Southern Cross University

Southern Cross Plant Science
ANALYTICAL RESEARCH LABORATORY

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CERTIFICATE OF ANALYSIS

SAMPLE NAME	Finger Lime Extract Red		
FORM	Liquid		
CUSTOMER NAME	Plant Extracts		
CERTIFICATION DATE	31 October 2019		
CUSTOMER REFERENCE	0058CC1909/1		
ARL JOB #	A192425	**LAB REF. #**	ARL1906614
ANALYSIS	LCMS Compositional analysis	**METHOD**	ARL-TM125
TEST PROFILE (below)	Finger Lime Extract Red 0058CC1909/1		

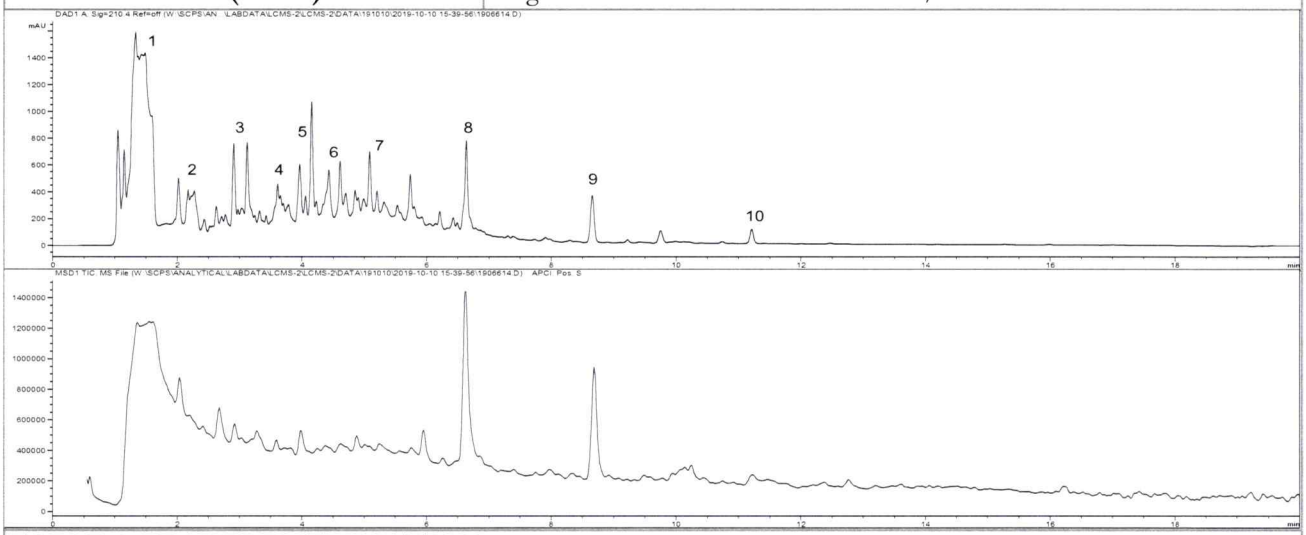


TABLE 1. PEAK IDENTIFICATION

Peak #	RT (min)	Fragment ions [M+H]	Tentative ID (MW)
1	1.0 - 1.5	130, 216	amino acids, amines
2	2.0, 2.3	188, 205	amino acid (tryptophan), phenolic
3	2.9, 3.2	193, 231	phenolic acid, flavonoid derivative
4	3.6, 3.7	317, 449	flavonoid derivatives
5	3.9, 4.2	579, 433	flavone C-glycosides
6	4.5, 4.7	303, 317, 347, 463	flavone glycoside, phenolic derivative
7	5.1	347, 509	flavonone glycoside
8	6.7	231, 317, 335, 352, 577, 603	mixed peak - benzopyranone derivative (byangelicin), flavonone derivative
9	8.7	217, 247	benzopyranone (bergapten) derivative
10	11.2	413, 471, 531, 545	limonoid derivative

COMMENTS

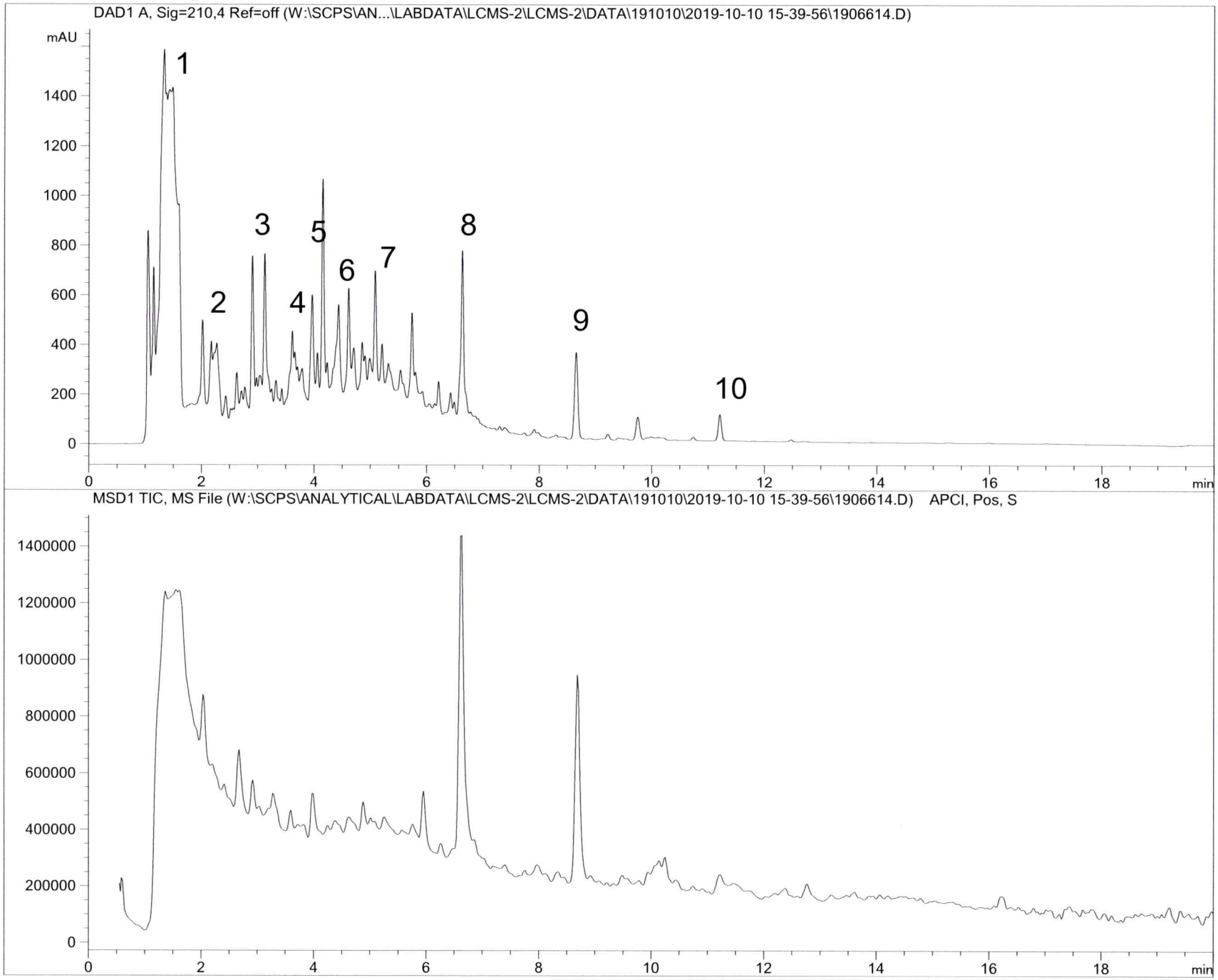
The HPLC-MS profile of the test sample is given above with some major components from the plant extracts indicated. The major peaks identified are a range of amine or amino acids, phenolic acid, falvonoid O and C-glycosides, methoxy-benzopyranone derivatvies including bergapten derivatives. Spectral data in support of peak identification is attached.

Peter Mouatt
SENIOR ANALYTICAL OFFICER

Ashley Dowell
MANAGER - ARL

Reference: Dictionary of Natural Prioducts, CRC Press, 2019

Current Chromatogram(s)



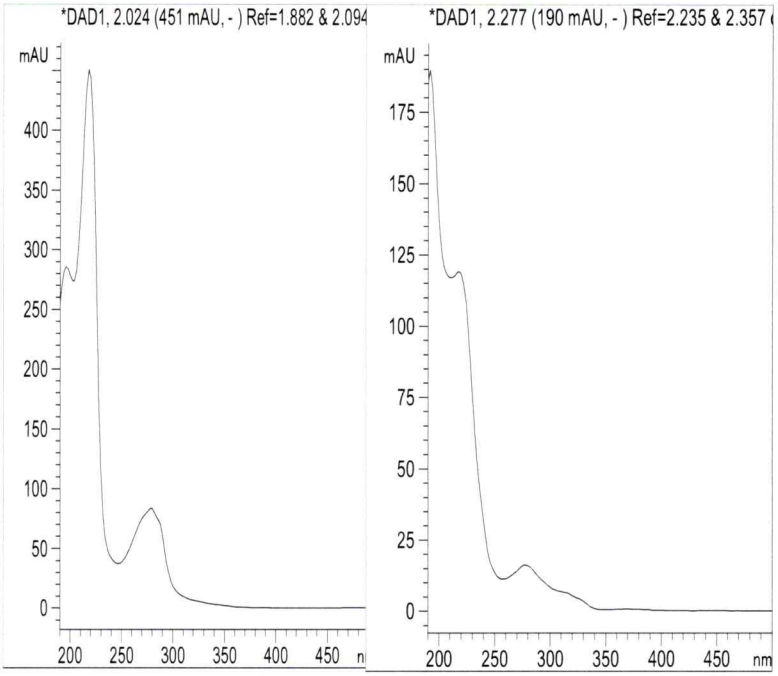


Figure 1. UV-Vis spectra of peaks #2 identified as amino acid tryptophan and a phenolic respectively based on UV-Vis and MS spectra

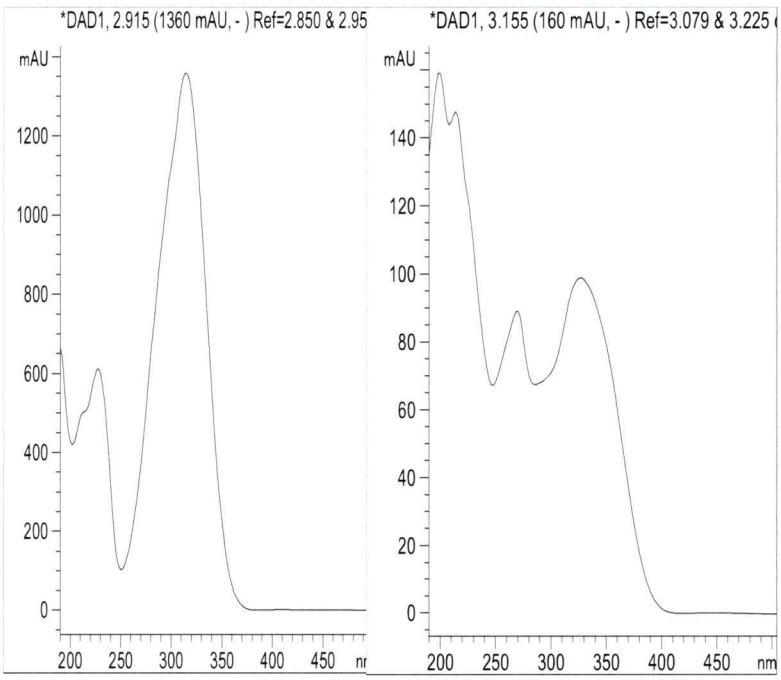


Figure 2. UV-Vis spectra of peaks #3 identified as phenolic acid and flavone derivative respectively based on characteristic UV-Vis spectra

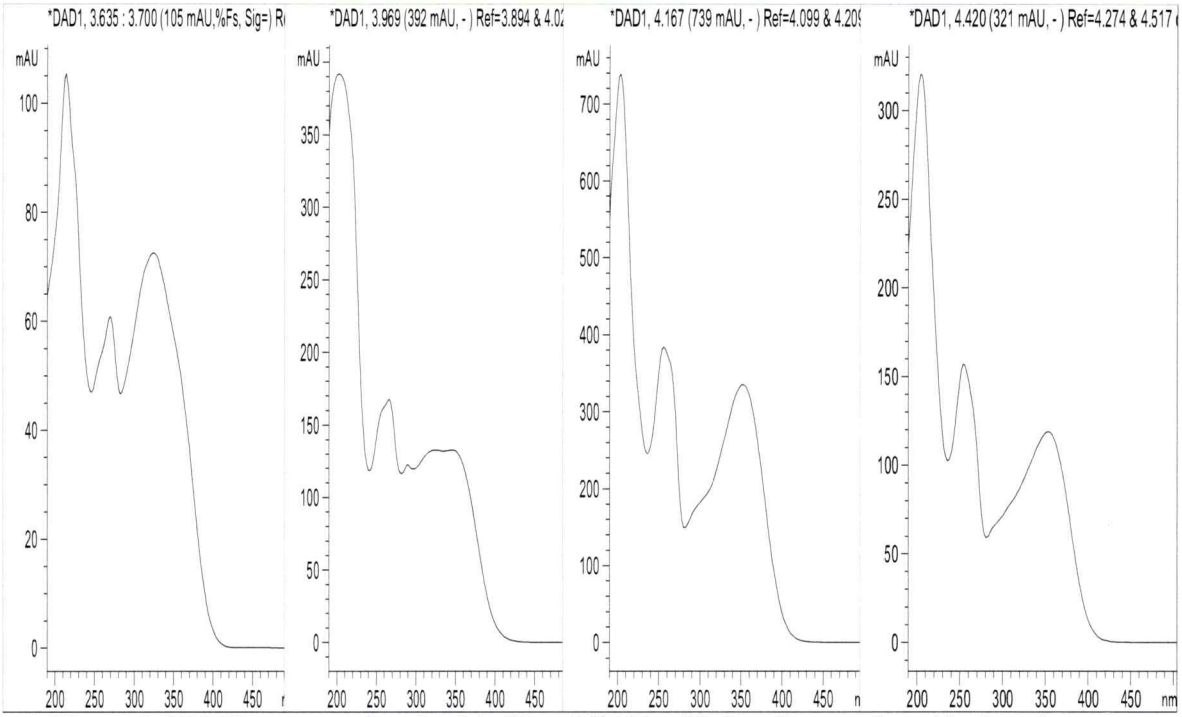


Figure 3. UV-Vis spectra of peaks #4, #5 and #6 identified as flavone glycosides based on characteristic UV-Vis spectra

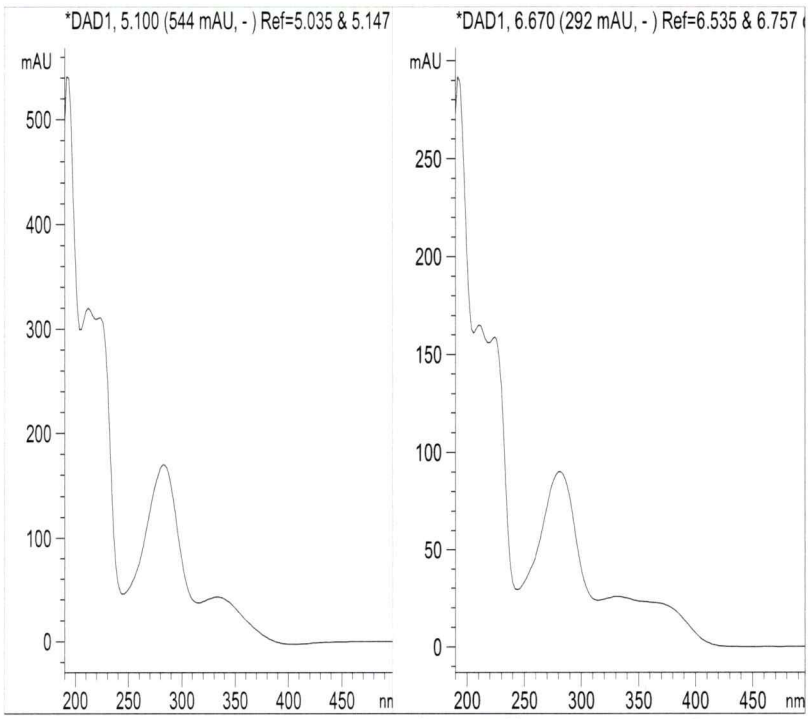


Figure 4. UV-Vis spectra of peaks #7 and #8 identified as flavonone derivatives based on characteristic UV-Vis spectra and absorption maxima ~280nm