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CERTIFICATE OF ANALYSIS COVER PAGE

SAMPLE NAME	Water lily Small		
CLIENT	-	**ARL JOB NUMBER**	A25-00-1557
CUSTOMER REFERENCE	Water Lily small	**SAMPLE ID**	A25-00-1557-0001
SAMPLE FORM	Herb, dried	**CERTIFICATE ISSUE NUMBER**	1
METHOD	ARL-TM125	**CERTIFICATE DATE**	17 July 2025
ANALYSIS	LCMS Compositional Reporting		
CERTIFICATE ID	A25-00-1557-0001_LCMS Compositional Report_ARL1		

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Southern Cross University

ARL Analytical Research Laboratory

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QC AUTHORISED	J. Smith		

Result Summary:

LCMS 210 nm and MS profiles of the test sample are shown below with tentatively identified component peaks indicated. Retention times, spectral data and putative compound names or classes corresponding to component peaks are summarized in the accompanying table along with additional UV-Vis and MS spectral data in support of peak identifications where applicable. The major classes of compounds identified appear to include the nucleoside adenosine, numerous gallic acid derivatives, ellagic acid derivatives, flavone (quercetin, myricetin) glycosides and acetyl-glycosides as previously reported in Nymphaea caerulea, other flavone glycosides and possible phenolic acid amine derivatives based on characteristic UV-Vis and MS spectra.

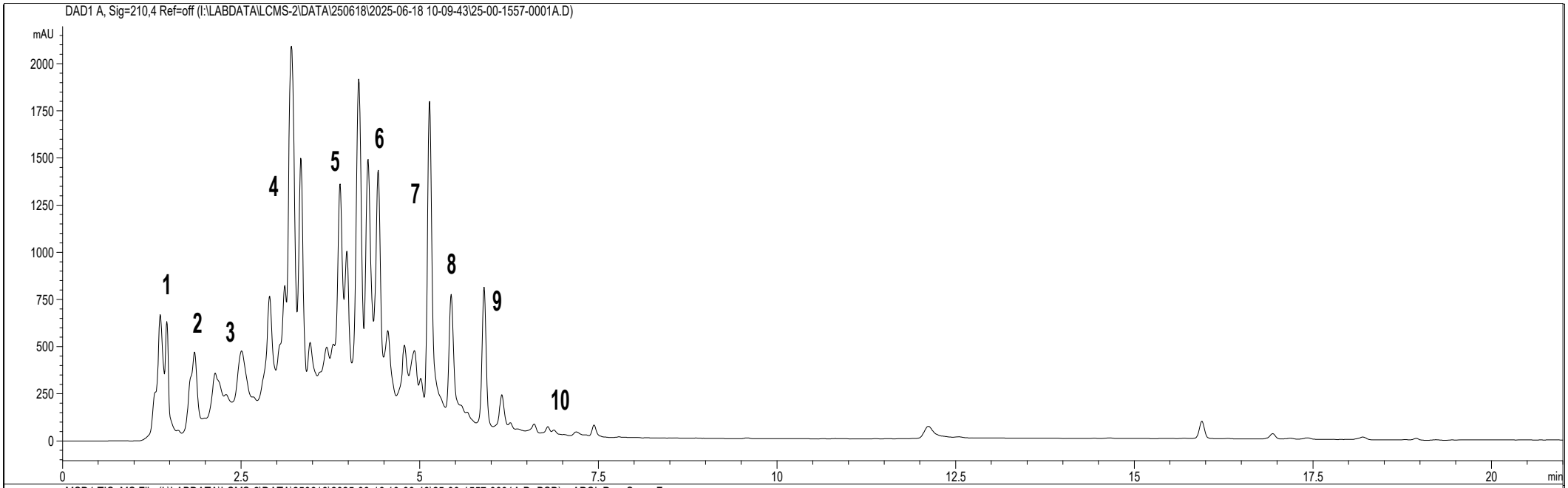
The alkaloids nornuciferine and nuciferine characteristic of Nelumbo nucifera flowers were not detected in the test sample by comparison with the authentic reference material Nelumbo nucifera (flower petal).

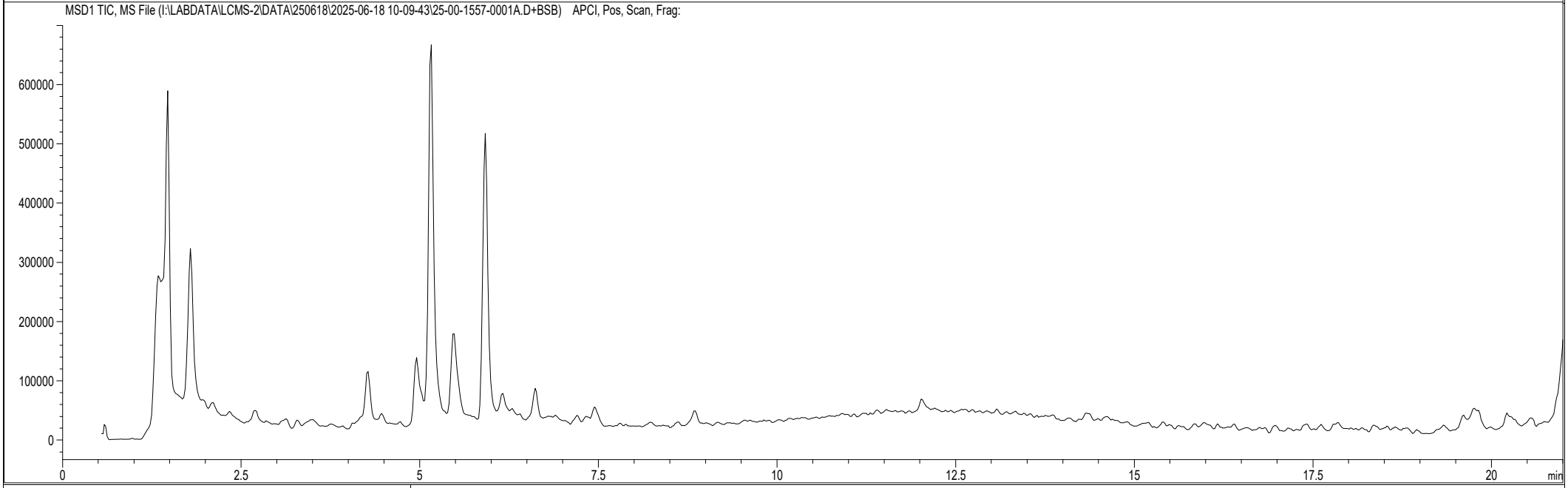
References: Dictionary of Natural Products, CRC Press, 2025 Edition

Antioxidant constituents of Nymphaea caerulea flowers, Phytochemistry 69 (2008) 2061–2066

Analysis Notes:

Identification of compounds indicated is tentative and has been reported as putatively annotated compounds in reference to relevant phytochemical literature and/or as characterised compound classes by spectral similarity to spectral data, or known compounds of a chemical class (based upon UV/Vis and single quad MS spectroscopy). The tentative identifications and information reported herein are intended to be applied for research and development purposes and have not been validated as a form of authentication or identification of any herbal material or compound.





TEST PROFILE (210 nm above, MS below)	A25-00-1557-0001 Water lily Small (70:30 EW)

TABLE 1. PEAK IDENTIFICATION			
Peak #	**RT (min)**	**Fragment ions [M+H]**	**Tentative ID (MW)**
1	1.2 - 1.5	136, 268	mixed peak - amino acids, nucleoside (adenosine), phenolic derivatives
2	1.8, 1.9	103, 120, 166, 136, 268	gallic acid, phenolic derivatvies, amino acids
3	2.1, 2.2, 2.5	188, 205	gallic acid derivatives, amino acid (tryptophan)
4	2.9 - 3.4	-	gallic acid derivatives
5	3.7 - 4.0	-	gallic acid derivatives
6	4.1, 4.3, 4.5	319, 465	gallic acid and elalgic acid derivatives, flavone glycoside (myricetin glycoside)
7	4.9 - 5.2	303, 449, 289, 319, 507	gallic acid derivative, flavone glycosides (quercetin glycoside, myricetin acetyl-glycoside), chalcone derivative
8	5.4	319, 273, 435, 657	flavone (myrcietin) derivative, chalcone glycoside (Isosalipurposide)
9	5.9, 6.2	303, 491,	flavone glycosides (quercetin acetyl-glycosides)
10	6.6 - 7.4	287, 475, 498, 660, 674	flavone glycoside (kaempferol glycoside derivative), phenolic amine derivatives

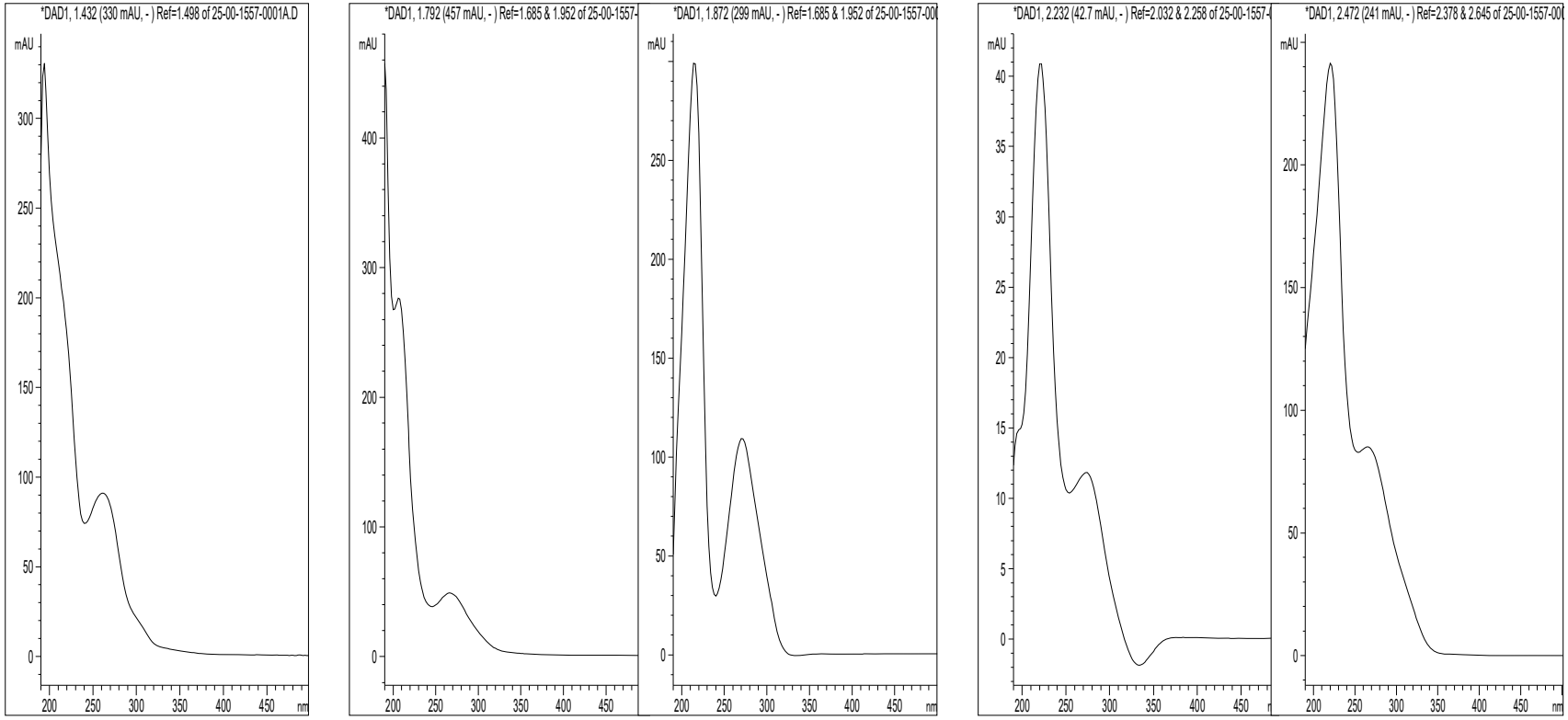


Figure 1. UV-Vis spectra from peaks #1, #2 and #3 tentatively identified as the nuceloside adenosine, amino acid tryptophan, a range of phenolic derivatvies primarily gallic acid derivatives

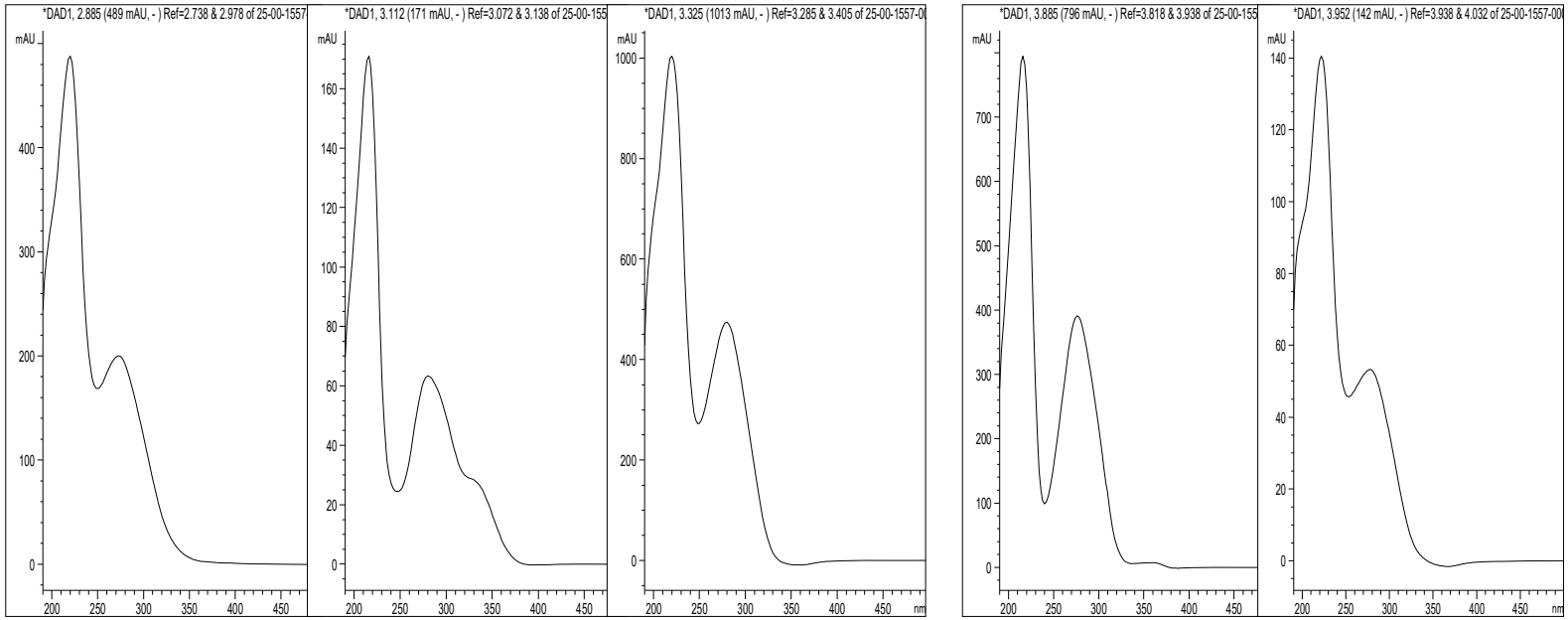


Figure 2. UV-Vis spectra from peaks #4 and #5 tentatively identified as a range of primarily gallic acid derivatives based on characteristic spectra

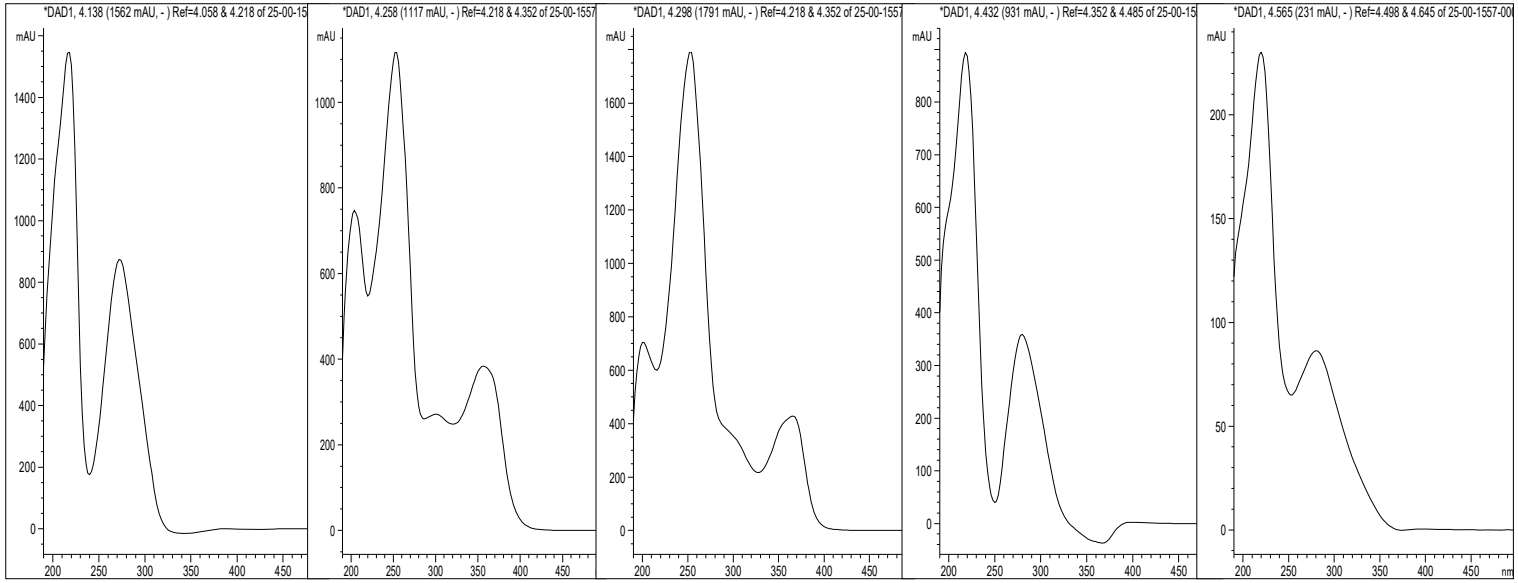


Figure 3. UV-Vis spectra from peaks #6 tentatively identified as a range of primarily gallic acid derivatives, with ellagic acid and flavone (myricetin) glycoside also based on characteristic spectra

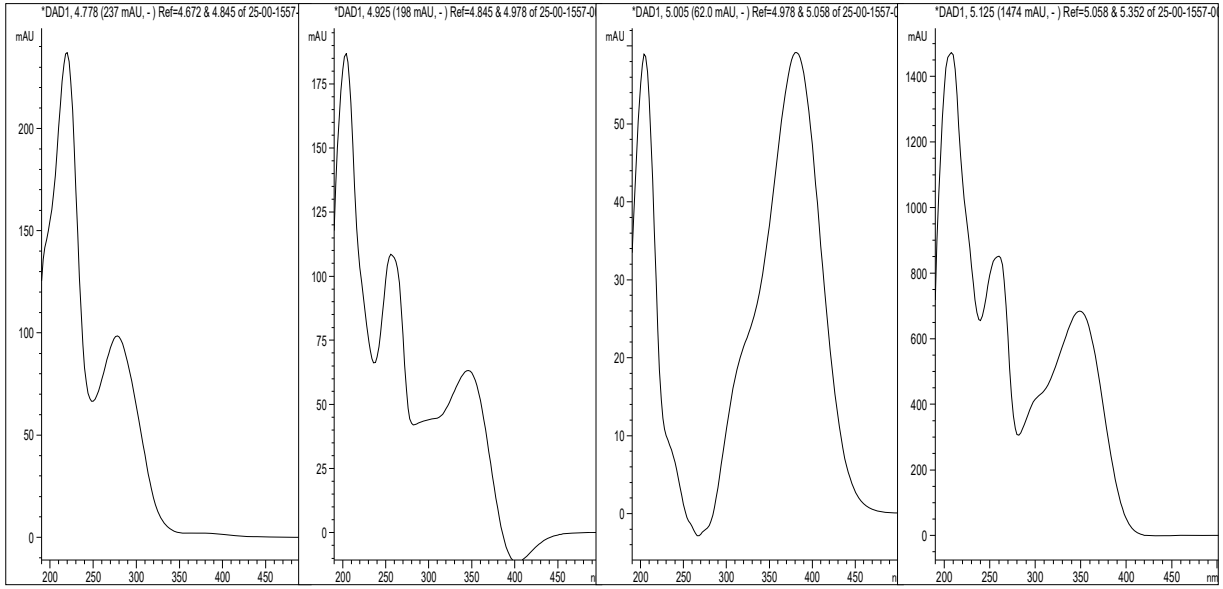


Figure 4. UV-Vis spectra from peaks #7 tentatively identified as a range of phenolics including gallic acid derivative, flavone (quercetin) glycoside, chalcone and flavone (myricetin) acetyl-glycoside (acetyl-myrictrin) also based on characteristic spectra and previous report in Nymphaea caerulea

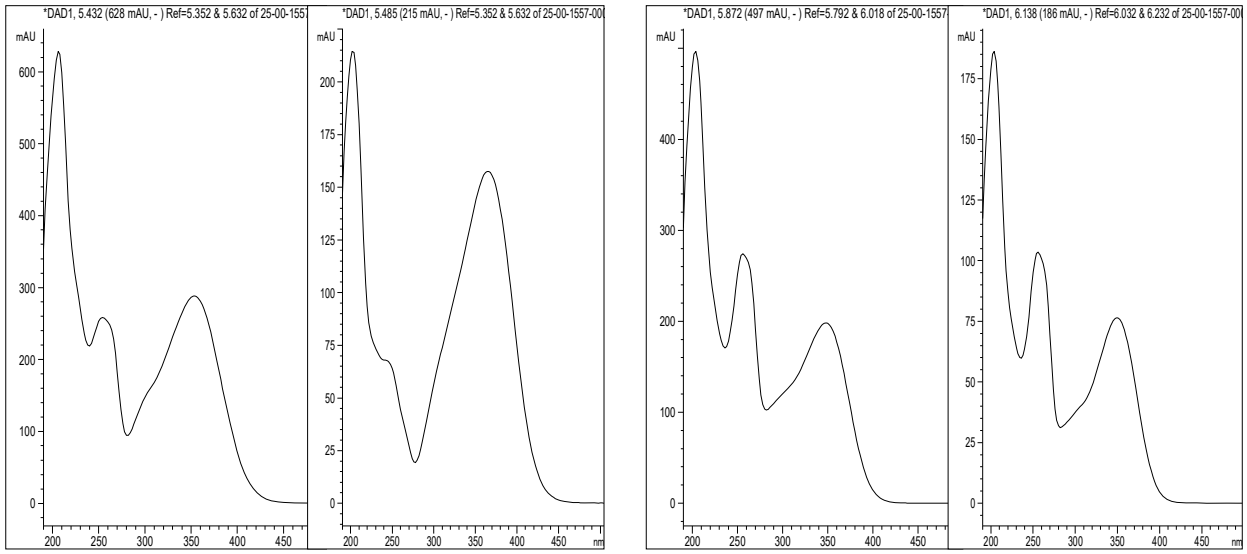


Figure 5. UV-Vis spectra from peaks #8 and #9 tentatively identified as a flavone (myricetin) glycoside, chalcone glycoside (Isosalipurposide) and flavone (quercetin) acetyl-glycoside derivatives (acetyl-quercitrin) based on characteristic spectra and previous report in Nymphaea caerulea

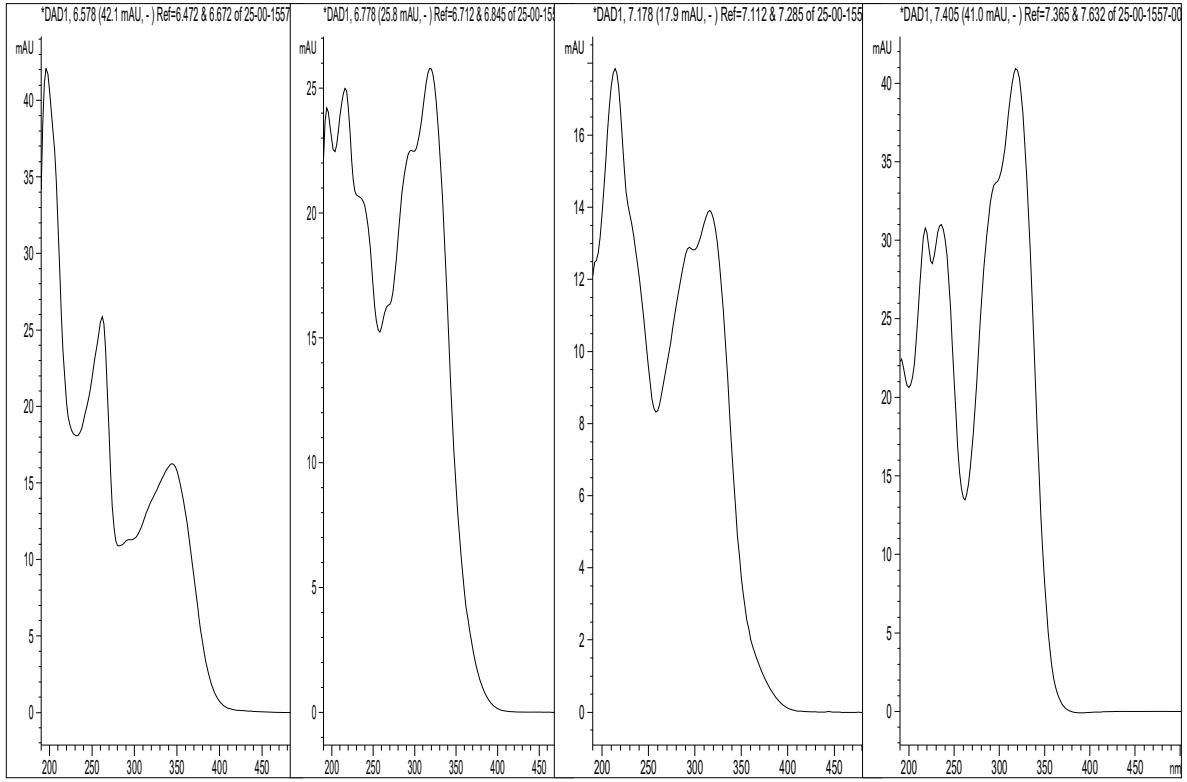


Figure 6. UV-Vis spectra from peaks #10 tentatively identified as a flavone (kaempferol) glycoside derivative and possible phenolic acid amine derivatives based on characteristic spectra