

CERTIFICATE of ANALYSIS



Benzodiazepine Analytical Standards Panel

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

Item No.:	26260
Batch No.:	0715958
Size:	100 µg/well
Expiry Date:	25JUL2028 (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 tryptamine and tryptamine-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	0.53 $\pm$ 0.30 ppm	$\pm$ 10 ppm	Yes

Individual results are reported in the table on pages 2-5.

Approval: 

Title: Director of Analytical Chemistry

Certification Date: 25JUL2024

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	α-hydroxy Midazolam	C ₁₈ H ₁₃ ClFN ₃ O	342.0804	342.0803	0.26
A3	Ketazolam	C ₂₀ H ₁₇ ClFN ₂ O ₃	369.1001	369.0997	0.95
A4	3-hydroxy Phenazepam	C ₁₅ H ₁₀ ClFN ₂ O ₂	364.9687	364.9685	0.52
A5	Etizolam	C ₁₇ H ₁₅ ClN ₄ S	343.0779	343.0778	0.20
A6	Alprazolam	C ₁₇ H ₁₃ ClN ₄	309.0902	309.0898	1.13
A7	7-Aminoflunitrazepam	C ₁₆ H ₁₄ FN ₃ O	284.1194	284.1191	0.95
A8	Bromazepam	C ₁₄ H ₁₀ BrN ₃ O	316.0080	316.0078	0.63
A9	Clonazepam	C ₁₅ H ₁₀ ClN ₃ O ₃	316.0484	316.0481	0.79
A10	Pyrazolam	C ₁₆ H ₁₂ BrN ₅	354.03488	354.0348	0.23
A11	Flubromazepam	C ₁₅ H ₁₀ BrFN ₂ O	333.00333	333.0033	0.09
A12	Unused	Unused	Unused	Unused	Unused
B1	Unused	Unused	Unused	Unused	Unused
B2	α-hydroxy Alprazolam	C ₁₇ H ₁₃ ClN ₄ O	325.08507	325.0849	0.52
B3	Diclazepam	C ₁₆ H ₁₂ Cl ₂ N ₂ O	319.03994	319.0399	0.13
B4	4-hydroxy Alprazolam	C ₁₇ H ₁₃ ClN ₄ O	325.0851	325.0849	0.52
B5	Diazepam	C ₁₆ H ₁₃ ClN ₂ O	285.07892	285.0788	0.42
B6	Estazolam	C ₁₆ H ₁₁ ClN ₄	295.0745	295.0744	0.34
B7	Lorazepam	C ₁₅ H ₁₀ Cl ₂ N ₂ O ₂	321.0192	321.0192	0.03
B8	Nordiazepam	C ₁₅ H ₁₁ ClN ₂ O	271.0633	271.0631	0.63
B9	Oxazepam	C ₁₅ H ₁₁ ClN ₂ O ₂	287.0582	287.0580	0.63
B10	Temazepam	C ₁₆ H ₁₃ ClN ₂ O ₂	301.07383	301.0737	0.43
B11	Delorazepam	C ₁₅ H ₁₀ Cl ₂ N ₂ O	305.0243	305.0243	0.03
B12	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)
C1	Unused	Unused	Unused	Unused	Unused
C2	Flunitrazepam	C ₁₆ H ₁₂ FN ₃ O ₃	314.0936	314.0933	0.80
C3	Flurazepam	C ₂₁ H ₂₃ ClFN ₃ O	388.1586	388.1584	0.62
C4	Midazolam	C ₁₈ H ₁₃ ClFN ₃	326.0855	326.0853	0.55
C5	Nitrazepam	C ₁₅ H ₁₁ N ₃ O ₃	282.0873	282.0873	0.07
C6	Flubromazolam	C ₁₇ H ₁₂ BrFN ₄	371.0302	371.0303	0.24
C7	Clonazolam	C ₁₇ H ₁₂ ClN ₅ O ₂	354.0752	354.0750	0.65
C8	Adinazolam	C ₁₉ H ₁₈ ClN ₅	352.1324	352.1321	0.71
C9	Halazepam	C ₁₇ H ₁₂ ClF ₃ N ₂ O	353.0663	353.0661	0.57
C10	Nimetazepam	C ₁₆ H ₁₃ N ₃ O ₃	296.1030	296.1030	0.24
C11	7-Aminonimetazepam	C ₁₆ H ₁₅ N ₃ O	266.1288	266.1286	0.71
C12	Unused	Unused	Unused	Unused	Unused
D1	Unused	Unused	Unused	Unused	Unused
D2	Prazepam	C ₁₉ H ₁₇ ClN ₂ O	325.1102	325.1101	0.37
D3	Desalkylflurazepam	C ₁₅ H ₁₀ ClFN ₂ O	289.0539	289.0539	0.52
D4	N-Desmethyloclobazam	C ₁₅ H ₁₁ ClN ₂ O ₂	287.0582	287.0580	0.63
D5	Cinolazepam	C ₁₈ H ₁₃ ClFN ₃ O ₂	358.0753	358.0750	0.87
D6	Fludiazepam	C ₁₆ H ₁₂ ClFN ₂ O	303.0695	303.0695	0.33
D7	Triazolam	C ₁₇ H ₁₂ Cl ₂ N ₄	343.0512	343.0510	0.52
D8	Nitrazolam	C ₁₇ H ₁₃ N ₅ O ₂	320.1142	320.1139	0.94
D9	Bromazolam	C ₁₇ H ₁₃ BrN ₄	353.0396	353.0396	0.40
D10	Methylclonazepam	C ₁₆ H ₁₂ ClN ₃ O ₃	330.0640	330.0637	0.91
D11	Cloniprazepam	C ₁₉ H ₁₆ ClN ₃ O ₃	370.0953	370.0950	0.81
D12	Unused	Unused	Unused	Unused	Unused

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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	Flunitrazolam	C ₁₇ H ₁₂ FN ₅ O ₂	338.1048	338.1044	1.12
E3	Difludiazepam	C ₁₆ H ₁₁ ClF ₂ N ₂ O	321.0601	321.0600	0.22
E4	Fluclozepam	C ₁₅ H ₁₀ ClFN ₄ S	333.0372	333.0370	0.45
E5	1-demethyl Phenazolam	C ₁₆ H ₁₀ BrClN ₄	372.9850	372.9849	0.29
E6	Flutoprazepam	C ₁₉ H ₁₆ ClFN ₂ O	343.1008	343.1008	0.00
E7	Ethyl Loflazepam	C ₁₈ H ₁₄ ClFN ₂ O ₃	361.0750	361.0746	1.02
E8	Meclonazepam	C ₁₆ H ₁₂ ClN ₃ O ₃	330.0640	330.0637	0.91
E9	Flualprazolam	C ₁₇ H ₁₂ ClFN ₄	327.0807	327.0806	0.40
E10	Phenazolam	C ₁₇ H ₁₂ BrClN ₄	387.0007	387.0005	0.41
E11	8-Aminoclonazepam	C ₁₇ H ₁₄ ClN ₅	324.1011	324.1007	1.08
E12	Unused	Unused	Unused	Unused	Unused
F1	Unused	Unused	Unused	Unused	Unused
F2	Desmethyloclazepam	C ₁₅ H ₁₃ ClN ₂ OS	305.0510	305.0509	0.30
F3	Phenazepam	C ₁₅ H ₁₀ BrClN ₂ O	348.9738	348.9737	0.23
F4	N-Desmethyflunitrazepam	C ₁₅ H ₁₀ FN ₃ O ₃	300.0779	300.0777	0.67
F5	Unused	Unused	Unused	Unused	Unused
F6	Unused	Unused	Unused	Unused	Unused
F7	Unused	Unused	Unused	Unused	Unused
F8	Unused	Unused	Unused	Unused	Unused
F9	Unused	Unused	Unused	Unused	Unused
F10	Unused	Unused	Unused	Unused	Unused
F11	Unused	Unused	Unused	Unused	Unused
F12	Unused	Unused	Unused	Unused	Unused

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Revision History

Revision No.	Date	Reason for Revision
01	25JUL2024	Initial version

Disclaimers

Material Safety Data

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some but not all of the information required for the safe and proper use of this material. Before use, review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

Warranty and Limitation of Remedy

Cayman Chemical Company makes no warranty or guarantee of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have any obligation or liability, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's exclusive remedy and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specification.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver of Buyer of all claims hereunder with respect to said material.

For further details, please refer to our Warranty and Limitations of Remedy located on our website and in our catalog.

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