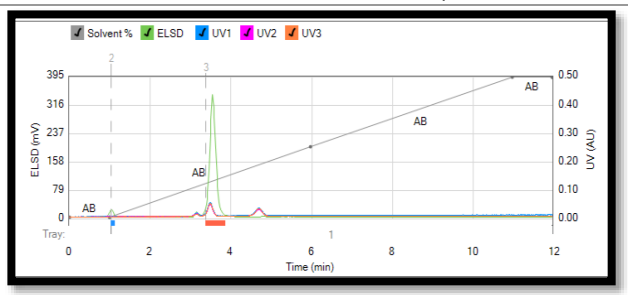
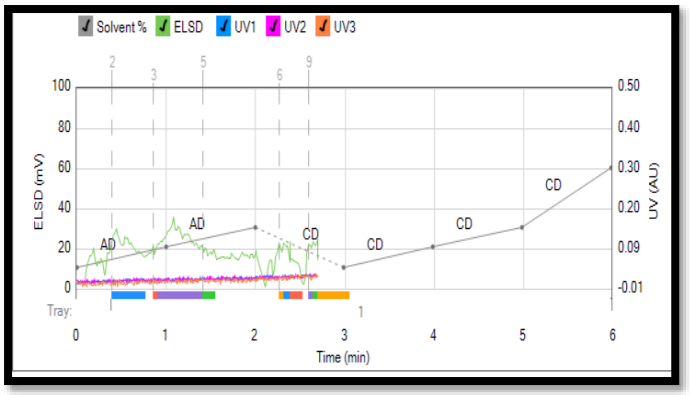
Supplementary 1

The method was developed using several runs and each run was repeated several times as shown in table 1. Run 6 was repeated several times and the fractions were collected at the retention time 0.7 -1.5 minute and compiled. The volume of the collected fractions was reduced using a rotatory evaporator. The weight obtained was approximately 1 gram, and these fractions were used in run 7. The 1 gm was redissolved in methanol and injected into the Colum (Reverse Silica C18 12g), using a syringe. The solvent system was composed of 1% acetic acid (A) and methanol (B). The run time was ten minutes with a flow rate of 10 ml/min and a gradient mode starting in the first minute with solvent (A) only, then increased to 60% of solvent (B) for half a minute, then increased to 65% and held for three minutes. Another increase to 66% of solution (B) and held for two minutes, finally, increased to 70% for more than two minutes. For detection, three UV wave lengths were used 240, 254, 288 nm and the ELSD. Run 7 was repeated three times, and the fraction collected at the retention time 1.5 -2.5 minute was accumulated. The volume of the accumulated fraction was reduced using the rotary evaporator, producing 0.5 g of the dried extract for run 8.

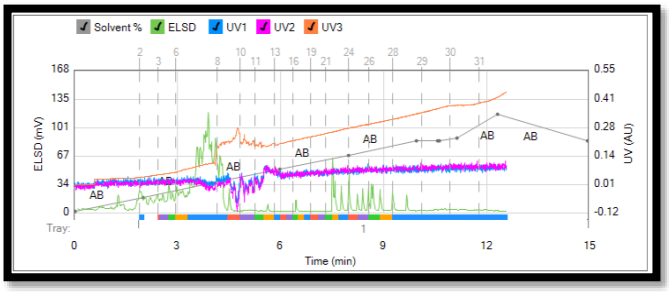
Table S1. method development for the ethanolic extract.

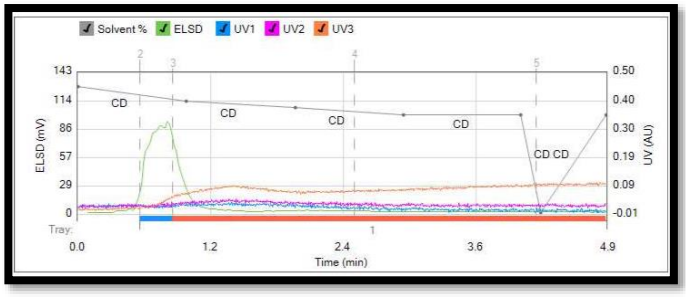
Run-1				
Sample injected			Ethanolic Extract of Leaves	
Wavelengths used			UV1: 254 nm	UV2: 265 nm	UV3: 280 nm
Solvent Used			Solvent A: N-Hexane	Solvent B: Ethyl acetate
Type of column			Silica 12 g (Normal)	
Gradient Table		Minutes	Solvents	%2nd solvent
	1	0.0	AB	0
	2	1.0	AB	0
	3	0.0	AB	0
	4	5.0	AB	50
	5	5.0	AB	100
	6	1.0	AB	100
	7	0.0	AB	100
Flow Rate	30 ml / min			
Flash Chromatogram				
Interpretation	no detection			

Run-2				
Sample injected	Ethanolic Extract			
Wavelengths used	UV1: 254 nm	UV2: 265 nm	UV3: 366 nm	
Solvent Used	Solvent A : DCM	Solvent B : Empty	Solvent C: Chloroform	Solvent D : Hexane

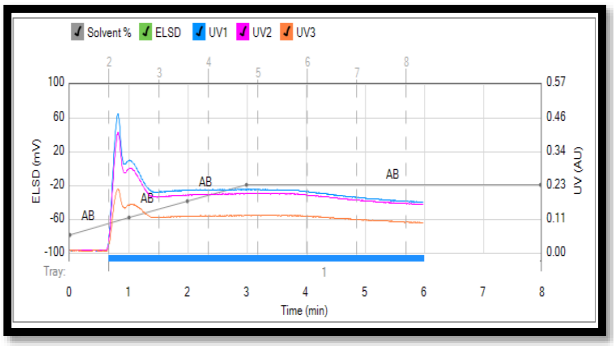
Type of column			Silica 4 g	
Gradient Table		Minutes	Solvents	%2nd solvent
	1	0.0	AD	10
	2	1.0	AD	20
	3	1.0	AD	30
	4	1.0	CD	10
	5	1.0	CD	20
	6	1.0	CD	30
	7	1.0	CD	60
Flow Rate	30 mL/min			
Flash Chromatogram				
Interpretation	No clear separation			

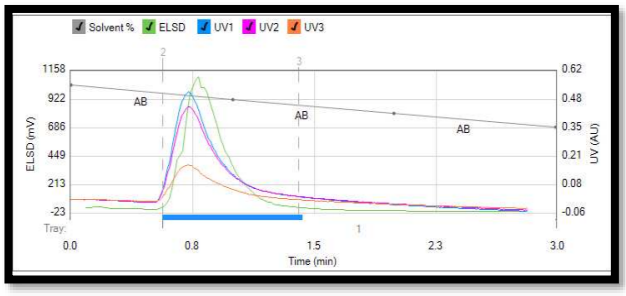
Run-3				
Sample injected			Ethanolic Extract	
Wavelengths used			UV1: 254 nm	UV2: 265 nm / UV3: 280 nm
Solvent Used			Solvent A : Toluene	Solvent B : premixed solvent of Acetone and methanol (1:3)
Type of column			Reverse Silica C18 12g	
Gradient Table		Minutes	Solvents	%2nd solvent
	1	0.0	AB	0
	2	2.0	AB	10
	3	2.0	AB	20
	4	2.0	AB	30
	5	2.0	AB	40
	6	2.0	AB	50
	7	0.6	AB	50
	8	0.1	AB	50
	9	0.5	AB	52
	10	1.2	AB	69
	11	2.6	AB	50
Flow Rate	30 ml/min			

Flash Chromatogram	
Interpretation	No clear separation

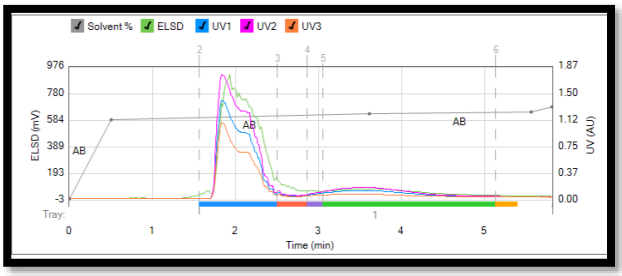
Run 4					
Sample injected			Ethanolic Extract		
Wavelengths used			UV1: 254 nm	UV2: 265 nm	UV3: 366 nm
Solvent Used			Solvent A : Empty	Solvent B : Methanol	Solvent C : Chloroform	Solvent D : Hexane
Type of column			Silica 4 g		
Gradient Table		Minutes	Solvents	%2nd solvent	
	1	0.0	AB	90	
	2	1.0	AB	80	
	3	1.0	AB	75	
	4	1.0	AB	70	
	5	1.1	AB	70	
	6	1.2	AB	70	
	7	3.7	AB	70	
Flow Rate	30 ml/min				
Flash Chromatogram					
Interpretation	No clear separation				

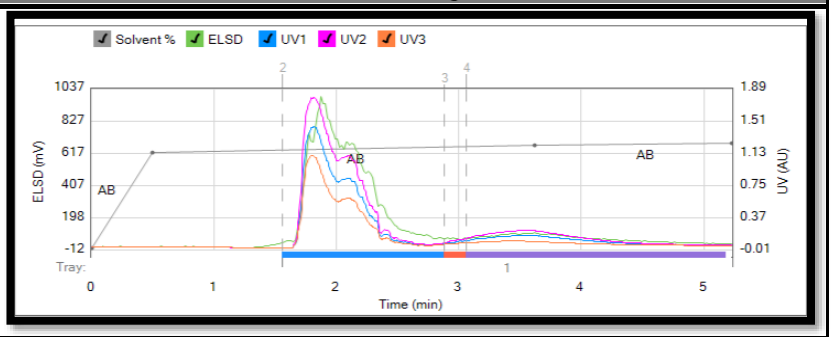
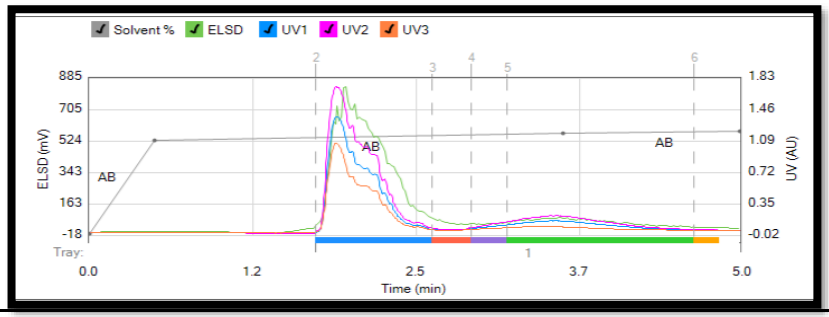
Run 5				
Sample injected		Ethanolic Extract		
Wavelengths used		UV1: 254 nm	UV2: 265 nm	UV3: 366 nm
Solvent Used		Solvent A : Dichloromethane	Solvent B : Methanol	
Type of column		Reverse Silica C18 12g		
Gradient Table	Minutes	Solvents	%2nd solvent	

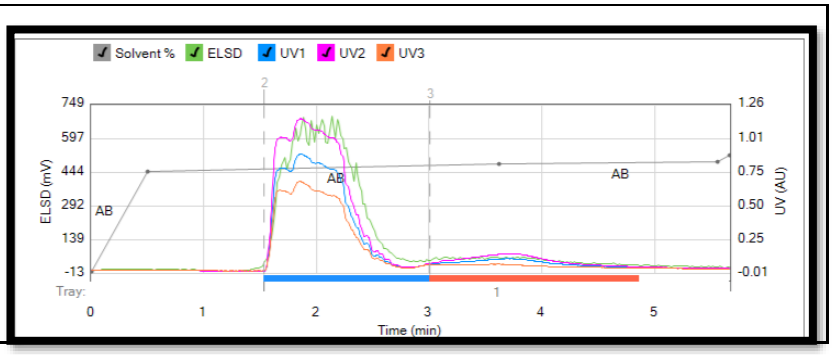
	1	0.0	AB	10
	2	1.0	AB	20
	3	1.0	AB	30
	4	1.0	AB	40
	5	5.0	AB	40
Flow Rate	30 ml/min			
Flash chromatogram				
Interpretation	Clear separation.			

Run 6				
Sample injected			Ethanolic Extract	
Wavelengths used			UV1: 254 nm	UV2: 265 nm	UV3: 366 nm
Solvent Used			Solvent A : Dichloromethane	Solvent B : Methanol
Type of column			Reverse Silica C18 12g	
Gradient Table		Minutes	Solvents	%2nd solvent
	1	0.0	AB	90
	2	1.0	AB	80
	3	1.0	AB	70
	4	1.0	AB	60
Flow Rate	30 ml/min			
Flash chromatogram				
Interpretation	Good separation with a single peak detection			

Run 7			
Sample injected	Collected concentrated fraction		
Wavelengths used	UV1: 254 nm	UV2: 240 nm	UV3: 288 nm
Solvent Used	Solvent A: 1% Acetic Acid	Solvent B: Methanol	
Type of column	Reverse Silica C18 12g		

		Minutes	Solvents	%2nd solvent
Gradient Table	1	0.0	AB	0
	2	0.5	AB	60
	3	3.1	AB	65
	4	2.0	AB	66
	5	2.4	AB	70
Flow Rate	10 ml/min			
Flash chromatogram				
Interpretation	Good separation.			

No. of repeats	Flash chromatogram
1	
2	

3	

Solvent %
ELSD
UV1
UV2
UV3
749
597
444
292
139
-13
ELSD (mV)
1.26
1.01
0.75
0.50
0.25
-0.01
UV (AU)
AB
AB
AB
Tray:
0
1
2
3
4
5
Time (min)

Supplementary 2

Figure S1. Heteronuclear Multiple bond correlation (HMBC) Spectrum.

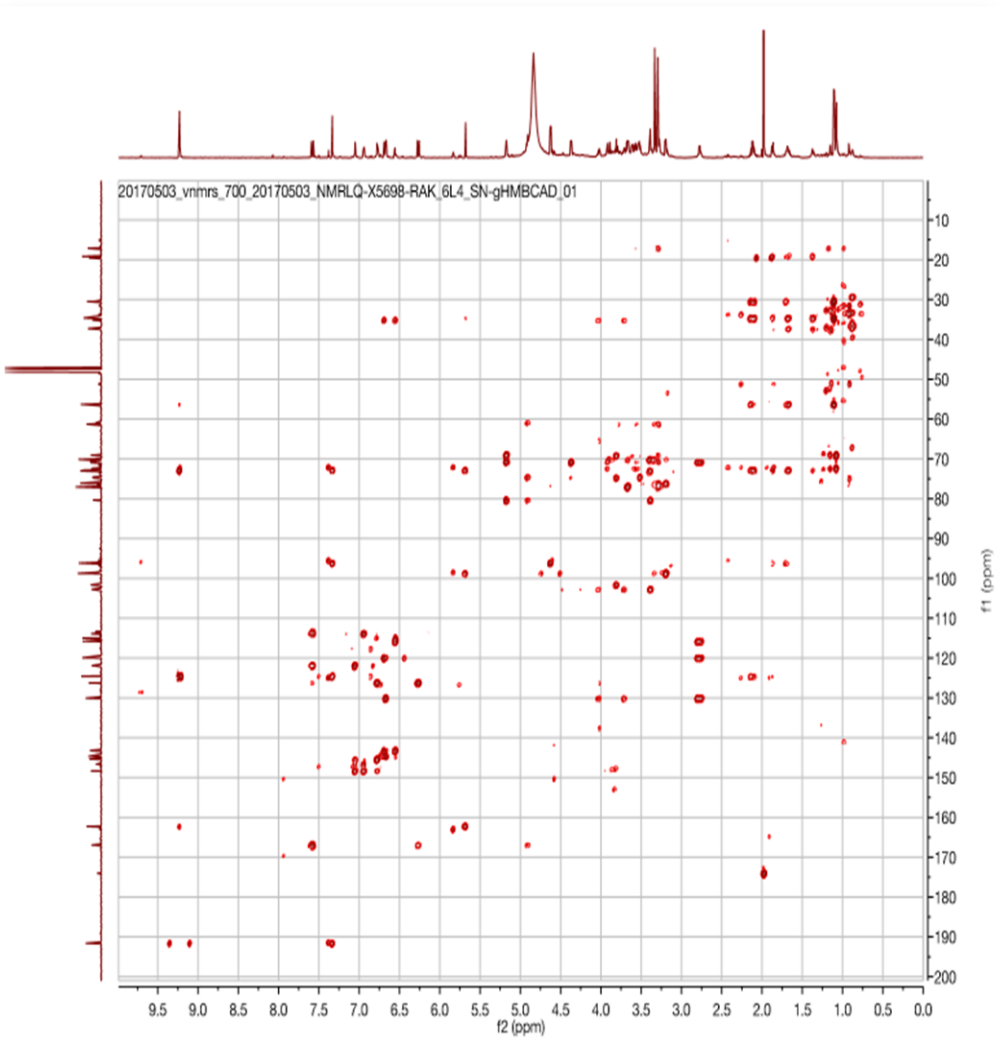


Figure S2. Heteronuclear single quantum Correlation (HSQC) Spectrum for Fraction A-3

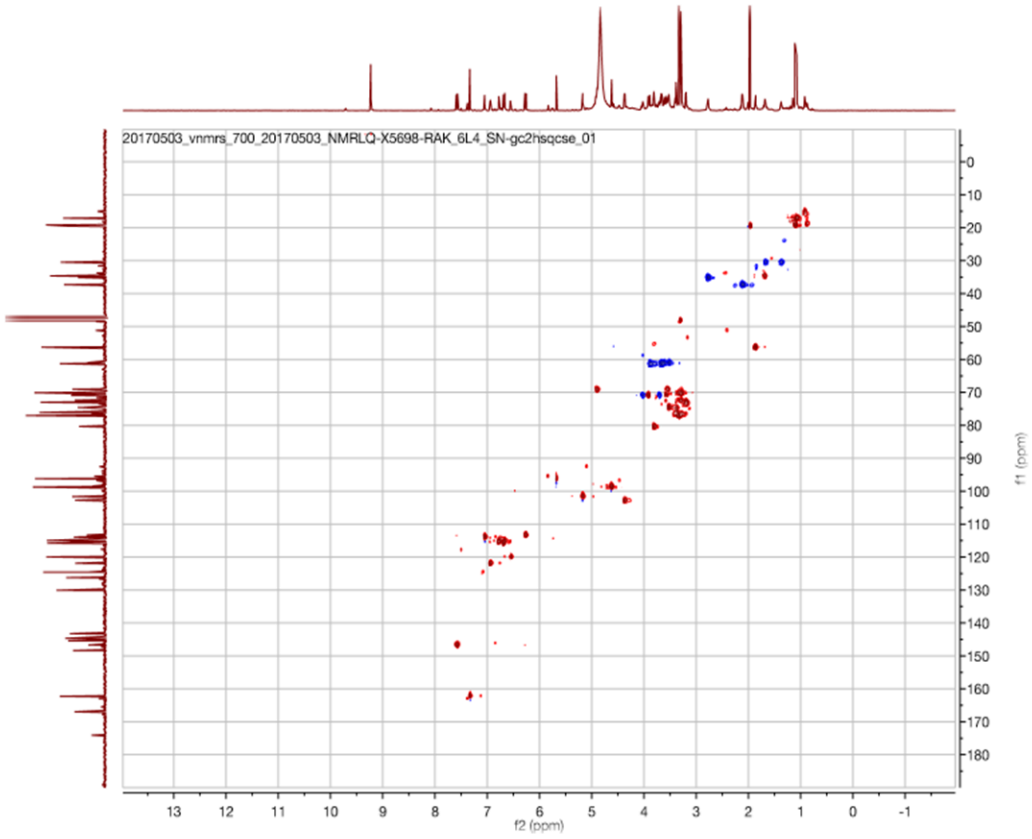


Figure S3. Homonuclear correlation spectroscopy (COSY) Spectrum for Fraction A-3

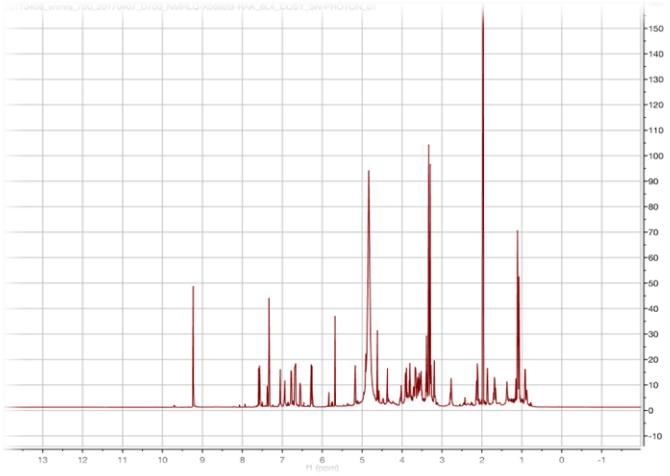


Figure S4. Total correlated spectroscopy (TOCSY) Spectrum.