

CERTIFICATE OF ANALYSIS

SAMPLE NAME		Organic Cordyceps Mushroom Powder - Evolution Botanicals	
FORM		Powder	
CUSTOMER NAME		Evolution Botanicals Australia PTY LTD	
CERTIFICATION DATE		21 March 2023	
CUSTOMER REFERENCE		Batch Evolution Botanicals 079 BBD12-12-24	
ARL JOB #	A230089	LAB REF. #	ARL2300312
ANALYSIS	Herb Profiling	METHOD	ARL-TM125
TEST PROFILE (below)		Organic Cordyceps Mushroom Powder - Evolution Botanicals Batch Evolution Botanicals 079 BBD12-12-24 (50:50 M:W)	

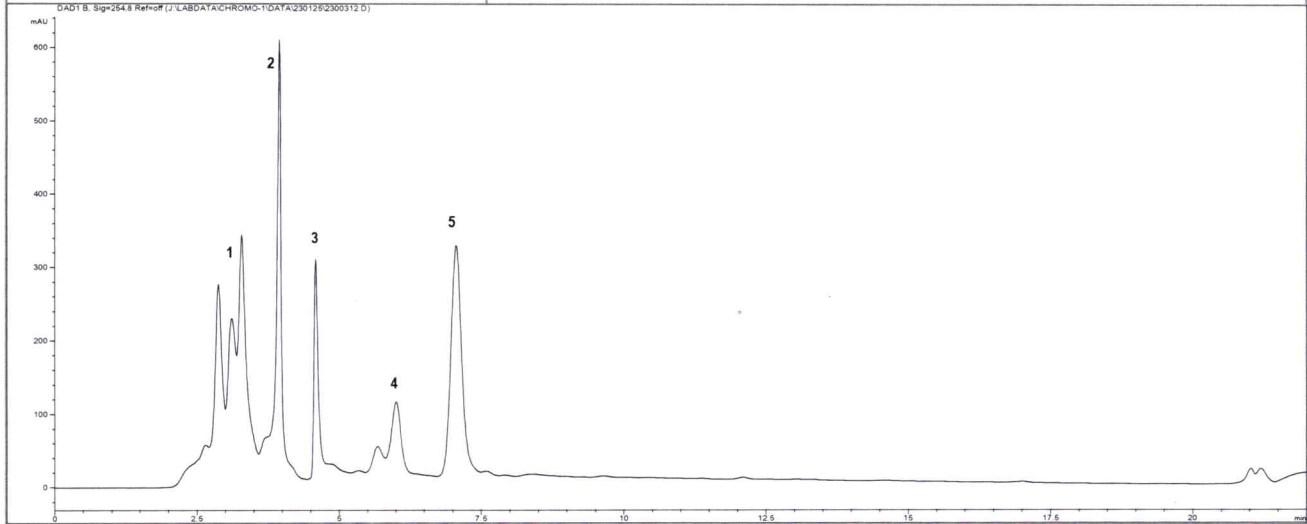


TABLE 1. PEAK IDENTIFICATION

Peak #	RT (min)	UV-Vis λ -max	Tentative ID (MW)
1	2.8 - 3.3	262 nm, 260 nm	nucleobases - cytosine, uridine, cytosine, amino acids - peptides
2	3.9	266 nm	nucleobase - thymine
3	4.6	266 nm	nucleobase - adenine
4	5.7, 6.0	260 nm	nucleosides - adenosine (adenine glycoside)
5	7.0	262 nm, 260 nm	nucleoside - cordycepin (deoxy adenosine)

COMMENTS

The HPLC 254 nm profile of the test sample Organic Cordyceps Mushroom Powder is given above with some major components from the plant extracts indicated. The peaks identified are consistent with previously reported nucleobases and nucleosides (nucleobase glycosides) reported from Cordyceps (*Ophiocordyceps chinensis* and *O. militaris*) based on characteristic spectra and comparison with reference materials and published literature. Spectral data in support of peak identification is attached.



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QC AUTHORISED

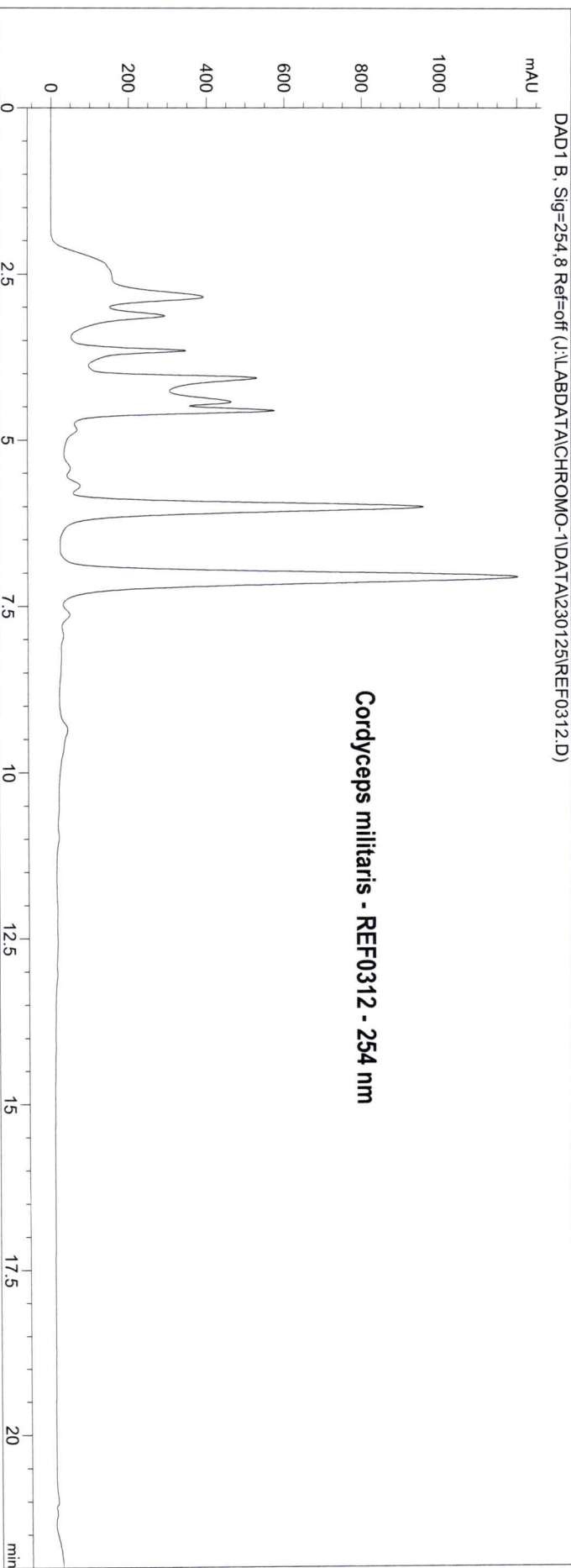
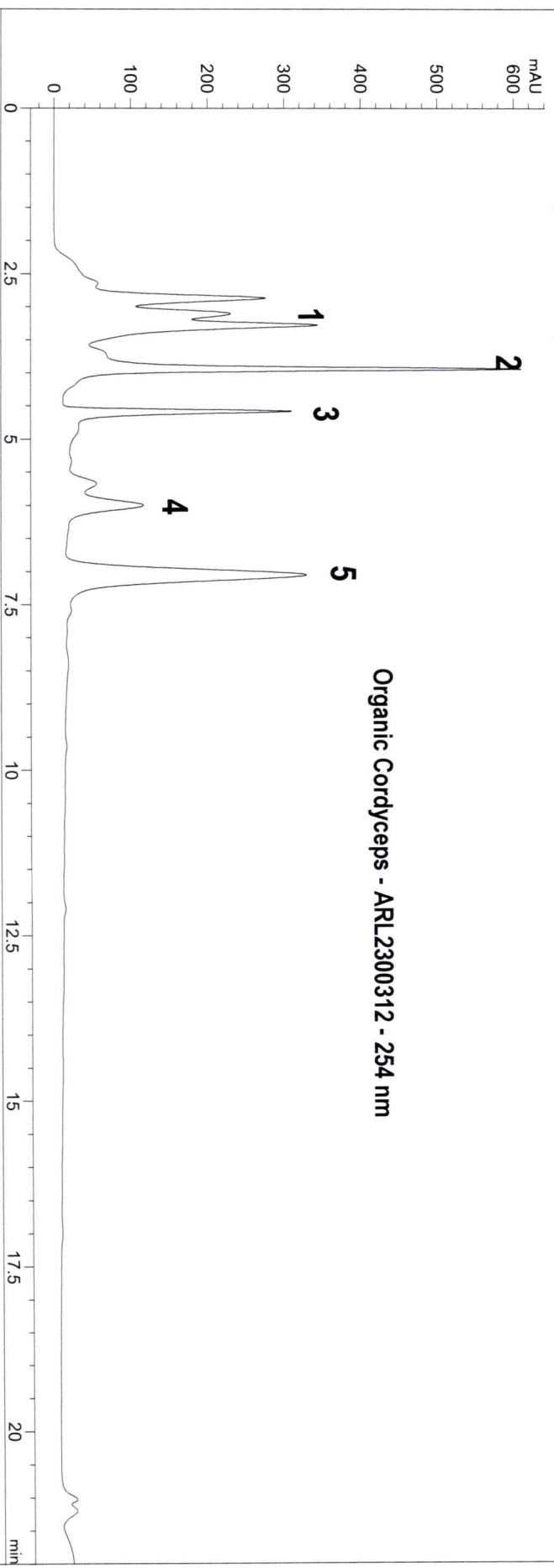
Reference: Dictionary of Natural Products, CRC Press, 2020

Quality evaluation of Cordyceps through simultaneous determination of eleven nucleosides and bases by RP-HPLC, **J. Sep. Sci.** 2006,29, 953–958

Qualitative and quantitative determination of nucleosides, bases and their analogues in natural and cultured Cordyceps by pressurized liquid extraction and high performance liquid chromatography–electrospray ionization tandem mass spectrometry (HPLC–ESI–MS/MS), **Analytica Chimica Acta** 567 (2006) 218–228

Current Chromatogram(s)

DAD1 B, Sig=254,8 Ref=off (J:\LABDATA\CHROMO-1\DATA\230125\2300312.D)



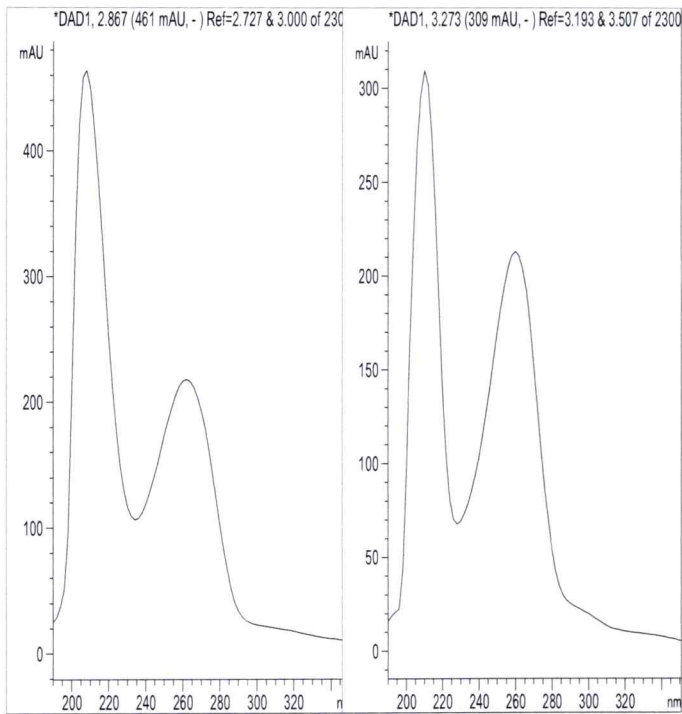


Figure 1. UV-Vis spectra of peaks #1 identified as nucleobases likely including cytosine, uridine and cytosine as rpeviously reported in *Ophiocordyceps* spp.

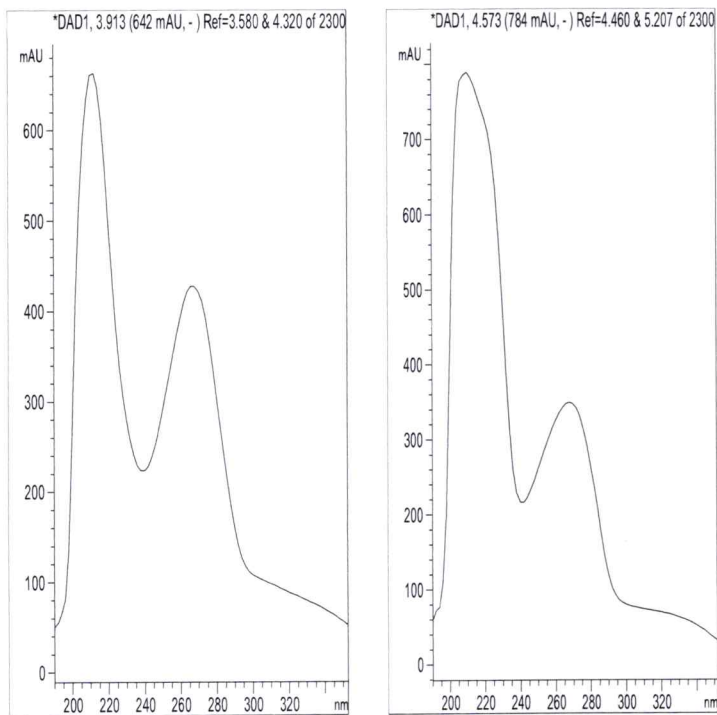


Figure 2. UV-Vis spectra of peaks #2 and #3 identified as nucelobases thymidine and adenosine based on characteristic spectra and report previous report in *Ophiocordyceps* spp.

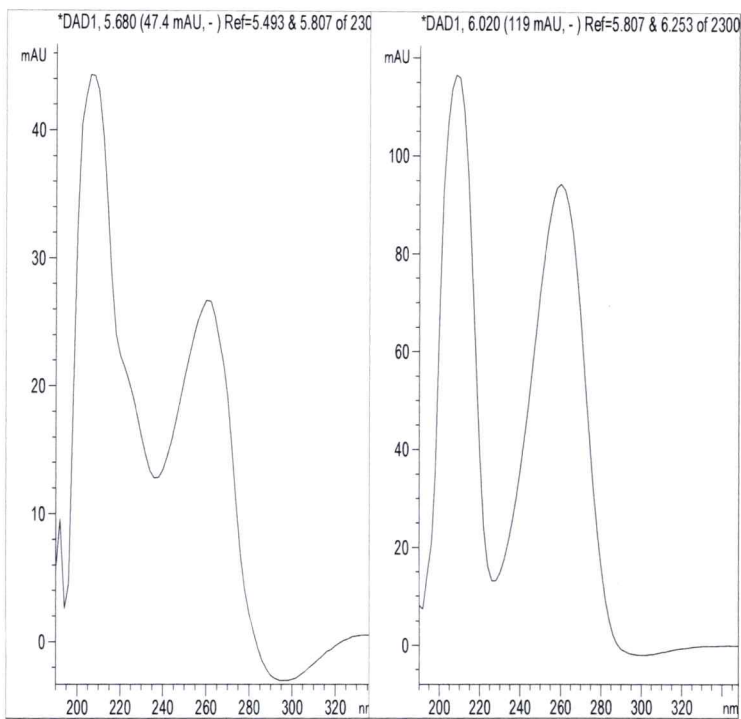


Figure 3. UV-Vis spectra of peaks #4 identified as nucleosides, nucleobase glycosides, primarily adenosine as previously reported and characteristic of *Ophiocordyceps* spp.

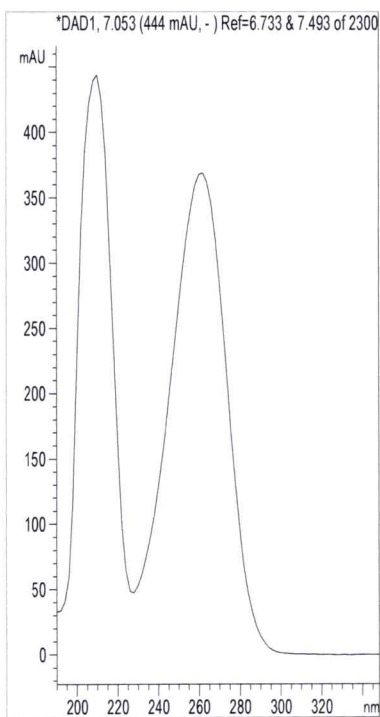


Figure 4. UV-Vis spectra of peak #5 identified as the nucleoside cordycepin, or deoxy-adenosine, as previously reported in and characteristic of *Ophiocordyceps militaris*