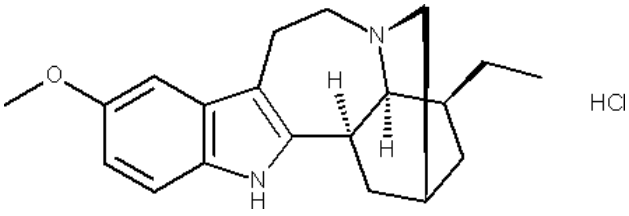
Ibogaine Worldwide Therapy Ltd

Certificate of Analysis

Reference Standard

Ibogaine Hydrochloride



Molecular Formula:	$C_{20}H_{26}N_2O$. HCl
Molecular Weight:	346.89
CAS Number:	5934-55-4

Catalogue Number:	87454/2025
Lot Number:	AP89898
Long-term Storage:	2 to 8 °C, dark
Appearance:	white solid
Melting Point (DSC):	306 °C
Assay 'as is':	99.8 %

Date of shipment: **07/01/2025**

This certificate is valid two years from the date of shipment provided the substance is stored under the recommended conditions unopened in the original container.

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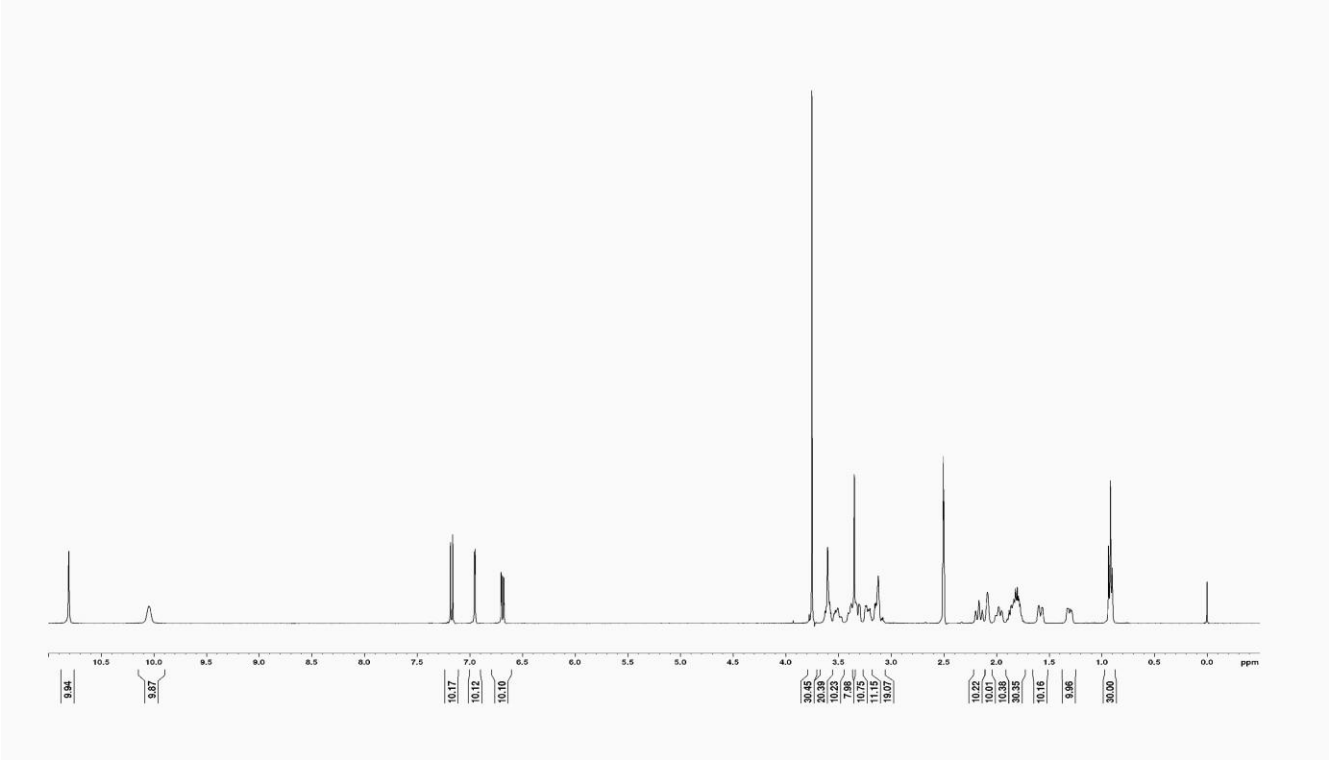
I. Identity

The identity of the reference substance was established by following analyses.

Ia. ^{1}H-NMR Spectrum

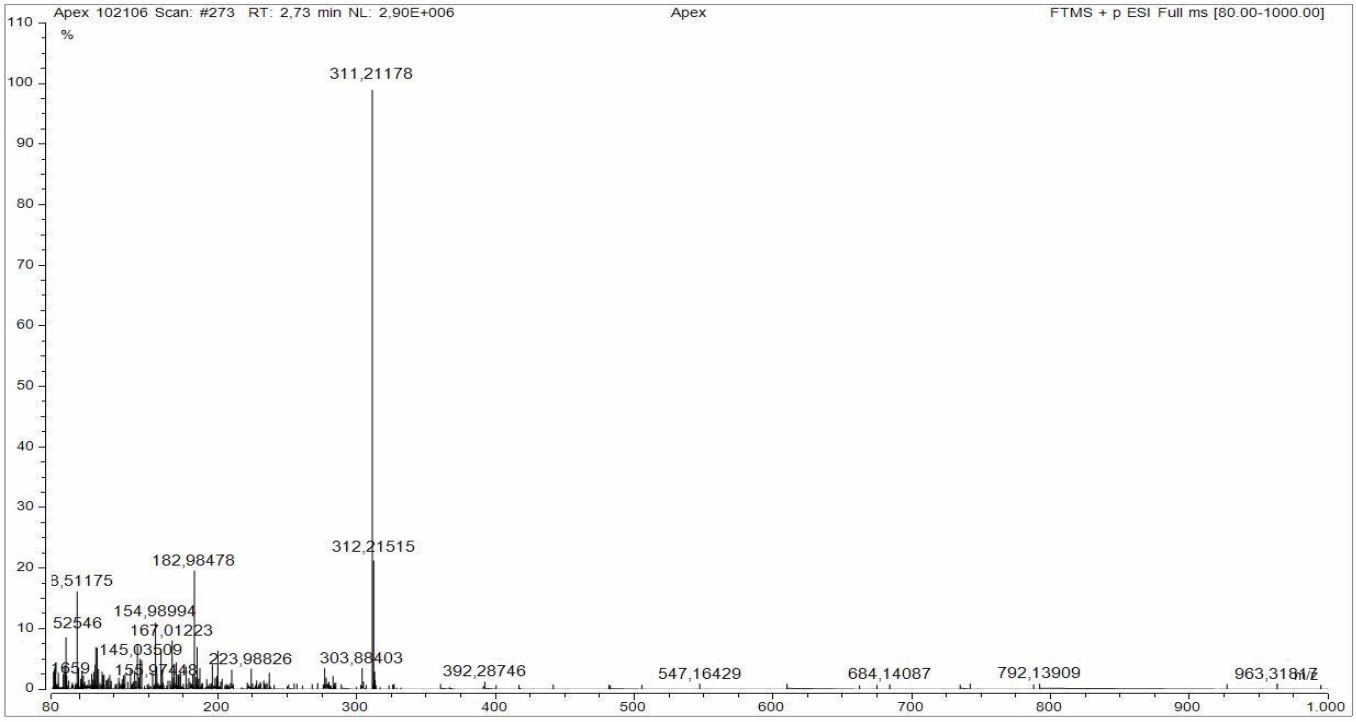
Conditions: 400 MHz, DMSO-d_6



The structure is confirmed by the signals of the spectrum and their interpretation.

Ib. Mass Spectrum

Method: HRMS; 3.5 kV ESI+; capillary temperature: 269 °C

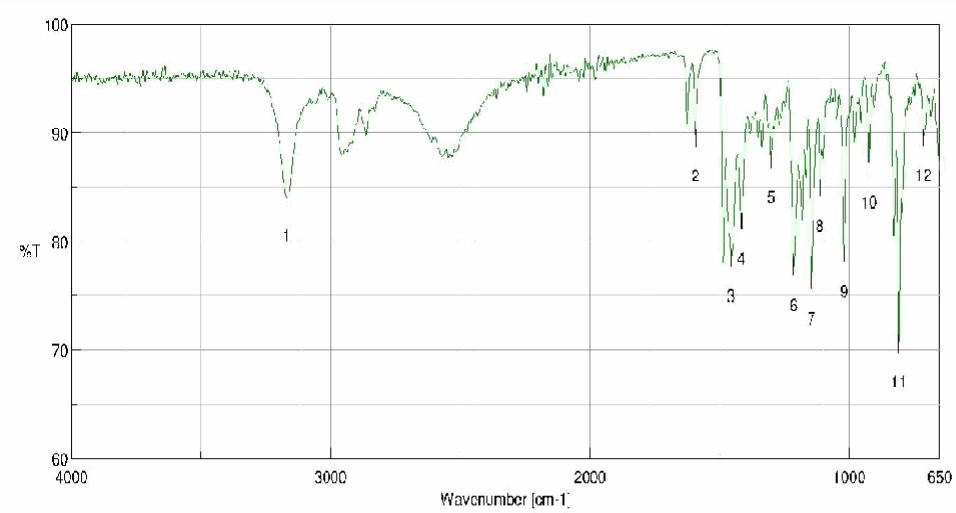


Theoretical value: 311.21179

The signal of the MS spectrum is consistent with the theoretical value and its interpretation is consistent with the structural formula.

Ic. IR Spectrum

Method: Attenuated Total Reflection Fourier Transform Infrared (ATR-FTIR) Spectroscopy



Results of Peak Find

No.	Position	Intensity
1	3170.4	83.9518
2	1591.95	89.467
3	1455.03	78.4572
4	1415.49	81.9098
5	1300.75	87.5589
6	1213.01	77.6049
7	1144.55	76.3699
8	1111.76	84.9448
9	1019.19	78.8863
10	922.771	87.1163
11	808.028	70.5261
12	712.569	89.5433

The signals of the IR spectrum and their interpretation are consistent with structural formula.

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II. Purity

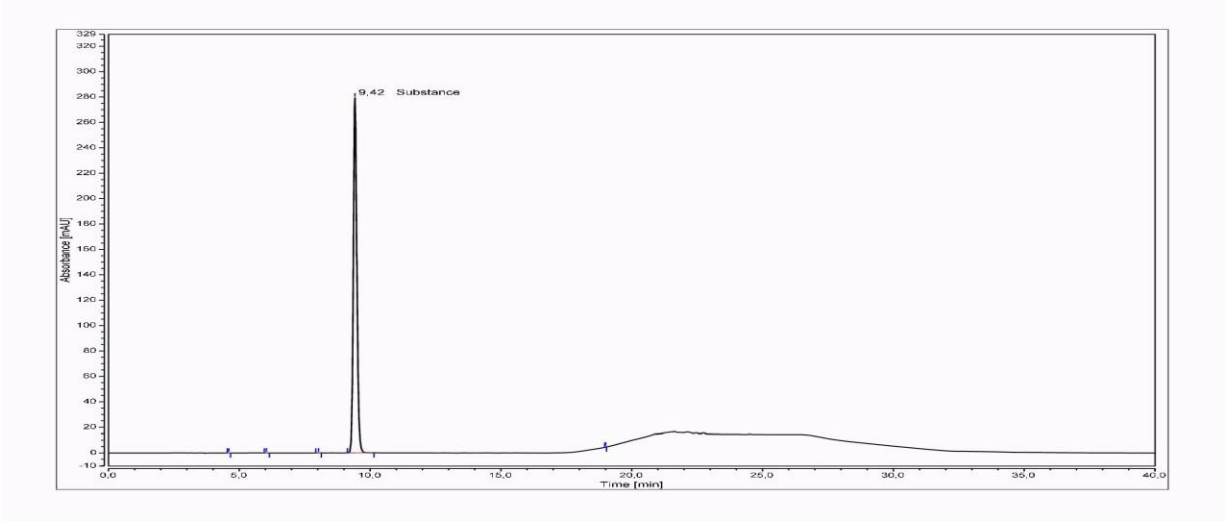
IIa. High Performance Liquid Chromatography (HPLC)

The purity of the reference substance was analysed by high performance liquid chromatography (HPLC).

HPLC Conditions:

Column:	**Conditions:**	**Detector:**	**Injector:**
Pack CN 5 µm, 250 x 4.6 mm	1.00 ml/min, 40 °C mob. Phase A: Water, 0.1 % H_3 PO_4 mob. Phase B: Acetonitrile, 0.1 % H_3 PO_4	DAD 225 nm	Auto 1 µl; 0.107 mg/ml in Acetonitrile/Water 50/50 (v/v)

0-13	min	A/B		80/20	
13-18	min	A/B	to	30/70	
18-23	min	A/B		30/70	
23-28	min	A/B	to	80/20	
28-40	min	A/B		80/20	(v/v)



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Area Percent Report - Sorted by Signal

Pk#	Retention Time	Area	Area %
1	4.602	0.0022	0.01
2	6.040	0.0040	0.01
3	8.028	0.0081	0.02
4	9.420	43.8857	99.96
5	19.005	0.0052	0.01
Totals		**43.9052**	**100.00**

For the calculation the system peaks were ignored. The content of the analyte was determined as the ratio of the peak area of the analyte and the cumulative areas of the purities, added up to 100 %.

Results:	
Average	99.95 %
Number of results	n=6
Standard deviation	0.01 %

IIb. Water Content

Method: Karl Fischer titration

Results:	
Average	0.11 %
Number of results	n=3
Standard deviation	0.01 %

IIc. Residual Solvents

Method: ^{1}H-NMR

No significant amounts of residual solvents were detected (< 0.05 %).

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III. Final Result

Chromatographic purity (HPLC)	99.95 %
Water content	0.11 %
Residual solvents	No significant amounts of residual solvents were detected (< 0.05 %)
Assay (100 % method)[1]	99.84 %

The assay is assessed to be 99.8 % ‘as is’

The assay 'as is' is equivalent to the assay based on the not anhydrous and not dried substance respectively.

[1] The calculation of the 100 % method follows the formula:

$$\text{Assay (\%)} = (100\ \% - \text{volatile contents}) \ * \ \frac{\text{Purity (\%)}}{100\%}$$

Volatile contents are considered as absolute contributions, purity is considered as relative contribution