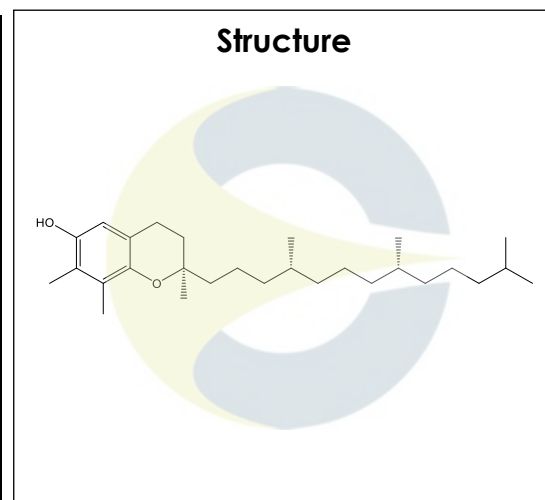


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PRODUCT NAME	D-gamma-Tocopherol
PART NUMBER	00020313
STANDARD TYPE	Primary (P)
LOT NUMBER	00020313-315
REPORT NUMBER	CDXA-RSS-7128-03
SAMPLE NUMBER	CDXP-16-004639
DATE OF SAMPLE	04/12/2016
DATE OF RE-EVALUATION	07/01/2020
DATE OF REPORT	08/06/2020



CHEMICAL NAMES	(2R)-3,4-Dihydro-2,7,8-trimethyl-2-((4R,8R)-4,8,12-trimethyltridecyl)-2H-1-benzopyran-6-ol; γ -Tocopherol
CHEMICAL FORMULA	C ₂₈ H ₄₈ O ₂
MOLECULAR WEIGHT (MW)	416.68
CHEMICAL FAMILY	Tocopherols
CAS NUMBER	[54-28-4]
EC#(EINECS)	200-201-5
RTECS	NA

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	NA	96.4%
HPLC	99.1-CDXA-4.0-000305	NA	96.8%
NMR	4.5.3-CD-4.0-000338	Conforms to structure	Conforms to structure
Mass Spectrum	Direct Infusion: ESI (-)	Conforms	Conforms
Residual Solvent	99.1-CD-8.0-000115	NA	EtOAc: 0.3 %; n-Hexane: 0.1%
Water	0.700.12.37	NA	ND
Appearance	NA	NA	Yellow oil

ADJUSTED PURITY: 96.4% IS BASED ON (100 - 0.4 SOLVENTS - 0.0 WATER) X 96.8% HPLC

STORAGE CONDITIONS

STORAGE	+4 °C in a dry place.
EXPIRATION DATE	07/2025 under the above conditions.

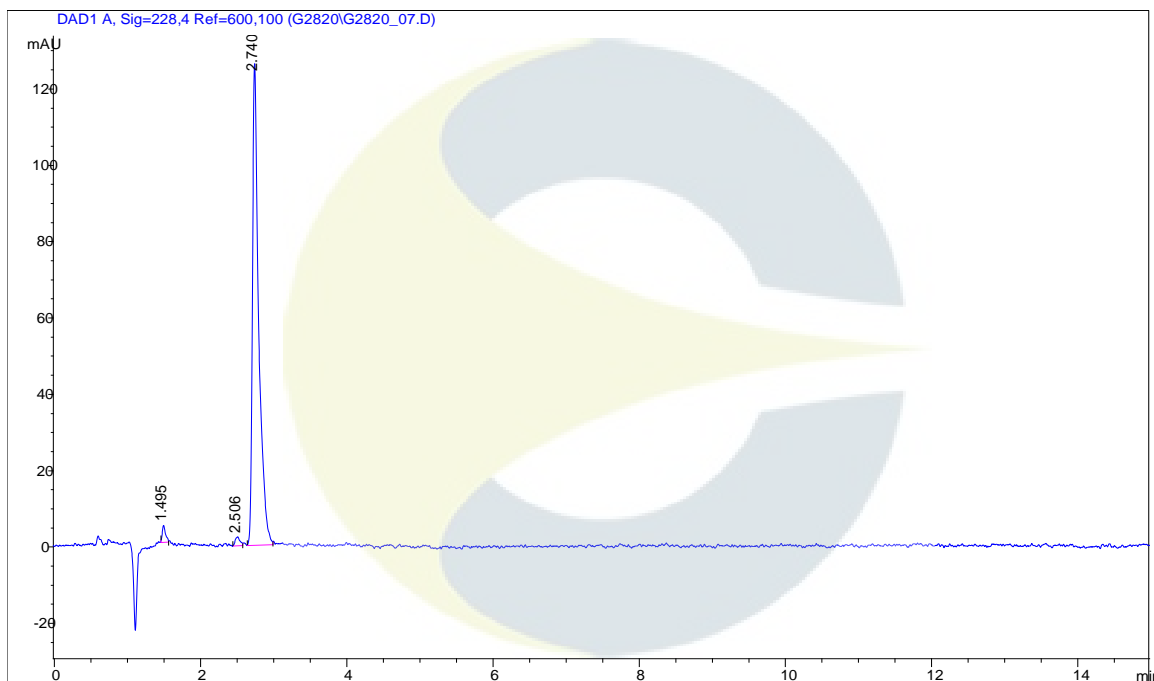
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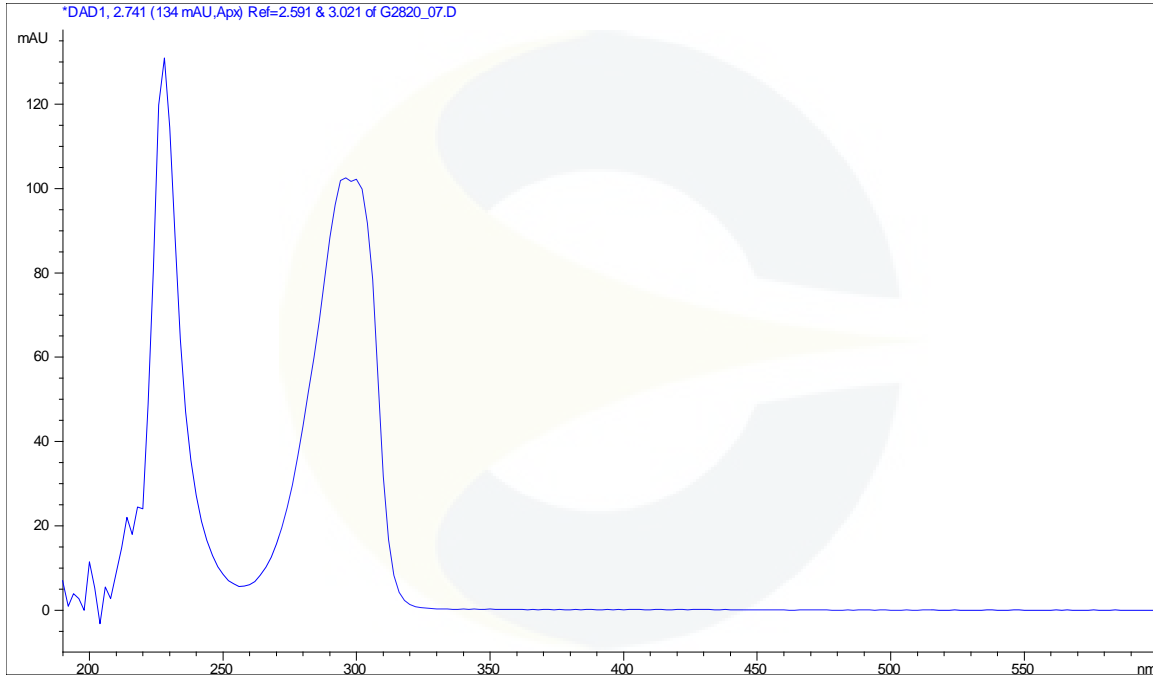
ANALYTICAL CONDITIONS

INSTRUMENT	AGILENT 1100 HPLC DIODE ARRAY DETECTOR (DAD); AGILENT 6510 QTOF
COLUMN	Phenomenex Luna Silica(2) 150 x 2.00 mm, 3 µm particle size
MOBILE PHASE	0.2% Isopropyl alcohol and 0.8% acetic acid in n-Hexane Isocratic for 15 minutes
COLUMN TEMP.	35 °C
FLOW RATE	0.8 mL/minute
INJECTION VOL.	1.0 µL
INJECTION CONC.	0.90 mg/mL in n-Hexane
DETECTION	228 ± 2 nm

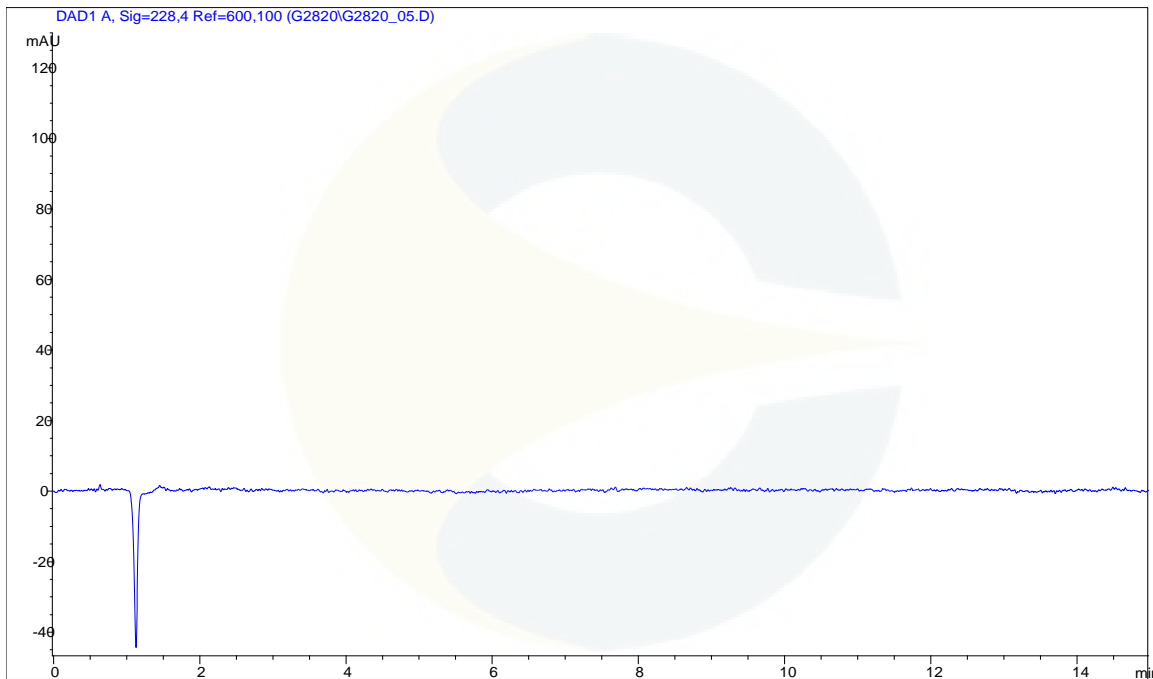
HPLC CHROMATOGRAM OF D-GAMMA-TOCOPHEROL (CDXP-16-004639)


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UV SPECTRUM AT RT 2.7 MINUTES

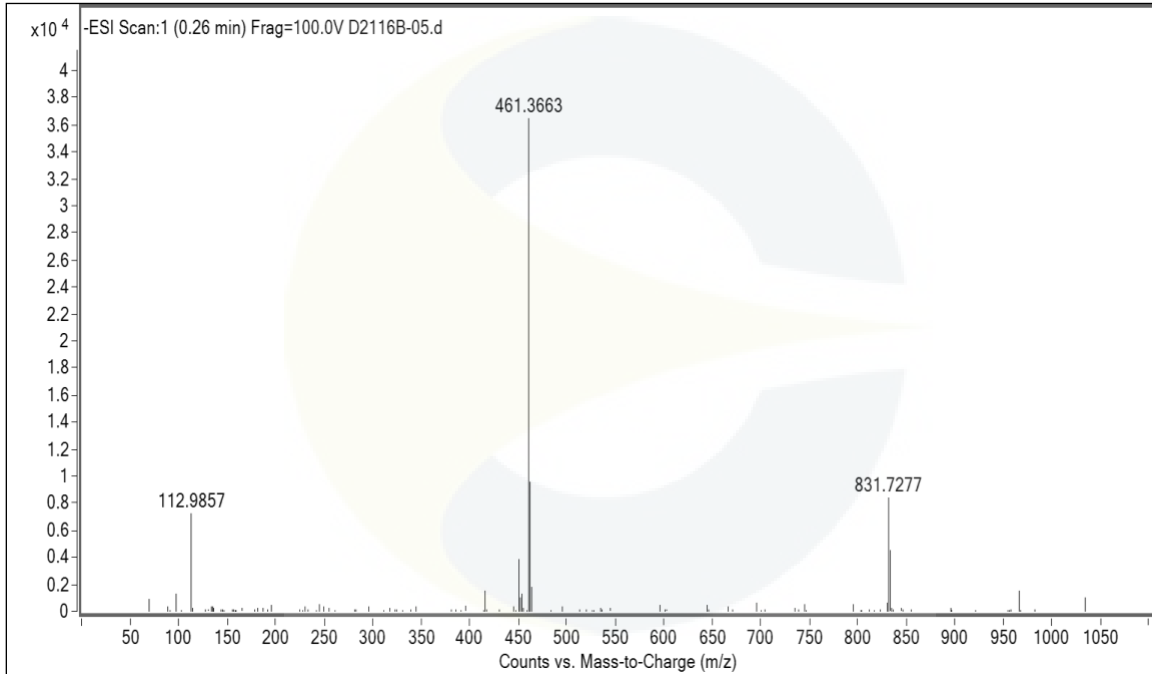


HPLC CHROMATOGRAM OF DILUENT BLANK

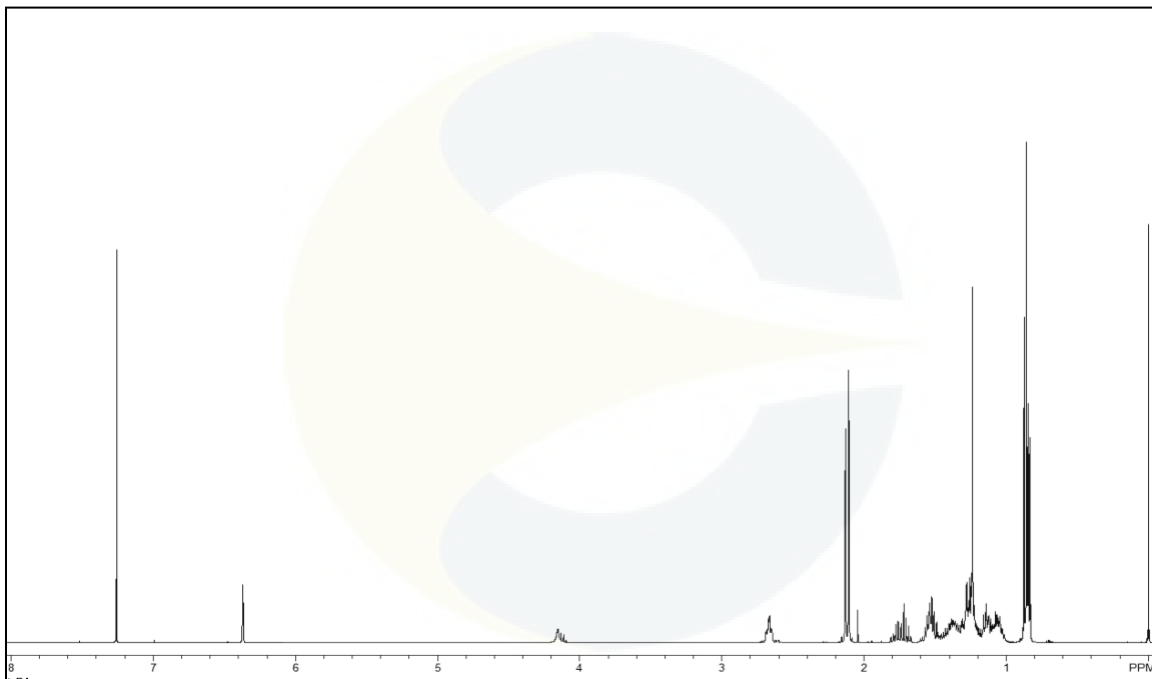


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MASS SPECTRUM OF D-GAMMA-TOCOPHEROL (CDXP-16-004639)

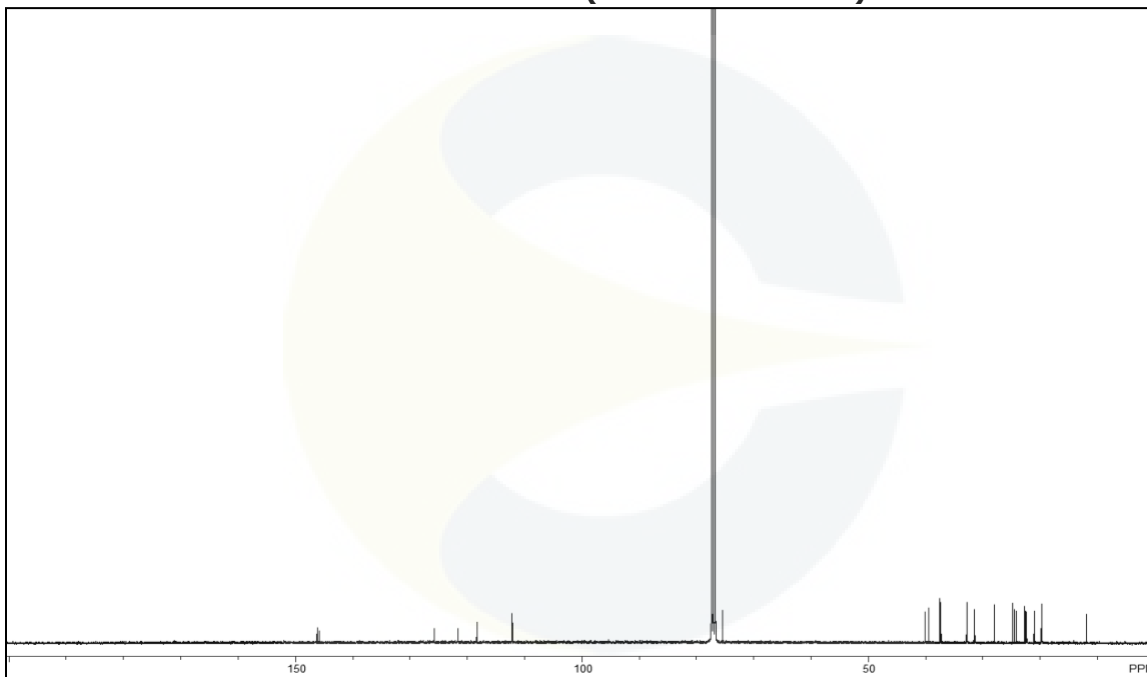


$^1\text{H-NMR}$ SPECTRUM OF D-GAMMA-TOCOPHEROL (CDXP-16-004639) IN CDCl_3



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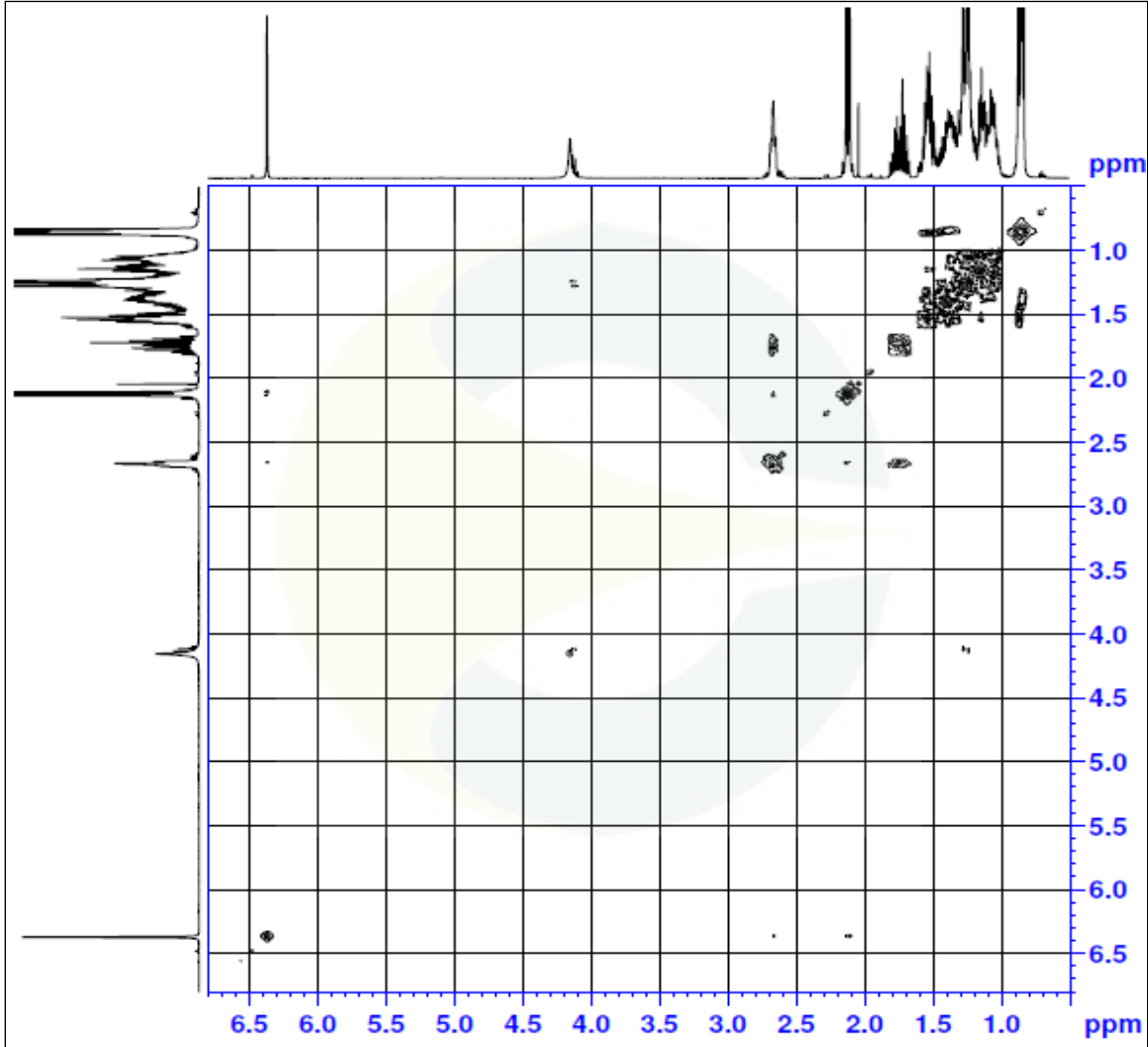
¹³C-NMR SPECTRUM OF D-GAMMA-TOCOPHEROL (CDXP-16-004639) IN CDCl₃



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COSY-NMR SPECTRUM OF D-GAMMA-TOCOPHEROL (CDXP-16-004639) IN CDCl₃



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REVISION HISTORY

Revision History	Date of Revision	Document/Changes
00	05/26/2016	New report
01	04/20/2018	Updated analytical conditions and method. Removed melting point.
02	03/27/2019	Corrected adjusted purity listed calculation. Updated product name and structure.
03	08/06/2020	Material passed reevaluation by HPLC and moisture determination by KF. Updated analytical conditions, analytical results, chromatograms, UV spectrum, and expiration date.

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