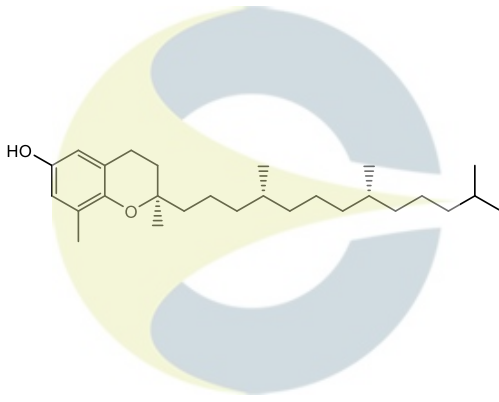


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PRODUCT NAME	D-delta-Tocopherol	Structure 
PART NUMBER	00020314	
STANDARD TYPE	Primary (P)	
LOT NUMBER	00020314-401	
REPORT NUMBER	CDXA-RSS-7971-01	
SAMPLE NUMBER	CDXP-18-00353	
DATE OF SAMPLE	04/13/2018	
DATE OF RE-EVALUATION	03/11/2022	
DATE OF REPORT	04/08/2022	

CHEMICAL NAMES	(2R)-3,4-Dihydro-2,8-dimethyl-2-((4R,8R)-4,8,12-trimethyltridecyl)-2H-1-benzopyran-6-ol; δ-Vitamin E
CHEMICAL FORMULA	C ₂₇ H ₄₆ O ₂
MOLECULAR WEIGHT (MW)	402.65
CHEMICAL FAMILY	Vitamins
CAS NUMBER	[119-13-1]
EC#(EINECS)	204-299-0
RTECS	NA

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	≥ 85%	86.3%
HPLC	0.700.10.2.METH38	≥ 90%	93.2%
NMR	99.1-04-2.0-000122	Conforms to structure	Conforms to structure
Mass Spectrum	99.1-04-3.0-000126	Conforms	Conforms
Residual Solvent*	99.1-CDXA-3.0-000621	NA	n-Hexanes – 3.7% EtOAc – 3.7%
Water	0.700.12.37	NA	ND
Appearance	NA	NA	Yellow Oil

*Testing performed at an ISO 17025 accredited subcontracted laboratory.

ADJUSTED PURITY: 86.3% IS BASED ON (100 - 7.4 SOLVENTS - 0.0 WATER) X 93.2% HPLC

STORAGE CONDITIONS

STORAGE	+4 °C in a dry place.
EXPIRATION DATE	03/2027 under the above conditions.

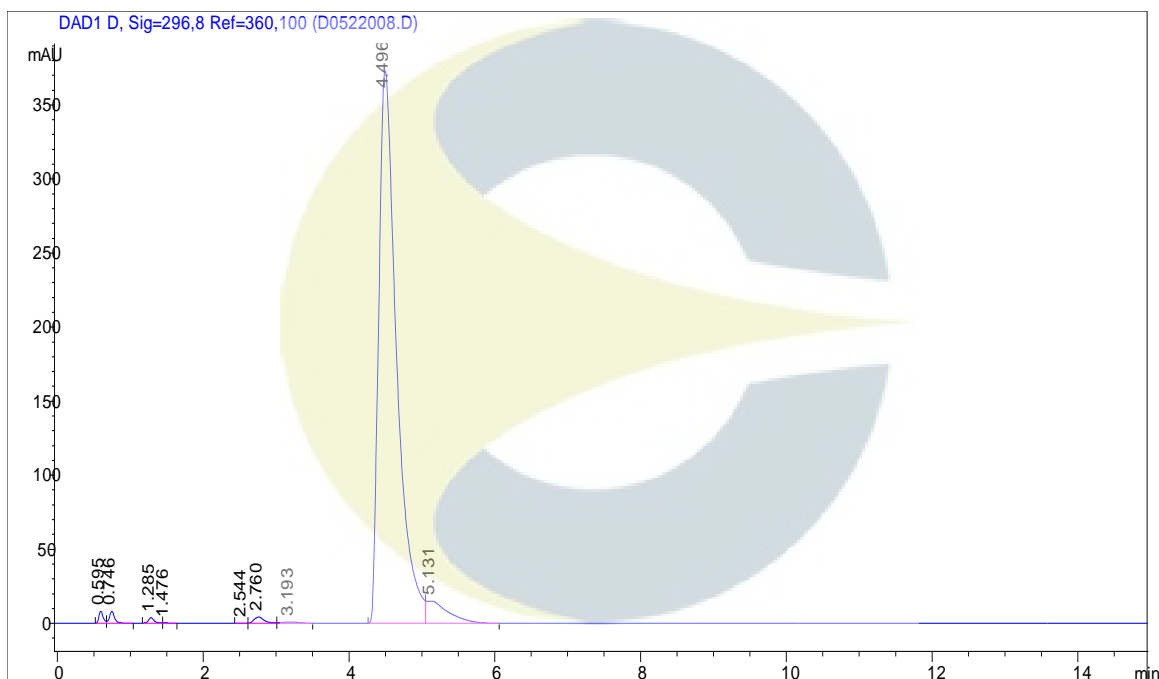
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ANALYTICAL CONDITIONS

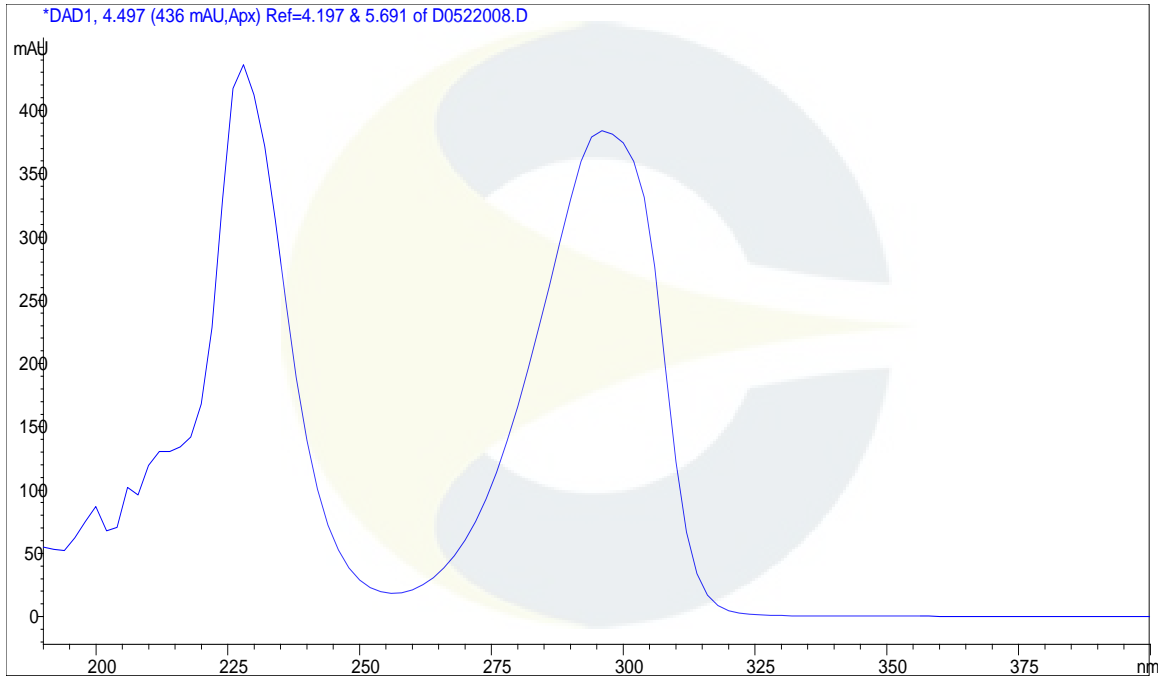
INSTRUMENT	AGILENT 1100 HPLC UV-VIS (DAD); AB-SCIEX 6600 TRIPLE TOF
COLUMN	Phenomenex Luna – 150 x 2 mm, 3 µm particle size;
MOBILE PHASE	A – 0.2% IPA and 0.8% Acetic acid in n-Hexane; Isocratic 100% A for 30 minutes.
COLUMN TEMP.	35 °C
FLOW RATE	0.8 mL/minute
INJECTION VOL.	10 µL
INJECTION CONC.	1.0 mg/mL in n-Hexane
DETECTION	296 ± 4 nm

HPLC CHROMATOGRAM OF D-DELTA-TOCOPHEROL (CDXP-18-00353)


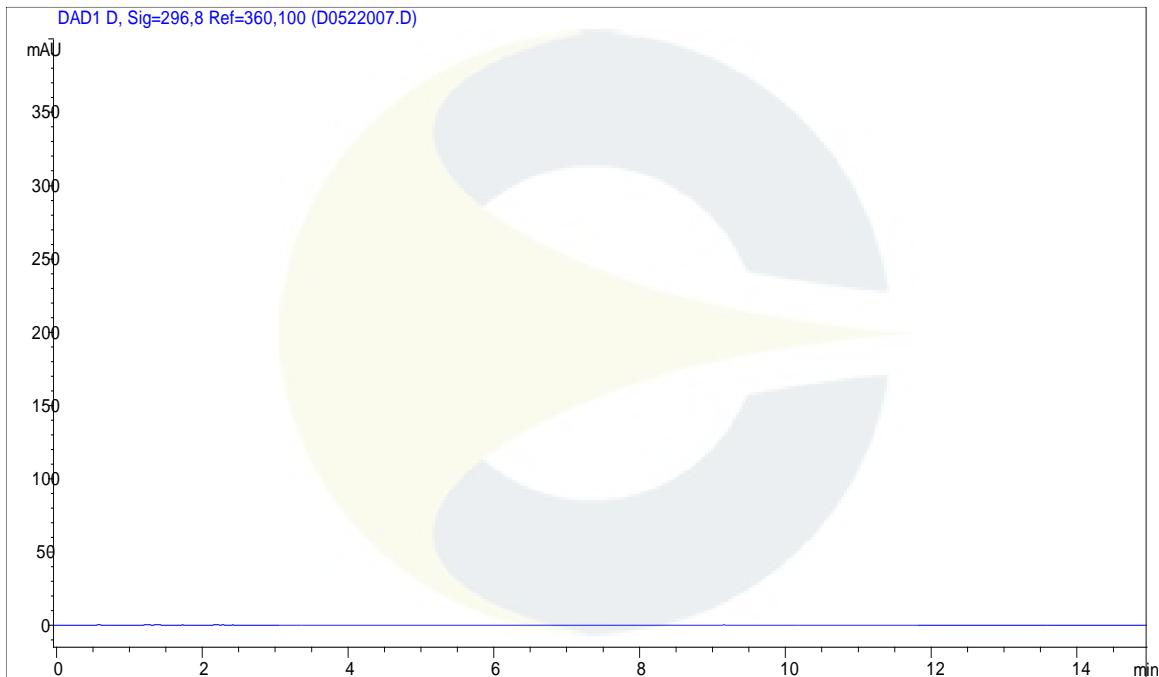
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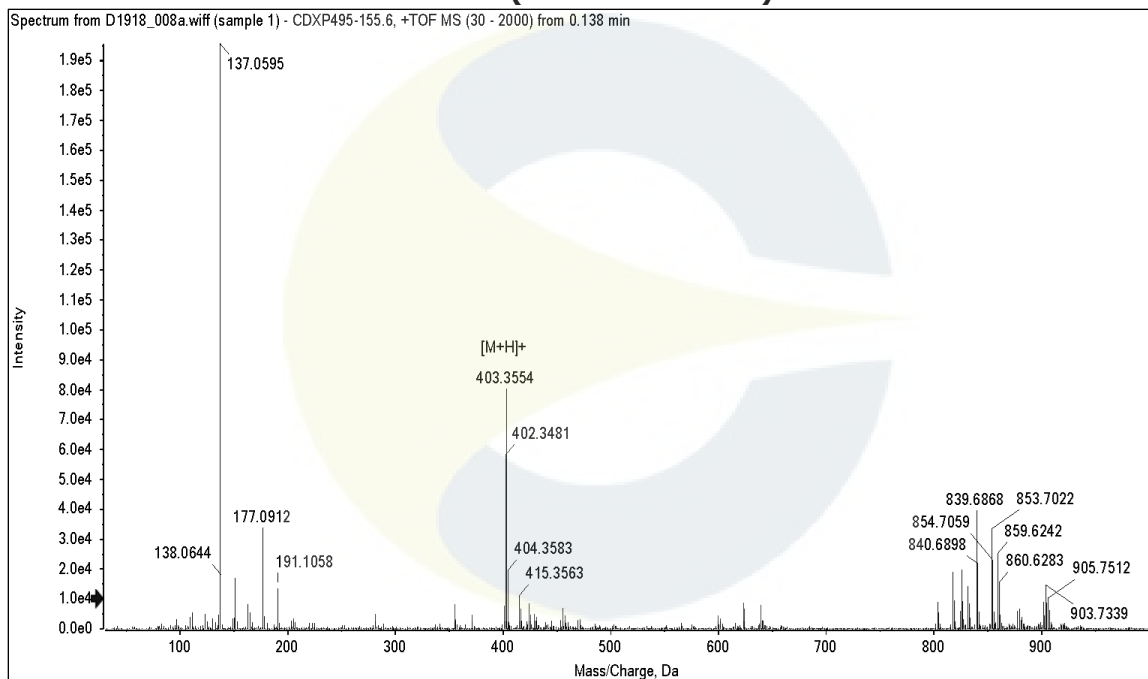
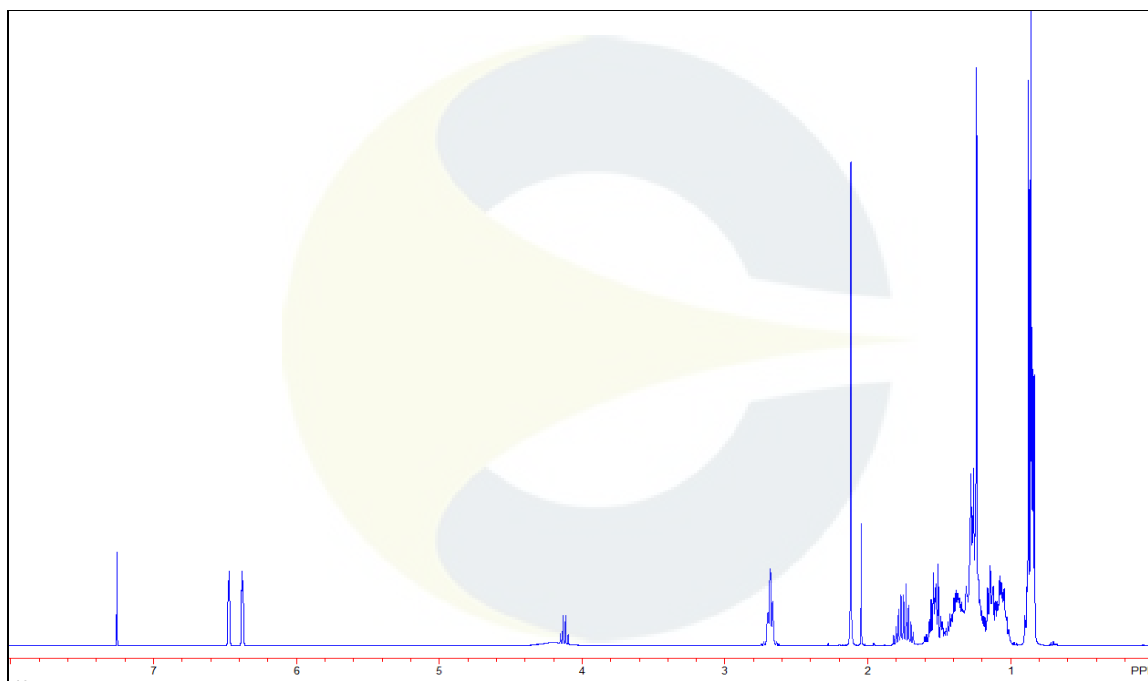
UV SPECTRUM AT RT = 4.5 MINUTES



HPLC CHROMATOGRAM OF DILUENT BLANK

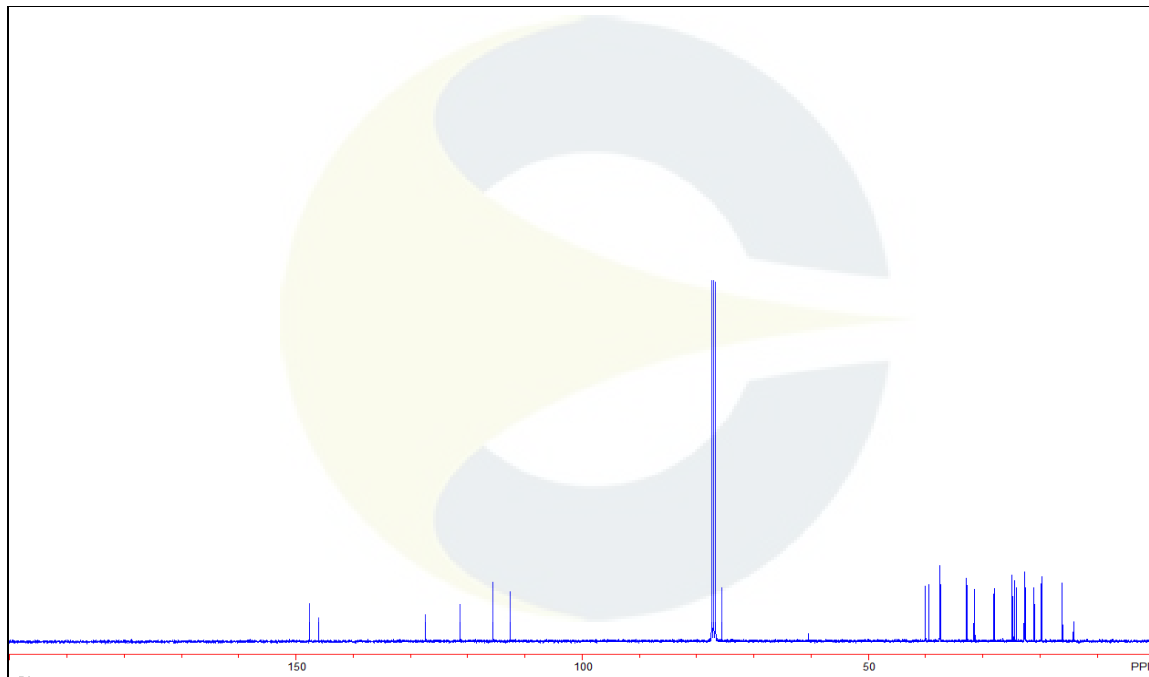


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MASS SPECTRUM OF D-DELTA-TOCOPHEROL (CDXP-18-00353)

¹H-NMR SPECTRUM OF D-DELTA-TOCOPHEROL (CDXP-18-00353) IN CDCl₃


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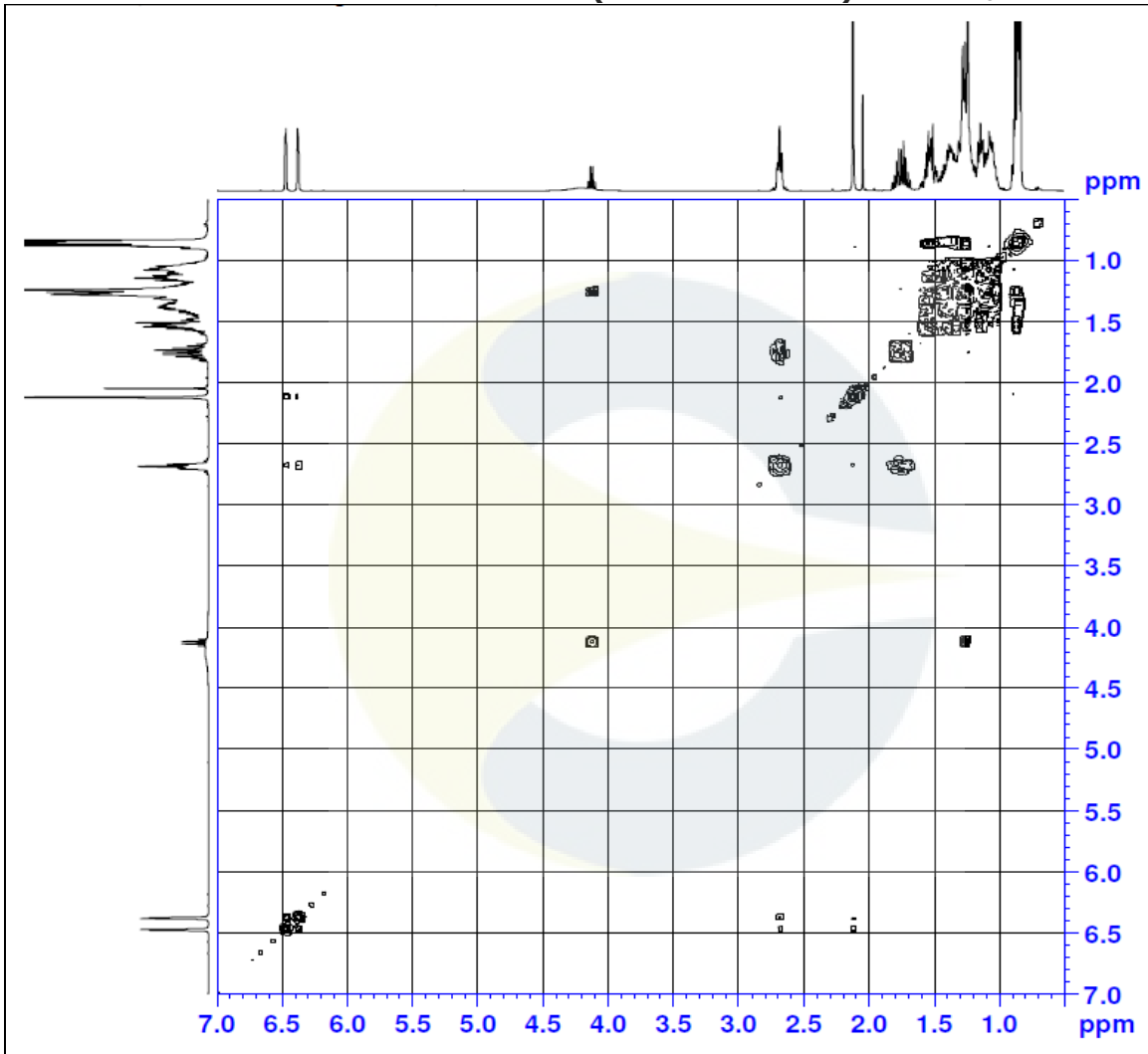
¹³C-NMR SPECTRUM OF D-DELTA-TOCOPHEROL (CDXP-18-00353) IN CDCl₃



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COSY-NMR SPECTRUM OF D-DELTA-TOCOPHEROL (CDXP-18-00353) IN CDCl₃



REVISION HISTORY

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	05/11/2018	New report
01	04/08/2022	Passed re-evaluation by HPLC, KF. Updated expiration date, analytical conditions, chromatograms and results. Added UV data.

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