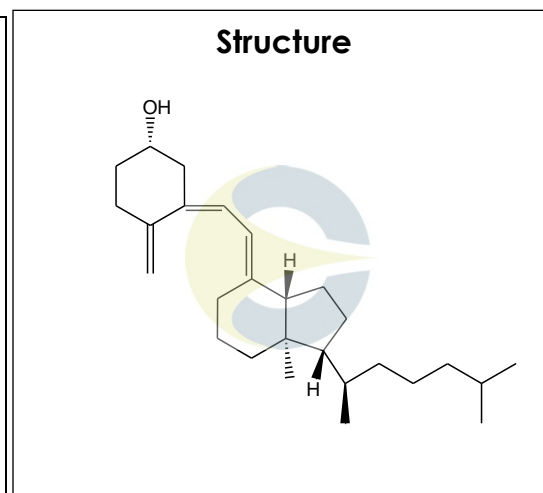


**Certificate of Analysis**
*For Laboratory Use Only*

<b>PRODUCT NAME</b>	Vitamin D3 (Cholecalciferol)
<b>PART NUMBER</b>	00022774
<b>STANDARD TYPE</b>	Primary (P)
<b>LOT NUMBER</b>	00022774-454
<b>REPORT NUMBER</b>	CDXA-RSS-6774-01
<b>SAMPLE NUMBER</b>	CDXA-15-007285
<b>DATE OF SAMPLE</b>	09/10/2015
<b>DATE OF RE-EVALUATION</b>	02/11/2020
<b>DATE OF REPORT</b>	02/25/2020



<b>CHEMICAL NAMES</b>	(3 $\beta$ ,5Z,7E)-9,10-Secocholesta-5,7,10(19)-trien-3-ol; Calcilol; Colecalciferol; Delsterol; Deparal; Quintox; Ricketon; Vigorsan
<b>CHEMICAL FORMULA</b>	C <sub>27</sub> H <sub>44</sub> O
<b>MOLECULAR WEIGHT (MW)</b>	384.64
<b>CHEMICAL FAMILY</b>	Vitamins
<b>CAS NUMBER</b>	[67-97-0]
<b>EC#(EINECS)</b>	200-673-2
<b>RTECS</b>	VS2900000

**ANALYTICAL RESULTS**

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	NA	99.6%
HPLC	0.700.10.2.METH22	NA	99.6%
NMR	99.1-CD-1.0-000122	Conforms to structure	Conforms to structure
Mass Spectrum	Direct Infusion, ESI (+)	Conforms	Conforms
Residual Solvent	99.1-CD-8.0-000115	NA	ND
Water	0.700.12.37	NA	ND
Appearance	NA	NA	White powder

ADJUSTED PURITY: 99.6% IS BASED ON (100 - 0.0 SOLVENTS - 0.0 WATER) X 99.6% HPLC

**STORAGE CONDITIONS**

<b>STORAGE</b>	+4 °C in a dry place.
<b>EXPIRATION DATE</b>	02/2025 under the above conditions.

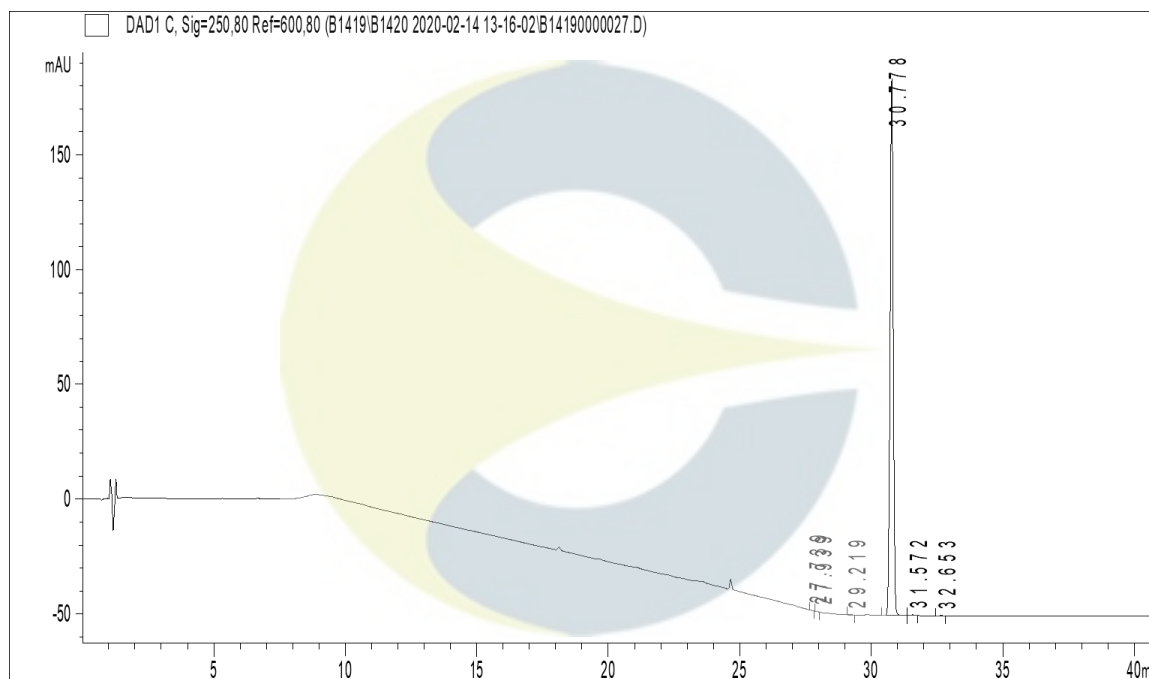
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**ANALYTICAL CONDITIONS**

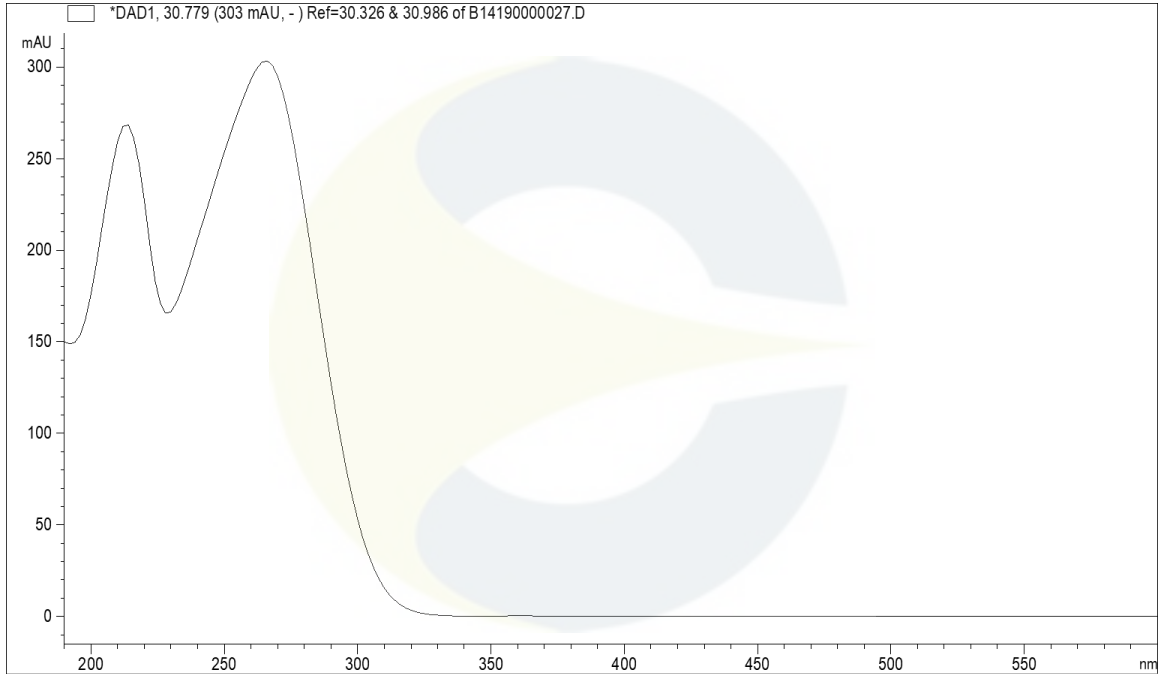
<b>INSTRUMENT</b>	AGILENT 1260 HPLC UV-VIS (DAD) CONNECTED TO DIONEX CORONA VEO CHARGED AEROSOL DETECTOR (CAD); AB-SCIEX 6600 TRIPLE TOF
<b>COLUMN</b>	Phenomenex Luna C18(2) 150 x 2.00 mm, 5 µm particle size
<b>MOBILE PHASE</b>	A - 0.1% Trifluoroacetic acid in Ultrapure water, B - Acetonitrile; Isocratic 5% B for 5 minutes, then increasing to 95% B over 20 minutes. Hold at 95% B for 15 minutes.
<b>COLUMN TEMP.</b>	60 °C
<b>FLOW RATE</b>	0.4 mL/minute
<b>INJECTION VOL.</b>	0.4 µL
<b>INJECTION CONC.</b>	1.0 mg/mL in Methanol
<b>DETECTION</b>	250 ± 40 nm

**HPLC CHROMATOGRAM OF VITAMIN D3 (CHOLECALCIFEROL) (CDXA-15-007285)**


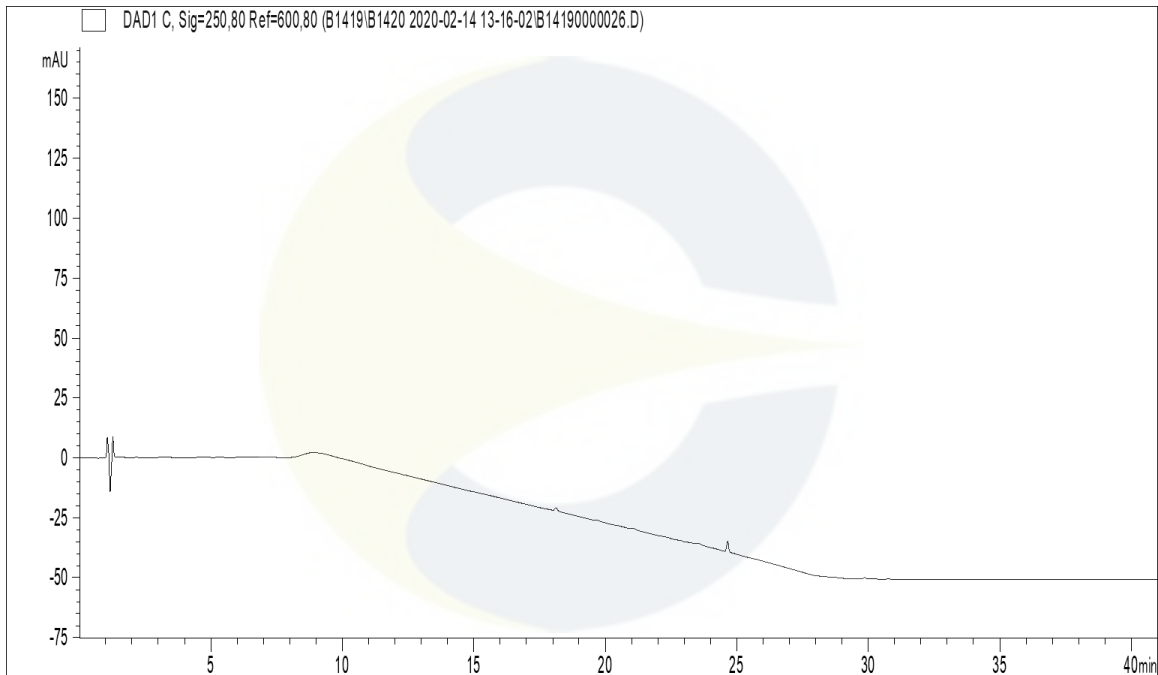
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**UV SPECTRUM AT RT = 30.8 MINUTES**

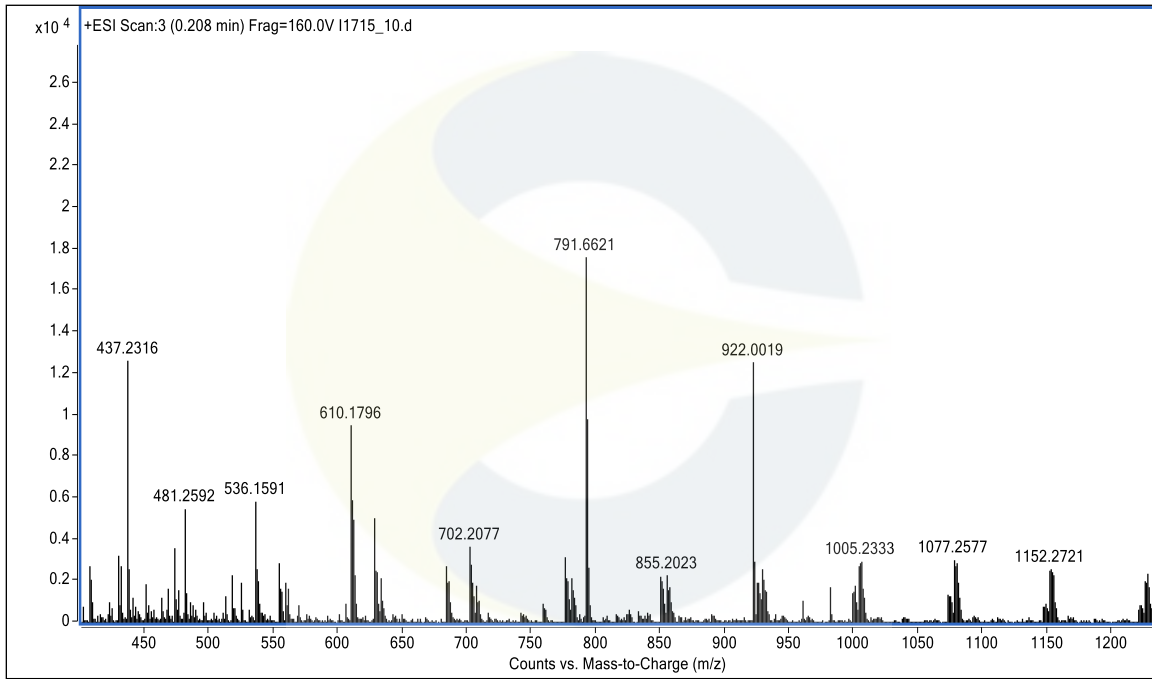


**HPLC CHROMATOGRAM OF DILUENT BLANK**

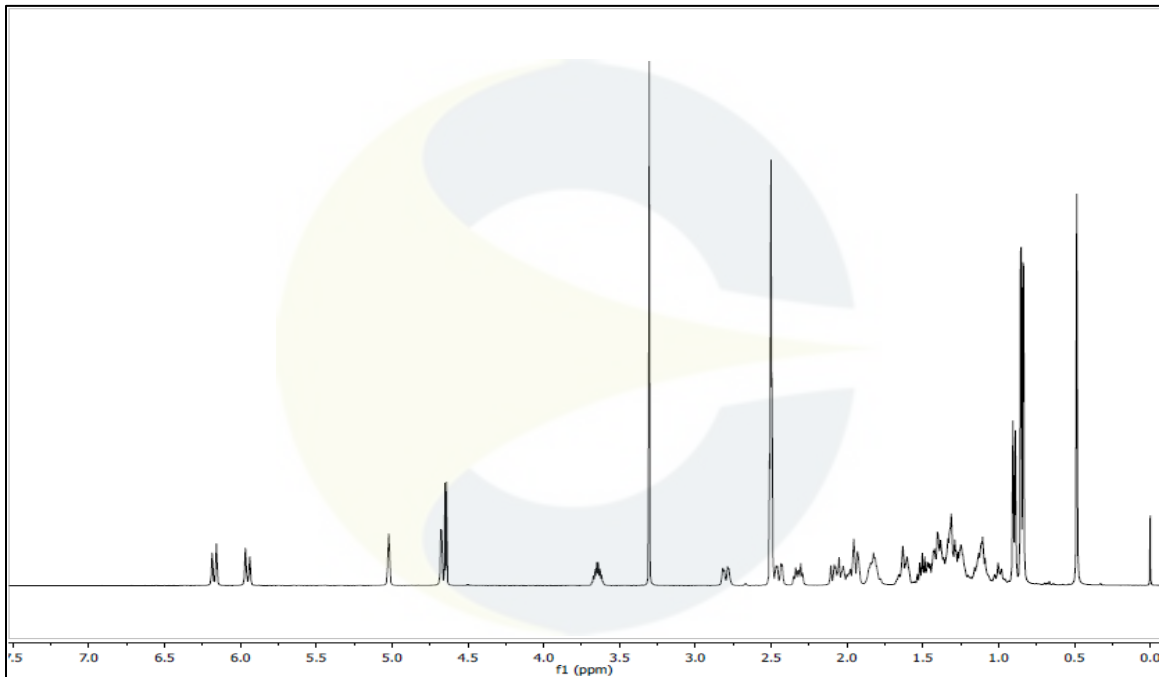


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**MASS SPECTRUM OF VITAMIN D3 (CHOLECALCIFEROL) (CDXA-15-007285)**

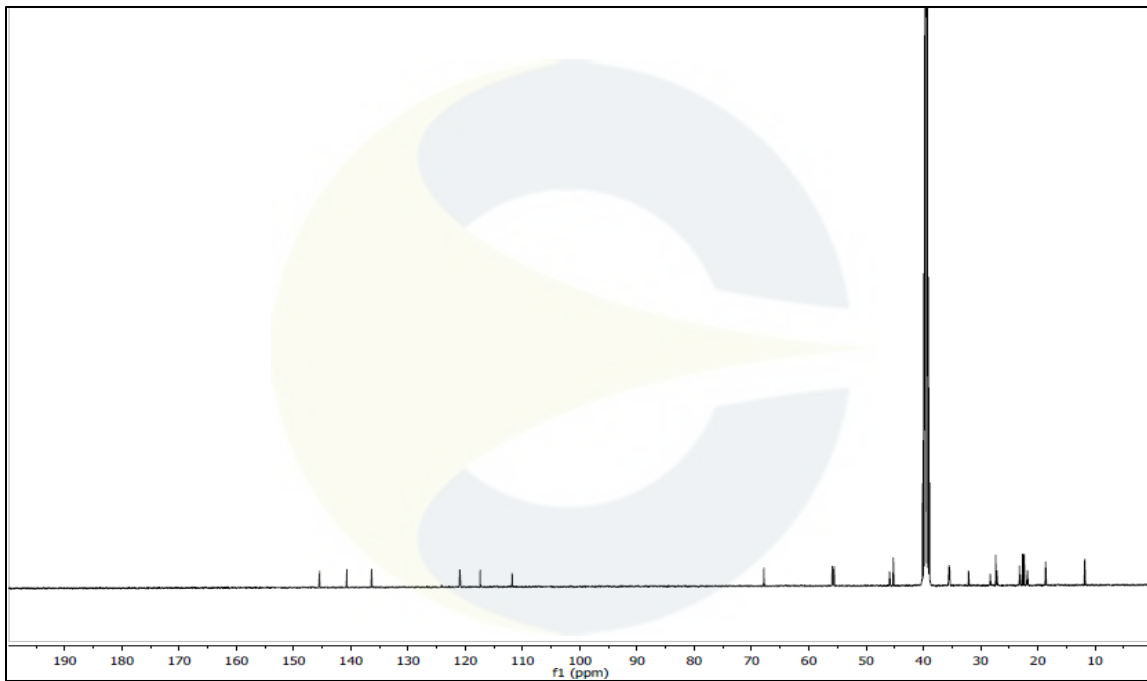


**<sup>1</sup>H-NMR SPECTRUM OF VITAMIN D3 (CHOLECALCIFEROL) (CDXA-15-007285) IN DMSO-d<sub>6</sub>**

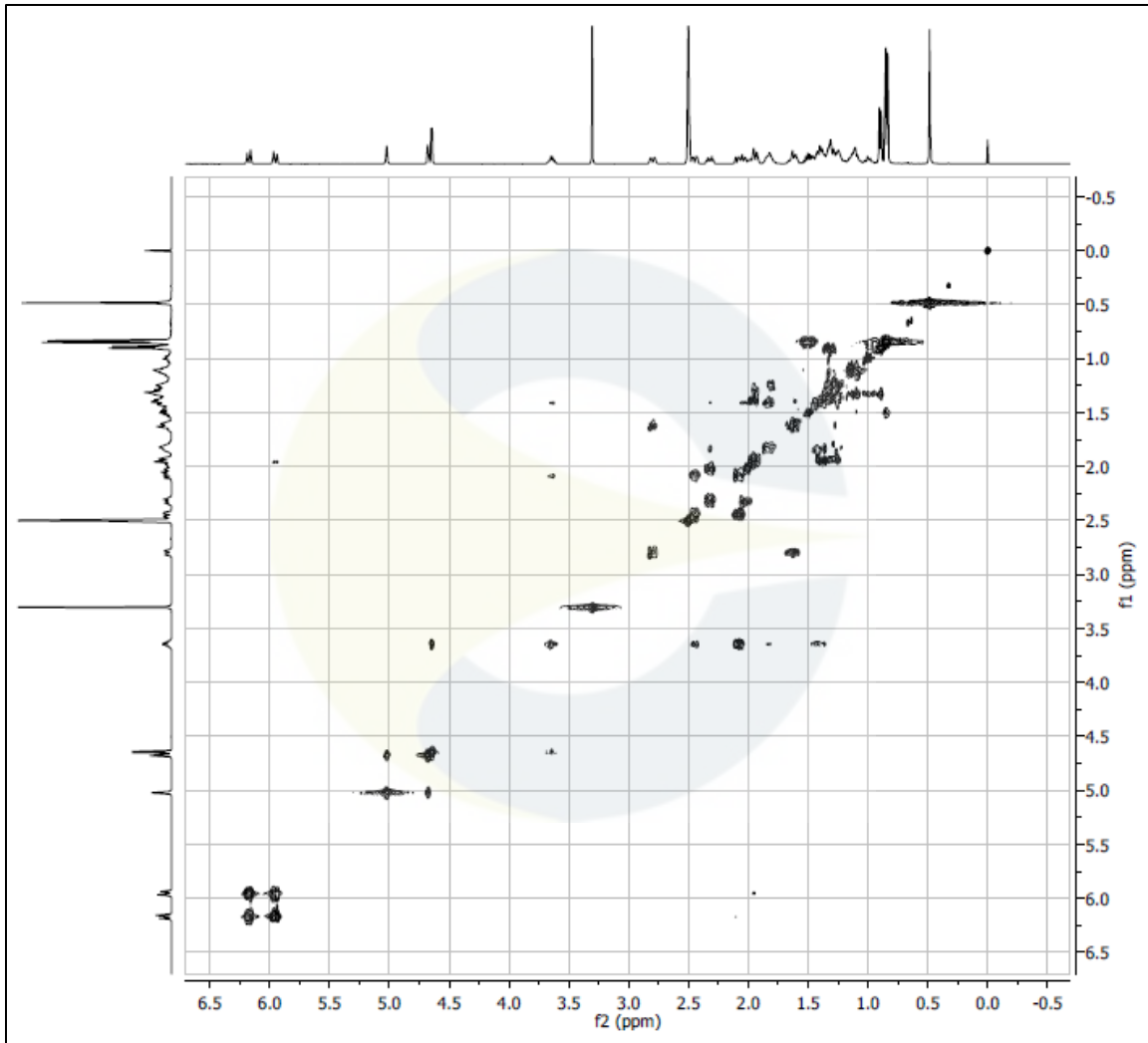


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<sup>13</sup>C-NMR SPECTRUM OF VITAMIN D3 (CHOLECALCIFEROL) (CDXA-15-007285) IN DMSO-d<sub>6</sub>



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**COSY-NMR SPECTRUM OF VITAMIN D3 (CHOLECALCIFEROL) (CDXA-15-007285) IN DMSO-*d*<sub>6</sub>**

**REVISION HISTORY**

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	10/08/2015	New report
01	02/25/2020	Passed re-evaluation by HPLC, KF. Updated expiration date, analytical conditions, chromatograms and results. Removed melting point.

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