204.1383	204.1381	0.93
D10	4-fluoro Pentadone (hydrochloride)	C ₁₂ H ₁₆ FNO	210.1289	210.1285	1.76
D11	3-Ethylethcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
D12	Unused	Unused	Unused	Unused	Unused

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Kit Contents Plate 1 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
E1	Unused	Unused	Unused	Unused	Unused
E2	2-Ethylethcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
E3	Methedrone (hydrochloride)	C ₁₁ H ₁₅ NO ₂	194.1176	194.1174	0.82
E4	2,3-Dimethylethcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1536	1.65
E5	3-Methoxymethcathinone (hydrochloride)	C ₁₁ H ₁₅ NO ₂	194.1176	194.1174	0.82
E6	2,4-Dimethylethcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
E7	Pentedrone metabolite (hydrochloride)	C ₁₂ H ₁₉ NO	194.1539	194.1538	0.72
E8	4-Methyl-α-ethylaminobutiophenone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1538	0.68
E9	Pentedrone metabolite (hydrochloride)	C ₁₂ H ₁₉ NO	194.1539	194.1537	1.24
E10	Butylone (hydrochloride)	C ₁₂ H ₁₅ NO ₃	222.1125	222.1121	1.67
E11	3,4-Dimethylmethcathinone metabolite (hydrochloride)	C ₁₂ H ₁₉ NO	194.1539	194.1538	0.72
E12	Unused	Unused	Unused	Unused	Unused
F1	Unused	Unused	Unused	Unused	Unused
F2	2-Fluoroethcathinone (hydrochloride)	C ₁₁ H ₁₄ FNO	196.1132	196.1130	1.12
F3	3,4-Dimethylmethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
F4	4-Fluoroethcathinone (hydrochloride)	C ₁₁ H ₁₄ FNO	196.1132	196.1130	1.12
F5	3-Methylbuphedrone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
F6	4-Chloromethcathinone (hydrochloride)	C ₁₀ H ₁₂ ClNO	198.0680	198.0678	1.11
F7	Propylcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
F8	2-Chloromethcathinone (hydrochloride)	C ₁₀ H ₁₂ ClNO	198.0680	198.0678	1.11
F9	4-Ethylmethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
F10	4-Ethylethcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
F11	3-Ethylmethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
F12	Unused	Unused	Unused	Unused	Unused

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Kit Contents Plate 1 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
G1	Unused	Unused	Unused	Unused	Unused
G2	4-Chlorocathinone (hydrochloride)	C ₉ H ₁₀ ClNO	184.0524	184.0523	0.38
G3	4-ethyl-N,N-Dimethylcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
G4	3,4-Methylenedioxy PV9 (hydrochloride)	C ₁₉ H ₂₇ NO ₃	318.2064	318.2061	0.85
G5	3,4-Dimethylethcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1536	1.65
G6	4-Methylethcathinone metabolite (hydrochloride)	C ₁₂ H ₁₉ NO	194.1539	194.1538	0.72
G7	Diethylcathinone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1538	0.68
G8	5-methoxy N,N-diethyl Hexylone (hydrochloride)	C ₁₈ H ₂₇ NO ₄	322.2013	322.2009	1.18
G9	Mexedrone (hydrochloride)	C ₁₂ H ₁₇ NO ₂	208.1332	208.1329	1.49
G10	4-Methylethcathinone metabolite (hydrochloride)	C ₁₂ H ₁₉ NO	194.1539	194.1538	0.72
G11	4-Chloroethcathinone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0833	1.74
G12	Unused	Unused	Unused	Unused	Unused
H1	Unused	Unused	Unused	Unused	Unused
H2	3-Fluoroethcathinone (hydrochloride)	C ₁₁ H ₁₄ FNO	196.1132	196.1130	1.12
H3	3-Chloroethcathinone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0834	1.27
H4	2,3-Methylenedioxy-α-ethylaminopropiophenone (hydrochloride)	C ₁₂ H ₁₅ NO ₃	222.1125	222.1120	2.12
H5	Methylone (hydrochloride)	C ₁₁ H ₁₃ NO ₃	208.0968	208.0965	1.54
H6	4-methyl-N,N-Dimethylcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
H7	4-methoxy-N,N-Dimethylcathinone (hydrochloride)	C ₁₂ H ₁₇ NO ₂	208.1332	208.1329	1.49
H8	4-Methylethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
H9	4-methyl-N-Methylbuphedrone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1537	1.16
H10	2-Ethylmethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
H11	α-Methylaminoisohexanophenone (hydrochloride)	C ₁₃ H ₁₉ NO	206.1539	206.1538	0.68
H12	Unused	Unused	Unused	Unused	Unused

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CERTIFICATE of ANALYSIS



Kit Contents Plate 2

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
A1	Unused	Unused	Unused	Unused	Unused
A2	2-Chloroethcathinone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0835	0.80
A3	DL-Cathinone (hydrochloride)	C ₉ H ₁₁ NO	150.0913	150.0913	0.27
A4	4-chloro-N,N-Dimethylcathinone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0835	0.80
A5	nor-Mephedrone (hydrochloride)	C ₁₀ H ₁₃ NO	164.1070	164.1069	0.55
A6	3-chloro-N,N-Dimethylcathinone (hydrochloride)	C ₁₁ H ₁₄ ClNO	212.0837	212.0835	0.80
A7	4-Fluoroisocathinone (hydrochloride)	C ₉ H ₁₀ FNO	168.0819	168.0818	0.71
A8	α-Piperidinobutiophenone (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1693	1.25
A9	2-methyl-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₄ H ₁₉ NO	218.1539	218.1537	1.10
A10	2-Methylmethcathinone (hydrochloride)	C ₁₁ H ₁₅ NO	178.1226	178.1225	0.79
A11	α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₄ H ₁₉ NO	218.1539	218.1537	1.10
A12	Unused	Unused	Unused	Unused	Unused
B1	Unused	Unused	Unused	Unused	Unused
B2	4-methyl-α-Ethylaminopentiophenone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1693	1.32
B3	Buphedrone (hydrochloride)	C ₁₁ H ₁₅ NO	178.1226	178.1224	1.35
B4	4'-methyl-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₄ H ₁₉ NO	218.1539	218.1537	1.10
B5	α-Ethylaminohexanophenone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1692	1.77
B6	Buphedrone metabolite (hydrochloride)	C ₁₁ H ₁₇ NO	180.1383	180.1381	1.05
B7	4-Methyldiethcathinone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1691	2.23
B8	Buphedrone metabolite (hydrochloride)	C ₁₁ H ₁₇ NO	180.1383	180.1381	1.05
B9	4'-Methyl-N-methylhexanophenone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1692	1.77
B10	4-Fluoromethcathinone (hydrochloride)	C ₁₀ H ₁₂ FNO	182.0976	182.0974	0.93
B11	3,4-EDMC (hydrochloride)	C ₁₂ H ₁₅ NO ₃	222.1125	222.1121	1.67
B12	Unused	Unused	Unused	Unused	Unused

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Kit Contents Plate 2 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
C1	Unused	Unused	Unused	Unused	Unused
C2	bk-MDEA (hydrochloride)	C ₁₂ H ₁₅ NO ₃	222.1125	222.1120	2.12
C3	3',4'-dimethyl-α-Ethylaminovalerophenone (hydrochloride)	C ₁₅ H ₂₃ NO	234.1852	234.1849	1.45
C4	4-Fluoromethcathinone metabolite (hydrochloride)	C ₁₀ H ₁₄ FNO	184.1132	184.1130	1.19
C5	3'-fluoro-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₃ H ₁₆ FNO	222.1289	222.1285	1.67
C6	Pentedrone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
C7	α-Pyrrolidinobuthiophenone (hydrochloride)	C ₁₂ H ₁₇ NOS	224.1104	224.1100	1.61
C8	3-Methylethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
C9	4-fluoro-α-Ethylaminovalerophenone (hydrochloride)	C ₁₃ H ₁₈ FNO	224.1445	224.1441	1.87
C10	2,4-Dimethylmethcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1380	1.51
C11	4-chloro-N-Isopropylcathinone (hydrochloride)	C ₁₂ H ₁₆ ClNO	226.0993	226.0991	0.97
C12	Unused	Unused	Unused	Unused	Unused
D1	Unused	Unused	Unused	Unused	Unused
D2	3,4-Dichloromethcathinone (hydrochloride)	C ₁₀ H ₁₁ Cl ₂ NO	232.0291	232.0289	0.65
D3	N-ethyl-N-Methylcathinone (hydrochloride)	C ₁₂ H ₁₇ NO	192.1383	192.1381	0.99
D4	α-Pyrrolidinopentiophenone (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1692	1.68
D5	bk-DMBDB (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1278	1.36
D6	3-methyl-α-Pyrrolidinobuthiophenone (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1693	1.25
D7	4'-methoxy-α-Ethylaminovalerophenone (hydrochloride)	C ₁₄ H ₂₁ NO ₂	236.1645	236.1641	1.74
D8	α-Isopropylaminopentiophenone (hydrochloride)	C ₁₄ H ₂₁ NO	220.1696	220.1692	1.77
D9	6-methoxy Methylone (hydrochloride)	C ₁₂ H ₁₅ NO ₄	238.1074	238.1069	2.02
D10	4-methoxy-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₄ H ₁₉ NO ₂	234.1489	234.1484	1.96
D11	α-Pyrrolidinopentiothiophenone (hydrochloride)	C ₁₃ H ₁₉ NOS	238.1260	238.1257	1.30
D12	Unused	Unused	Unused	Unused	Unused

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Kit Contents Plate 2 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
E1	Unused	Unused	Unused	Unused	Unused
E2	α-Pyrrolidinopentiophenone metabolite 1 (trifluoroacetate salt)	C ₁₅ H ₂₃ NO	234.1852	234.1848	1.88
E3	bk-MDDMA (hydrochloride)	C ₁₂ H ₁₅ NO ₃	222.1125	222.1120	2.12
E4	N-ethyl Heptedrone (hydrochloride)	C ₁₅ H ₂₃ NO	234.1852	234.1849	1.45
E5	3-Bromomethcathinone (hydrochloride)	C ₁₀ H ₁₂ BrNO	242.0175	242.0172	1.24
E6	NRG-3 (hydrochloride)	C ₁₆ H ₁₉ NO	242.1539	242.1534	2.23
E7	3,4-Methylenedioxy-5-methylethcathinone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1277	1.78
E8	3,4-dichloro-N,N-Dimethcathinone (hydrochloride)	C ₁₁ H ₁₃ Cl ₂ NO	246.0447	246.0445	0.81
E9	3,4-Methylenedioxy-N-propylcathinone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1276	2.20
E10	3',4'-trimethylene-α-Ethylaminovalerophenone (hydrochloride)	C ₁₆ H ₂₃ NO	246.1852	246.1849	1.38
E11	3,4-methylenedioxy-α-methylamino-Isovalerophenone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1278	1.36
E12	Unused	Unused	Unused	Unused	Unused
F1	Unused	Unused	Unused	Unused	Unused
F2	2,3-Methylenedioxy-α-ethylaminobutiophenone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1277	1.78
F3	3,4-Methylenedioxy-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₄ H ₁₇ NO ₃	248.1281	248.1277	1.69
F4	Eutylone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1276	2.20
F5	2-methyl-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1692	1.68
F6	α-Butylaminohexanophenone (hydrochloride)	C ₁₆ H ₂₅ NO	248.2009	248.2005	1.57
F7	4-methyl-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1692	1.68
F8	4'-chloro-α-Pyrrolidinopropiophenone (hydrochloride)	C ₁₃ H ₁₆ ClNO	238.0993	238.0990	1.34
F9	3',4'-trimethylene-α-methylamino-Valerophenone (hydrochloride)	C ₁₅ H ₂₁ NO	232.1696	232.1693	1.25
F10	3',4'-Methylenedioxy-N,N-diethylcathinone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1433	1.88
F11	4-methoxy-α-Pyrrolidinopropiophenone (tosylate)	C ₁₄ H ₁₉ NO ₂	234.1489	234.1485	1.54
F12	Unused	Unused	Unused	Unused	Unused

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1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640

techserv@caymanchem.com
www.caymanchem.com

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Kit Contents Plate 2 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
G1	Unused	Unused	Unused	Unused	Unused
G2	4-fluoro IPV (hydrochloride)	C ₁₄ H ₂₀ FNO	238.1602	238.1597	1.97
G3	4-chloro-N-Butylcathinone (hydrochloride)	C ₁₃ H ₁₈ ClNO	240.1150	240.1147	1.12
G4	4-Bromomethcathinone (hydrochloride)	C ₁₀ H ₁₂ BrNO	242.0175	242.0173	0.83
G5	4-methyl-N-Ethylhexanophenone (hydrochloride)	C ₁₅ H ₂₃ NO	234.1852	234.1849	1.45
G6	2,3-Pentylone isomer (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1278	1.36
G7	3,4-Dichloroethcathinone (hydrochloride)	C ₁₁ H ₁₃ Cl ₂ NO	246.0447	246.0445	0.81
G8	3,4-Methylenedioxy-N-isopropylcathinone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1277	1.78
G9	Pyrovalerone (hydrochloride)	C ₁₆ H ₂₃ NO	246.1852	246.1850	0.97
G10	N-Methylethylone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1278	1.36
G11	α-Pyrrolidinoisohexanophenone (hydrochloride)	C ₁₆ H ₂₃ NO	246.1852	246.1849	1.38
G12	Unused	Unused	Unused	Unused	Unused
H1	Unused	Unused	Unused	Unused	Unused
H2	α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₆ H ₂₃ NO	246.1852	246.1849	1.38
H3	Pentylone (hydrochloride)	C ₁₃ H ₁₇ NO ₃	236.1281	236.1277	1.78
H4	4-methoxy-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₅ H ₂₁ NO ₂	248.1645	248.1642	1.25
H5	α-Isobutylaminohexanophenone (hydrochloride)	C ₁₆ H ₂₅ NO	248.2009	248.2006	1.17
H6	4-fluoro-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₄ H ₁₈ FNO	236.1445	236.1441	1.78
H7	α-Diethylaminohexanophenone (hydrochloride)	C ₁₆ H ₂₅ NO	248.2009	248.2005	1.57
H8	N-acetyl-3,4-Methylenedioxy-methcathinone	C ₁₃ H ₁₅ NO ₄	250.1074	250.1070	1.52
H9	N-ethyl Pentylone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1435	1.08
H10	5-methoxy Methylone (hydrochloride)	C ₁₂ H ₁₅ NO ₄	238.1074	238.1070	1.60
H11	3',4'-Methylenedioxy-N-tert-butylcathinone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1434	1.48
H12	Unused	Unused	Unused	Unused	Unused

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1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640

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Kit Contents Plate 3

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
A1	Unused	Unused	Unused	Unused	Unused
A2	3,4-Methylenedioxy-α-methylaminohexanophenone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1435	1.08
A3	4-fluoro-α-Pyrrolidinoisohexanophenone (hydrochloride)	C ₁₆ H ₂₂ FNO	264.1758	264.1756	0.83
A4	N,N-Dimethylpentylone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1434	1.48
A5	4-fluoro-3-methyl-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₆ H ₂₂ FNO	264.1758	264.1759	0.30
A6	3'4'-methylenedioxy-α-ethylamino-Isovalerophenone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1435	1.08
A7	DL-4662 (hydrochloride)	C ₁₅ H ₂₃ NO ₃	266.1751	266.1748	1.01
A8	3-fluoro-α-Pyrrolidinopentiophenone (hydrochloride)	C ₁₅ H ₂₀ FNO	250.1602	250.1599	1.08
A9	Benzedrone (hydrochloride)	C ₁₇ H ₁₉ NO	254.1539	254.1535	1.73
A10	4-Bromoethcathinone (hydrochloride)	C ₁₁ H ₁₄ BrNO	256.0332	256.0329	0.98
A11	N-sec-butyl Pentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
A12	Unused	Unused	Unused	Unused	Unused
B1	Unused	Unused	Unused	Unused	Unused
B2	4'-methyl-α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₇ H ₂₅ NO	260.2009	260.2005	1.50
B3	α-Pyrrolidinocyclohexanophenone (hydrochloride)	C ₁₈ H ₂₅ NO	272.2009	272.2006	1.07
B4	3',4'-dimethyl-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₇ H ₂₅ NO	260.2009	260.2007	0.73
B5	3-desoxy-3,4-Methylenedioxy Pyrovalerone (hydrochloride)	C ₁₇ H ₂₃ NO ₂	274.1802	274.1797	1.68
B6	4-ethyl-α-Pyrrolidinopentiophenone (hydrochloride)	C ₁₇ H ₂₅ NO	260.2009	260.2006	1.11
B7	4-methyl PV8 (hydrochloride)	C ₁₈ H ₂₇ NO	274.2165	274.2162	1.24
B8	4-methoxy-α-Pyrrolidinopentiophenone (hydrochloride)	C ₁₆ H ₂₃ NO ₂	262.1802	262.1800	0.61
B9	3-ethoxy-4-methoxy N,N-Diethylhexedrone (hydrochloride)	C ₁₉ H ₃₁ NO ₃	322.2377	322.2375	0.53
B10	N-ethyl Hexylone (hydrochloride)	C ₁₅ H ₂₁ NO ₃	264.1594	264.1592	0.83
B11	2,3-Methylenedioxy Pyrovalerone (hydrochloride)	C ₁₆ H ₂₁ NO ₃	276.1594	276.1591	1.16
B12	Unused	Unused	Unused	Unused	Unused

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1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

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[734] 971-3335
FAX: [734] 971-3640

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Kit Contents Plate 3 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
C1	Unused	Unused	Unused	Unused	Unused
C2	N-methyl-N-isopropyl Pentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
C3	3,4-Methylenedioxy-α-methylaminoisohexanophenone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1434	1.48
C4	N,N-dimethyl Heptylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
C5	3',4'-methylenedioxy-α-dimethylamino-Isovalerophenone (hydrochloride)	C ₁₄ H ₁₉ NO ₃	250.1438	250.1434	1.48
C6	4'-chloro-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₅ H ₂₀ ClNO	266.1306	266.1303	1.20
C7	4-fluoro-α-Pyrrolidinopentiophenone (hydrochloride)	C ₁₅ H ₂₀ FNO	250.1602	250.1598	1.48
C8	4-chloro-N,N-Diethylpentedrone (hydrochloride)	C ₁₅ H ₂₂ ClNO	268.1463	268.1460	1.01
C9	N-methyl Benzedrone (hydrochloride)	C ₁₈ H ₂₁ NO	268.1696	268.1692	1.45
C10	4-bromo-α-Methylaminovalerophenone (hydrochloride)	C ₁₂ H ₁₆ BrNO	270.0488	270.0486	0.74
C11	3',4'-tetramethylene-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₈ H ₂₅ NO	272.2009	272.2005	1.43
C12	Unused	Unused	Unused	Unused	Unused
D1	Unused	Unused	Unused	Unused	Unused
D2	3',4'-trimethylene-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₈ H ₂₅ NO	272.2009	272.2007	0.70
D3	PV8 (hydrochloride)	C ₁₇ H ₂₅ NO	260.2009	260.2006	1.11
D4	bk-2C-B (hydrochloride)	C ₁₀ H ₁₂ BrNO ₃	274.0073	274.0070	1.20
D5	2,5-dimethyl-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₇ H ₂₅ NO	260.2009	260.2006	1.11
D6	PV9 (hydrochloride)	C ₁₈ H ₂₇ NO	274.2165	274.2162	1.24
D7	3,4-Methylenedioxy-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₅ H ₁₉ NO ₃	262.1438	262.1435	1.03
D8	3,4-Methylenedioxy Pyrovalerone (hydrochloride)	C ₁₆ H ₂₁ NO ₃	276.1594	276.1591	1.16
D9	3,4-Methylenedioxy Pyrovalerone metabolite 2 (hydrochloride)	C ₁₅ H ₂₁ NO ₃	264.1594	264.1591	1.21
D10	3-methoxy-4-ethoxy N,N-Diethylhexedrone (hydrochloride)	C ₁₉ H ₃₁ NO ₃	322.2377	322.2373	1.15
D11	4-bromo-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₅ H ₂₀ BrNO	310.0801	310.0799	0.64
D12	Unused	Unused	Unused	Unused	Unused

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640

techserv@caymanchem.com
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Kit Contents Plate 3 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
E1	Unused	Unused	Unused	Unused	Unused
E2	3,4-Methylenedioxy Pyrovalerone metabolite 1 (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
E3	4-Methylthio-N-benzylcathinone (hydrochloride)	C ₁₇ H ₁₉ NOS	286.1260	286.1257	1.08
E4	N-butyl Pentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1747	1.33
E5	3',4'-trimethylene-α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₉ H ₂₇ NO	286.2165	286.2162	1.19
E6	N-isopropyl Hexylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1747	1.33
E7	3,4-Methylenedioxy-α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₇ H ₂₃ NO ₃	290.1751	290.1747	1.28
E8	N-propyl Hexylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
E9	3,4-dimethoxy-α-Pyrrolidinopentiophenone (hydrochloride)	C ₁₇ H ₂₅ NO ₃	292.1907	292.1903	1.44
E10	N-tert-butyl Pentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
E11	4-fluoro PV9 (hydrochloride)	C ₁₈ H ₂₆ FNO	292.2071	292.2067	1.44
E12	Unused	Unused	Unused	Unused	Unused
F1	Unused	Unused	Unused	Unused	Unused
F2	4'-fluoro-α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₆ H ₂₂ FNO	264.1758	264.1755	1.21
F3	3',4'-trimethylene-α-Pyrrolidinobutiophenone (hydrochloride)	C ₁₇ H ₂₃ NO	258.1852	258.1849	1.32
F4	3-fluoro-α-Pyrrolidinoisohexanophenone (hydrochloride)	C ₁₆ H ₂₂ FNO	264.1758	264.1755	1.21
F5	4-fluoro PV8 (hydrochloride)	C ₁₇ H ₂₄ FNO	278.1915	278.1911	1.33
F6	α-Phthalimidopropiophenone	C ₁₇ H ₁₃ NO ₃	280.0968	280.0965	1.14
F7	2-methyl-4'-(methylthio)-2-Morpholinopropiophenone	C ₁₅ H ₂₁ NO ₂ S	280.1366	280.1362	1.36
F8	6-methoxy-N,N-Diethylpentylone (hydrochloride)	C ₁₇ H ₂₅ NO ₄	308.1856	308.1852	1.40
F9	3-methoxy-4-ethoxy N,N-Diethylpentedrone (hydrochloride)	C ₁₈ H ₂₉ NO ₃	308.2220	308.2216	1.36
F10	Naphyrone 1-naphthyl isomer (hydrochloride)	C ₁₉ H ₂₃ NO	282.1852	282.1848	1.56
F11	4-Dimethylamino-N-benzylcathinone (hydrochloride)	C ₁₈ H ₂₂ N ₂ O	283.1805	283.1801	1.38
F12	Unused	Unused	Unused	Unused	Unused

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

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[734] 971-3335
FAX: [734] 971-3640

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Kit Contents Plate 3 Continued

Well	Item Name	Molecular Formula (free analyte)	Calculated [M+H] ⁺ m/z	Measured [M+H] ⁺ m/z	Mass Accuracy (ppm)
G1	Unused	Unused	Unused	Unused	Unused
G2	3,4-Methylenedioxy-N-benzylcathinone (hydrochloride)	C ₁₇ H ₁₇ NO ₃	284.1281	284.1277	1.48
G3	N,N-Diethylpentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1747	1.33
G4	3',4'-tetramethylene-α-Pyrrolidinovalerophenone (hydrochloride)	C ₁₉ H ₂₇ NO	286.2165	286.2161	1.54
G5	N-ethyl Heptylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1747	1.33
G6	α-Pyrrolidinononanophenone (hydrochloride)	C ₁₉ H ₂₉ NO	288.2322	288.2318	1.35
G7	3,4-Methylenedioxy-α-ethylmethylaninohexanophenone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
G8	4-methoxy PV8 (hydrochloride)	C ₁₈ H ₂₇ NO ₂	290.2115	290.2110	1.59
G9	N-methyl-N-propyl Pentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
G10	N,N-diethyl Hexylone (hydrochloride)	C ₁₇ H ₂₅ NO ₃	292.1907	292.1903	1.44
G11	N-isobutyl Pentylone (hydrochloride)	C ₁₆ H ₂₃ NO ₃	278.1751	278.1748	0.97
G12	Unused	Unused	Unused	Unused	Unused
H1	Unused	Unused	Unused	Unused	Unused
H2	4-fluoro PV8 piperidine analog (hydrochloride)	C ₁₈ H ₂₆ FNO	292.2071	292.2067	1.44
H3	BMDB (hydrochloride)	C ₁₈ H ₁₉ NO ₃	298.1438	298.1435	0.91
H4	3,4-Methylenedioxy PV8 (hydrochloride)	C ₁₈ H ₂₅ NO ₃	304.1907	304.1903	1.38
H5	4-methoxy PV9 (hydrochloride)	C ₁₉ H ₂₉ NO ₂	304.2271	304.2267	1.35
H6	3,4-dimethoxy-α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₈ H ₂₇ NO ₃	306.2064	306.2060	1.21
H7	5-methoxy-N,N-Diethylpentylone (hydrochloride)	C ₁₇ H ₂₅ NO ₄	308.1856	308.1853	1.07
H8	4-chloro-α-Pyrrolidinohexanophenone (hydrochloride)	C ₁₆ H ₂₂ ClNO	280.1463	280.1461	0.61
H9	Naphyrone (hydrochloride)	C ₁₉ H ₂₃ NO	282.1852	282.1849	1.20
H10	3-ethoxy-4-methoxy N,N-Diethylpentedrone (hydrochloride)	C ₁₈ H ₂₉ NO ₃	308.2220	308.2217	1.04
H11	Unused	Unused	Unused	Unused	Unused
H12	Unused	Unused	Unused	Unused	Unused

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[734] 971-3335
FAX: [734] 971-3640

techserv@caymanchem.com
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Revision History

Revision No.	Date	Reason for Revision
01	05OCT2023	Initial version

Disclaimers

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