Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Table S1. FTIR typical peaks of functional groups of Alginate, CMC, and Alginate/CMC carrier

	Wavelength (cm^{-1})		
Functional group	Alginate	CMC	Alginate/CMC carrier
Si-O symmetric stretching			659
antisymmetric C-O-C stretch	1014	1080	1018
-C-O stretching		1340	1323
–COO− symmetric stretching vibration		1440	1413
N-H bending			1588 and 600
-C=O ester stretch	1631	1650	
C–H (sp^3)	2923	2940	2909
-OH group in the trans-isomer			3303
-OH stretch	3421	3470	

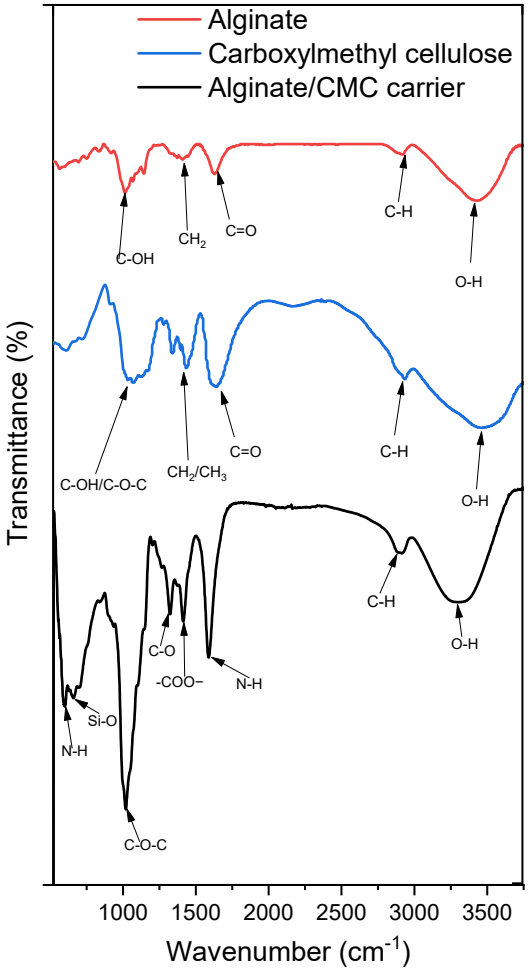
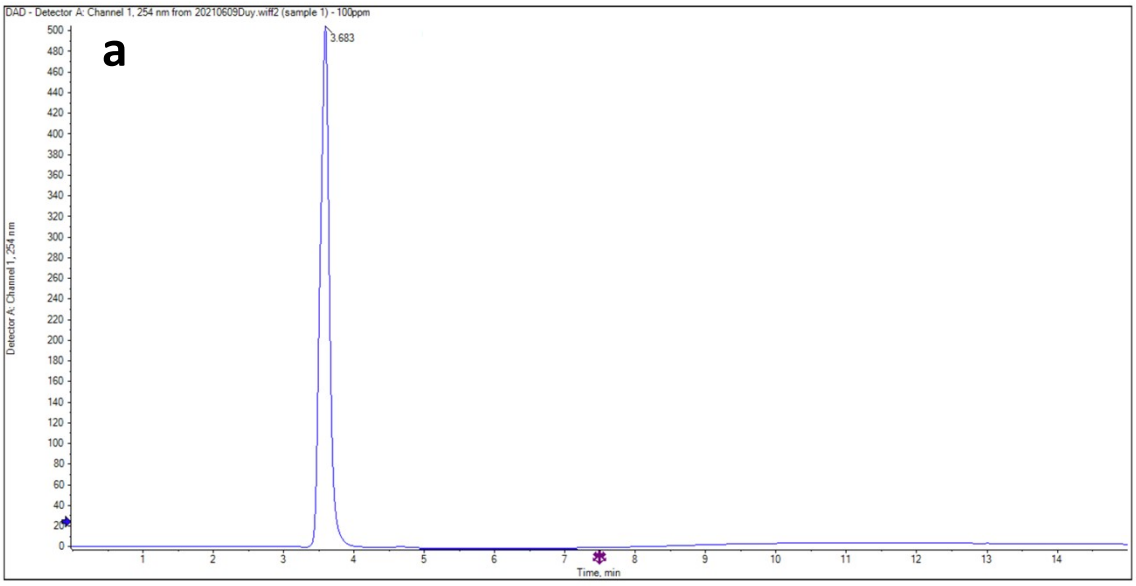
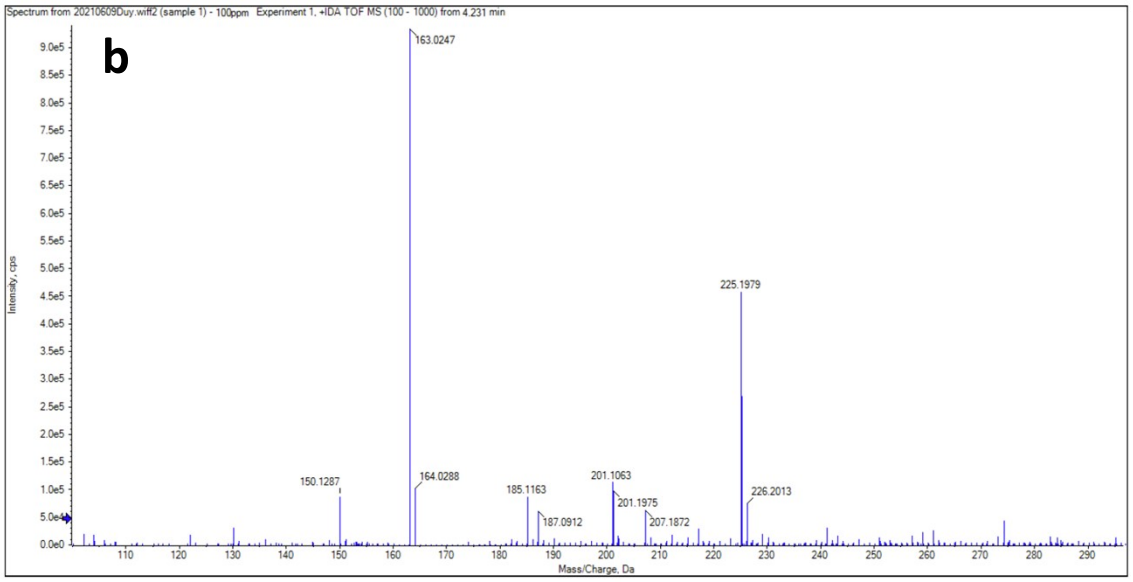
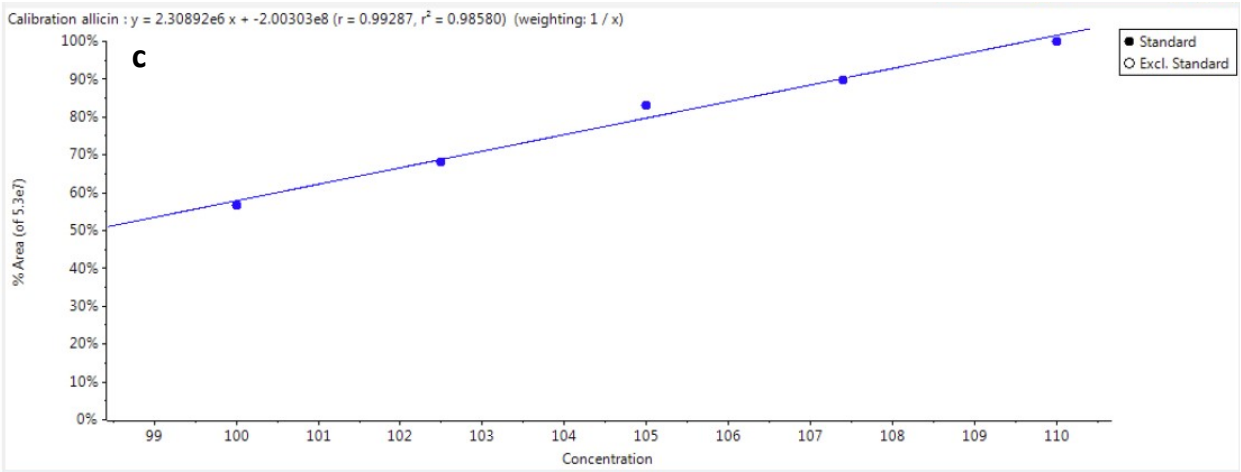


Figure S1. FTIR spectra of Alginate, CMC and Alginate/CMC carrier


DAD - Detector A: Channel 1, 254 nm from 20210609Duy.wiff2 (sample 1) - 100ppm
a
3.683
Detector A: Channel 1, 254 nm
Time, min


Spectrum from 20210609Duy.wiff2 (sample 1) - 100ppm Experiment 1, +IDA TOF MS (100 - 1000) from 4.231 min
b
163.0247
225.1979
150.1287
164.0288
185.1163
201.1063
201.1975
187.0912
207.1872
226.2013
Intensity, cps
Mass/Charge, Da


Calibration allicin : y = 2.30892e6 x + -2.00303e8 (r = 0.99287, r² = 0.98580) (weighting: 1 / x)
c
Standard
Excl. Standard
% Area (of 5.3e7)
Concentration

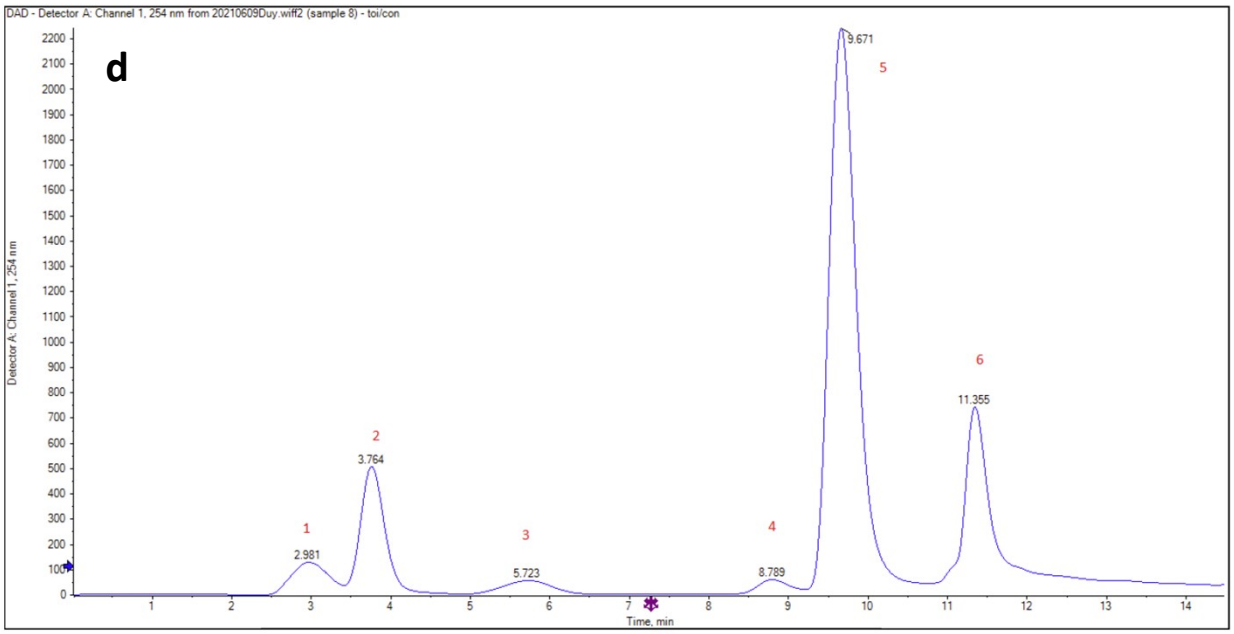
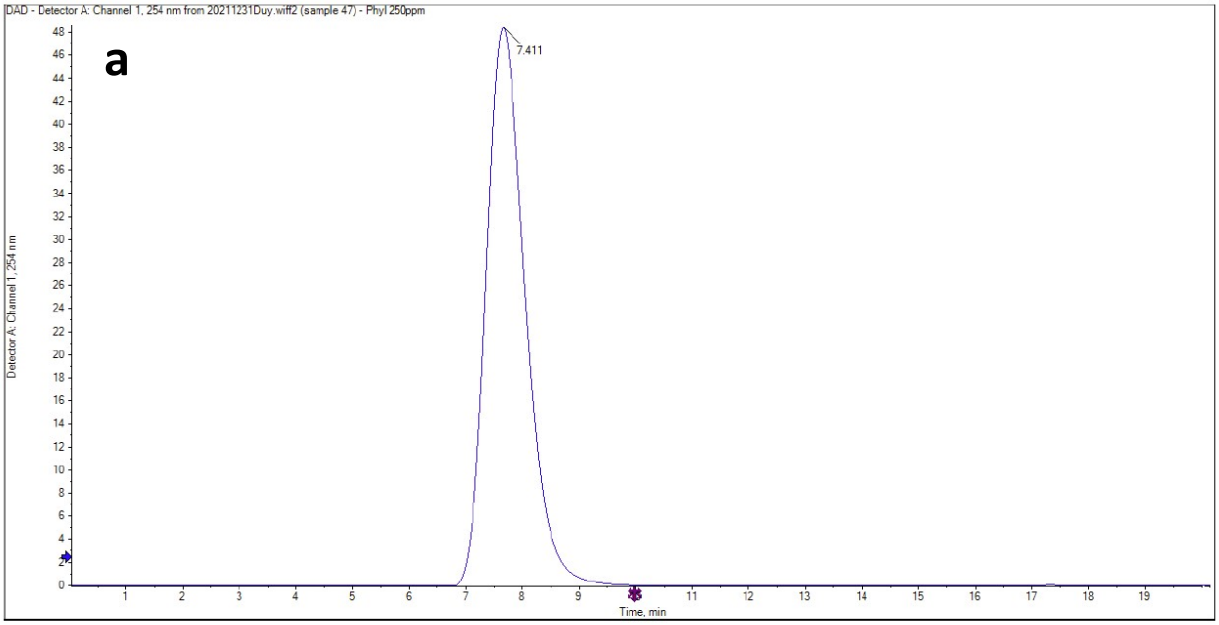
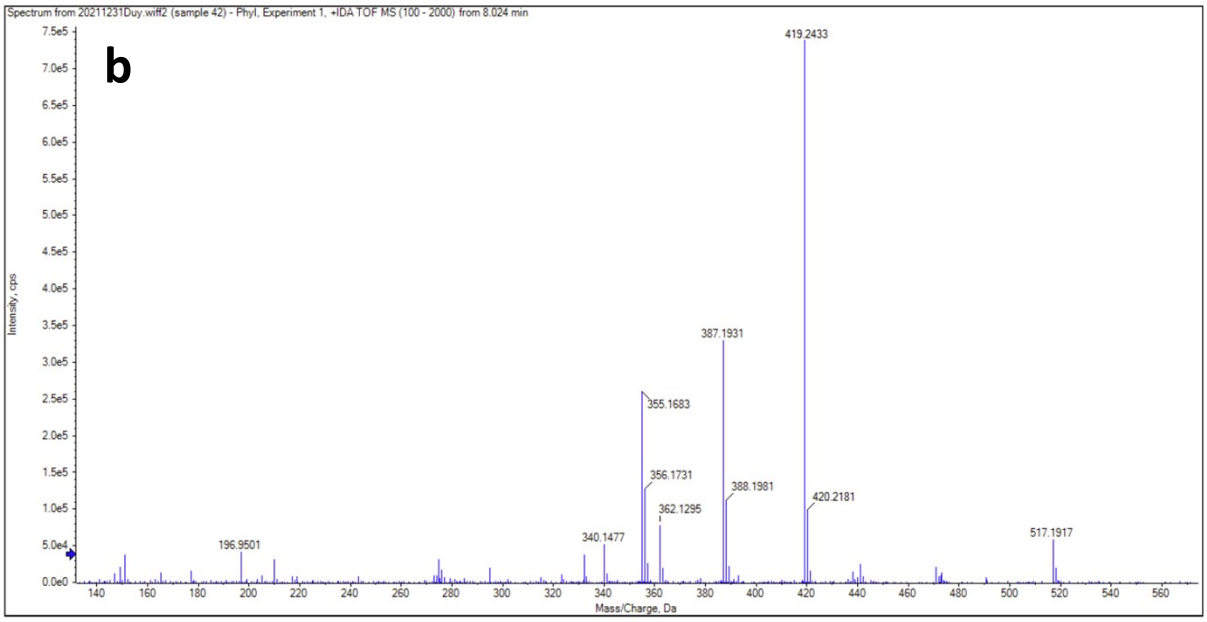


Figure S2. (a) Chromatogram (Retention time of 3.683), (b) Mass Spectral Profile, (c) Calibration curve of standard allicin, and (d) Chromatogram of ethanolic extracts of *Allium sativum* (Allicin at 3.764)


DAD - Detector A: Channel 1, 254 nm from 20211231Duy.wiff2 (sample 47) - Phyl 250ppm
a
7.411
Detector A: Channel 1, 254 nm
Time, min


Spectrum from 20211231Duy.wiff2 (sample 42) - Phyl, Experiment 1, +IDA TOF MS (100 - 2000) from 8.024 min
b
419.2433
387.1931
355.1683
356.1731
388.1981
420.2181
362.1295
340.1477
196.9501
517.1917
Intensity, cps
Mass/Charge, Da

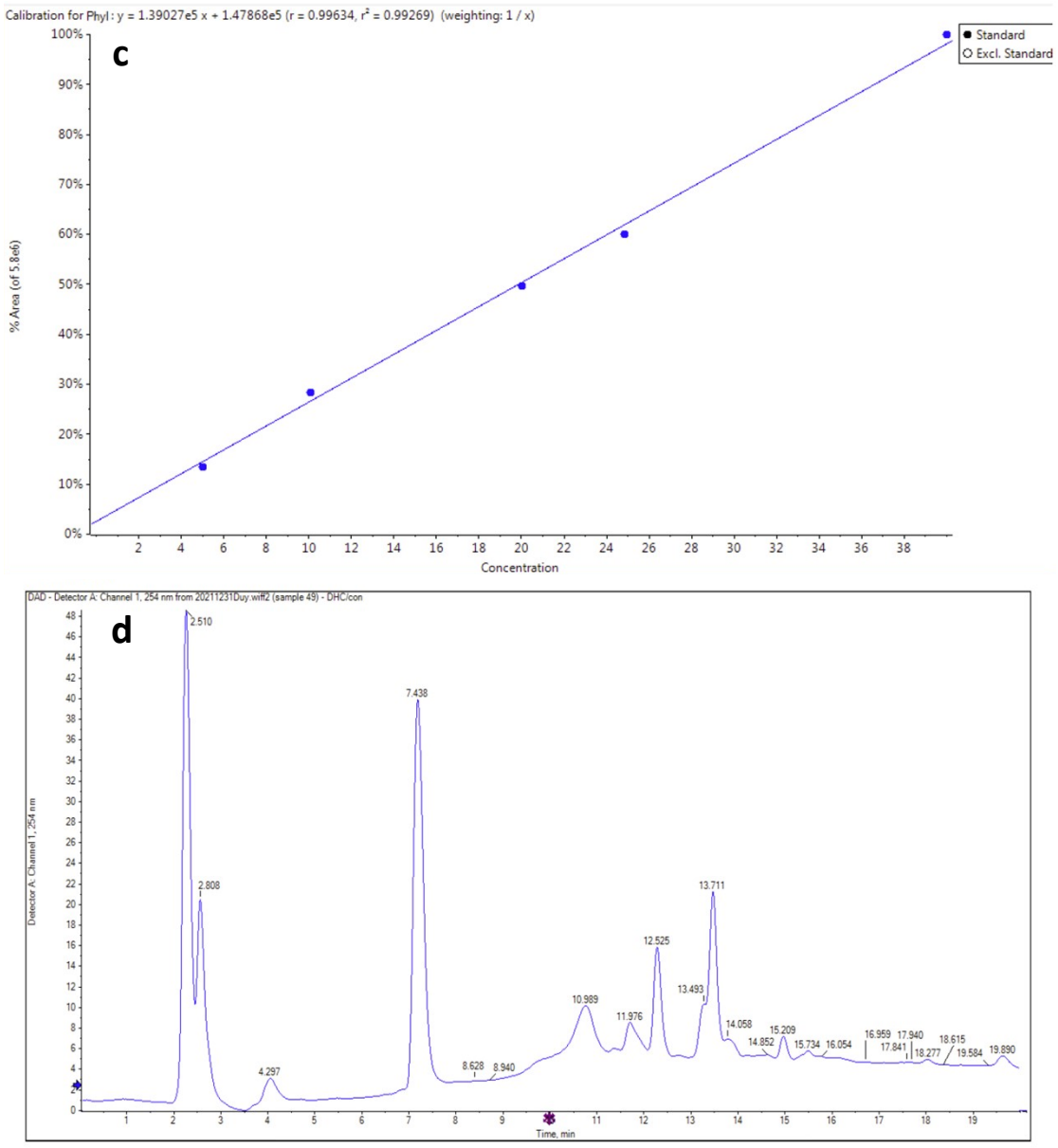


Figure S3. (a) Chromatogram (Retention time of 7.411), (b) Mass Spectral Profile, (c) Calibration curve of standard Phyllanthin, and (d) Chromatogram of ethanolic extracts of *Phyllanthus urinaria* (Phyllanthin at 7.438)

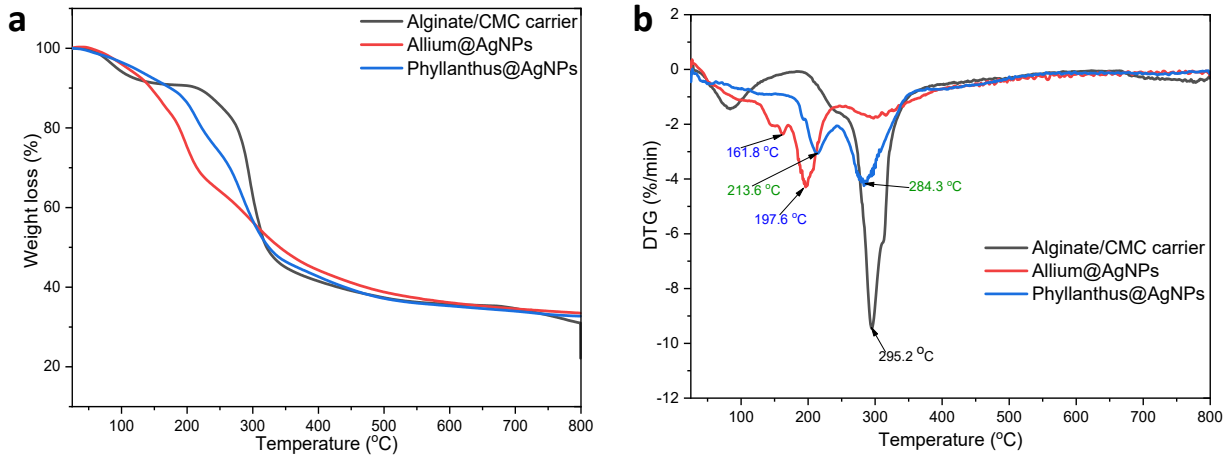


Figure S4. (a) Thermal gravimetrical analysis (TGA) and (b) Differential thermal analysis (DTA) profiles of Alginate/CMC carrier, Allium@AgNPs and Phyllanthus@AgNPs

Table S2. Weight loss steps of the samples

Sample	Water detachment		Decomposition of biomolecules in the extracts			Decomposition and carbonization of polymers			% ash/ total dried weight	% extract/ total dried weight
	Temp. range (°C)	Weight loss (%)	Temp. range (°C)	DTG peak (°C)	Weight loss (%)	Temp. range (°C)	DTG peak (°C)	Weight loss (%)		
		(a)			(b)			(c)	(d)*	(e)**
Alginate/CMC carrier	80-120	8.6				200-800	295.2	60.39	43.34	
Allium@Ag NPs	80-120	7.42	150-230	197.6	26.95	230-800	204.1	32.22	44.10	29.11
Phyllanthus@Ag NPs	80-120	8.62	150-240	213.6	16	240-800	284.3	42.61	45.29	17.51

* (d) = (100 – (a)- (b)-(c))/(100- (a))
** (e)=(b)/(100-(a))