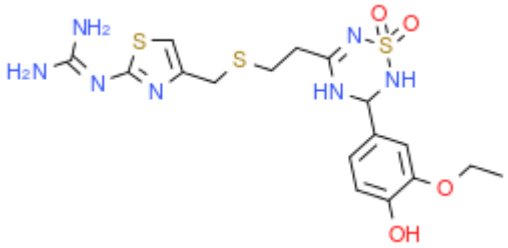
Our Formula. Your Success.

Reference Material Product Information Sheet

Epichem's Quality System conforms to ISO9001:2015 as certified by ECAAS Pty Ltd - Certification number 616061.



Name	Famotidine ethyl vanillin adduct
BP/EP Name	Not applicable.
USP Name	Not applicable.
Synonym(s)	Not applicable.
Epichem Item #	EPL-AA287 Batch 1
CAS #	Not available.
Molecular Formula	$C_{17}H_{23}N_7O_4S_3$
Molecular Weight	485.61 g/mol
Appearance	Off-white powder
Melting Point	126.8-135.2°C (decomposition)
Combustion Analysis	Required (%): C:42.0; H:4.8; N:20.2, S:19.8. Found (%): C:40.0; H:5.7; N:19.5, S:18.9.
Purity	94.0%
Date of Manufacture	30 September 2022
Storage Requirements	Protect from heat, light and moisture.
Special Precautions	**This compound is for laboratory use only. Its toxicological properties may not have been fully established. It should be handled only by suitably qualified personnel.**
Intended Use	This compound is suitable for the identification of impurities and degradants in pharmaceutical materials. The purity assay is considered as relative contribution.
Date of Shipment	TBA
	This certificate is valid for one year from the date of shipment provided the substance is unopened and stored under the recommended conditions.
Retest Date	TBA (Proper Storage and Handling Required)

EPL-AA287 Batch 1

Epichem Pty Ltd, Suite 5, 3 Brodie-Hall Drive, Bentley WA 6102, Australia
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I. Identity

The identity of this product was established using the following analyses:

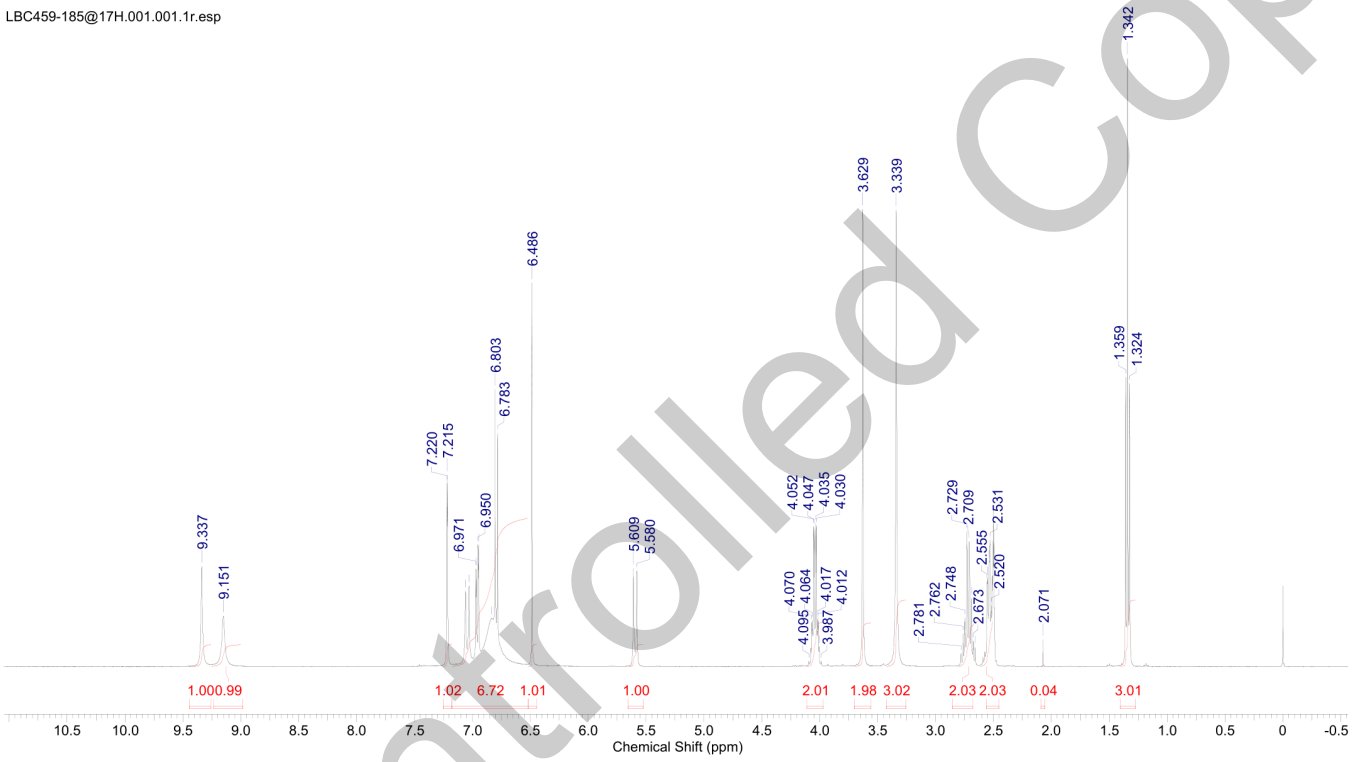
Ia. ^{1}HNMR Spectrum

Conditions: 400 MHz, DMSO-d_6

^{1}H NMR spectrum consistent with chemical structure.

Acquisition Time (sec)	3.7547	***Comment***	LBC459-185@17H 1H DMSO {E:\dataexternal\epichem} cygoh 10				
Date	10 Aug 2022 17:36:00			***Date Stamp***	10 Aug 2022 17:36:00		
File Name	\\NAPHTHALENE\Company\NMR files\LBC459\LBC459-185@17H\1\pdata\1\1r					***Frequency (MHz)***	400.13
Nucleus	1H	***Number of Transients***	8	***Origin***	spect	***Original Points Count***	24038
Owner	nmr	***Points Count***	32768	***Pulse Sequence***	zg	***Receiver Gain***	90.50
SW(cyclical) (Hz)	6402.05	***Solvent***	DMSO-d6	***Spectrum Offset (Hz)***	2797.8682	***Spectrum Type***	STANDARD
Sweep Width (Hz)	6401.85	***Temperature (degree C)***	24.996				

LBC459-185@17H.001.001.1r.esp



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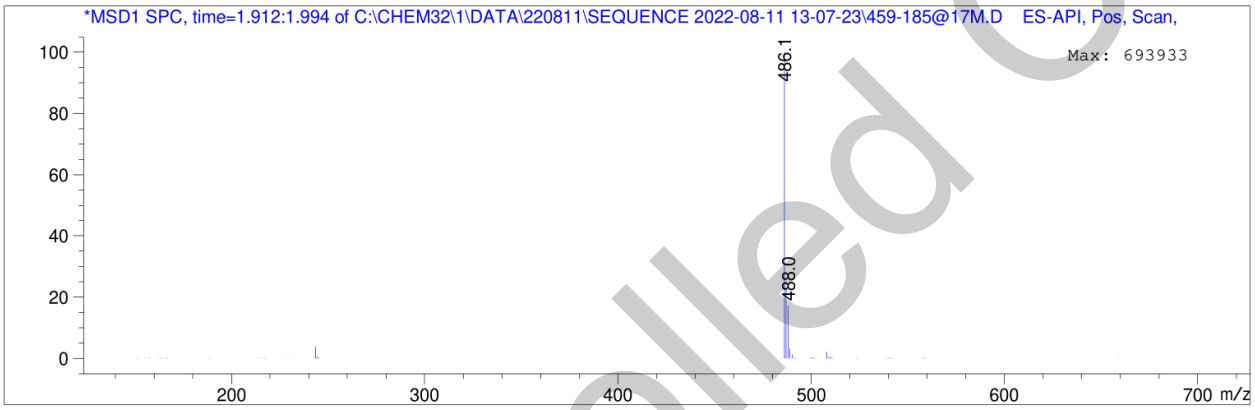
Ib. Mass Spectrum

The mass spectrum of this material was analysed by Liquid Chromatography Mass Spectroscopy (LCMS) using in-house EM005.WI08.

Method: ACN/water gradient (+ 0.1% formic acid).

ZORBAX SB-C8, 4.6 x 30 mm, 3.5 micron.

Retention Time (MS)	MS Area	Mol. Weight or Ion
1.949	8551453	488.05 I
		487.05 I
		486.10 I
2.263	70510	622.20 I
		621.20 I
		620.00 I
		310.75 I



Theoretical value: 486.1 [M+H]+.

The signal of the Mass Spectrum is consistent with the theoretical value and its interpretation is consistent with the structural formula.

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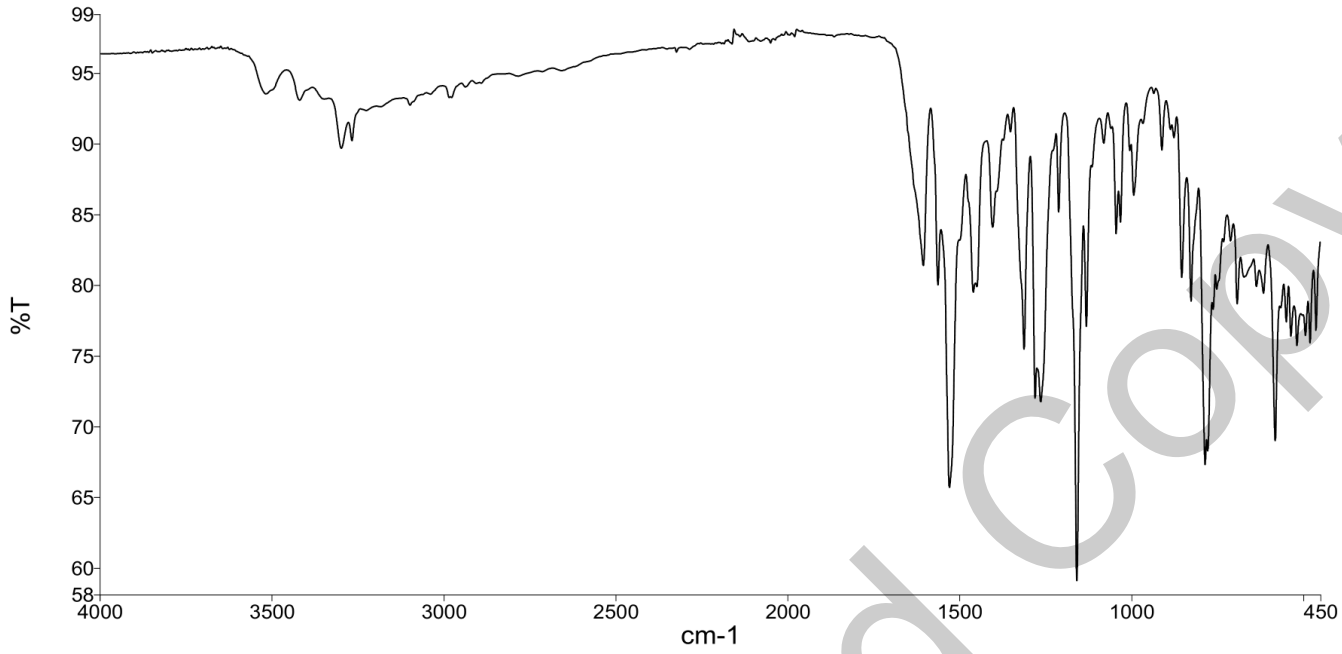
Ic. IR Spectrum

The infra-red spectrum of this material was analysed by Fourier-Transform Infrared Spectroscopy (FTIR) using in-house EM005.WI09.



The interpretation of the signals of the Fourier-Transform Infrared Spectrum is consistent with the structural formula.

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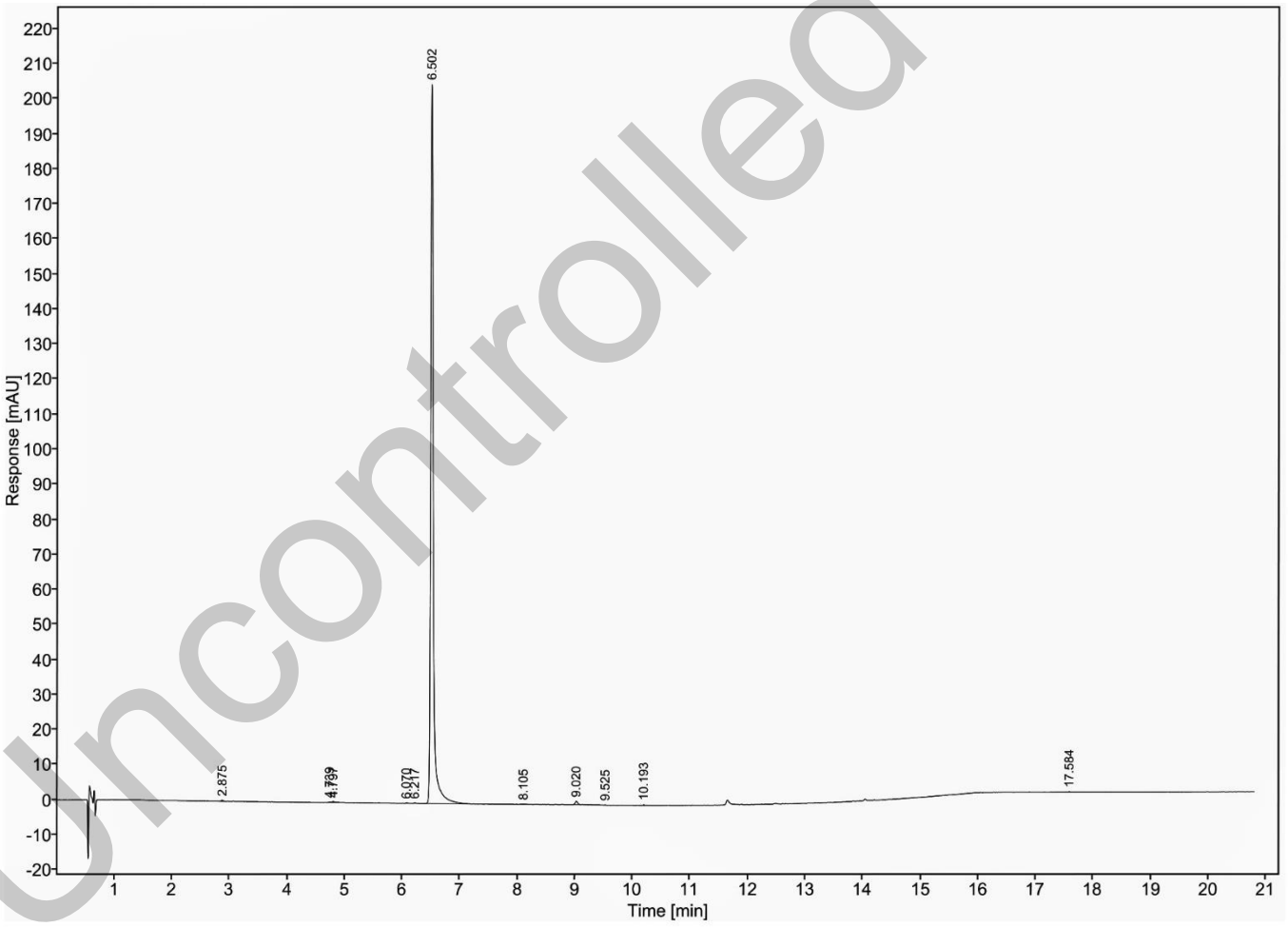
II. Purity

The purity of this material was analysed by high performance liquid chromatography (HPLC) using in-house EM005.WI07.

HPLC Conditions:

Column	Conditions				Detector	Injector
Agilent Poroshell 120 EC-C18 4.6 x 50mm 2.7 micron	35ºC				DAD 270nm	Auto 1.0 µL 0.5 mg/mL in 100% methonol (NO MODIFIERS)
	Time (min)	% Line A (Water + 0.1% (v/v) TFA)	% Line B (Acetonitrile + 0.1% (v/v) TFA)	Flow rate (mL/min)		
	0.00	95	5	1.0		
	8.00	71	29	1.0		
	14.60	5	95	1.0		
	19.60	5	95	1.0		
	20.60	95	5	1.0		
	23.60	95	5	1.0		



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Area Percent Report – Sorted by Signal

Peak Number	Retention Time (rounded)	Area	Area % (rounded)
1	2.87	0.74	0.11
2	4.74	0.41	0.06
3	4.80	0.98	0.15
4	6.07	0.29	0.07
5	6.22	0.37	0.06
6	6.50	655.52	99.06
7	8.10	0.19	0.03
8	9.02	2.84	0.43
9	9.53	0.08	0.01
10	10.19	0.21	0.03
11	17.58	0.14	0.02
Totals			100 (rounded)

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

Results:

Average 99.1% (average of 10 duplicate analyses)

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III. Water Content

Method: Karl-Fischer titration using in-house EM005.WI04.

Results:

Average 4.7%

IV. Ash Content

Method: BP 2022 Appendix XI J. Ash Method II

Result:

Contains 0.3% ash.

V. Residual Solvents

Method: ^{1}HNMR

Result:

Contains 0.1% acetonitrile by ^{1}H NMR analysis.

VI. Final Result

Chromatographic purity (HPLC)	99.1%
Water content	4.7%
Ash content	0.3%
Residual solvents	0.1%
Purity	94.0%

This purity is assessed to be 94.0%.

Product Reviewed By:

James Rixson, PhD
Head of Production

Product Released By:

Carol Worth, PhD
Quality Manager

Release Date: 4 November 2022

The calculation of the purity follows the formula:

$$\text{Purity}(\%) = \frac{((\text{Chromatographicpurity[HPLC]})x(100 - (\text{watercontent} + \text{ashcontent} + \text{volatilecontents})))}{100}$$

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