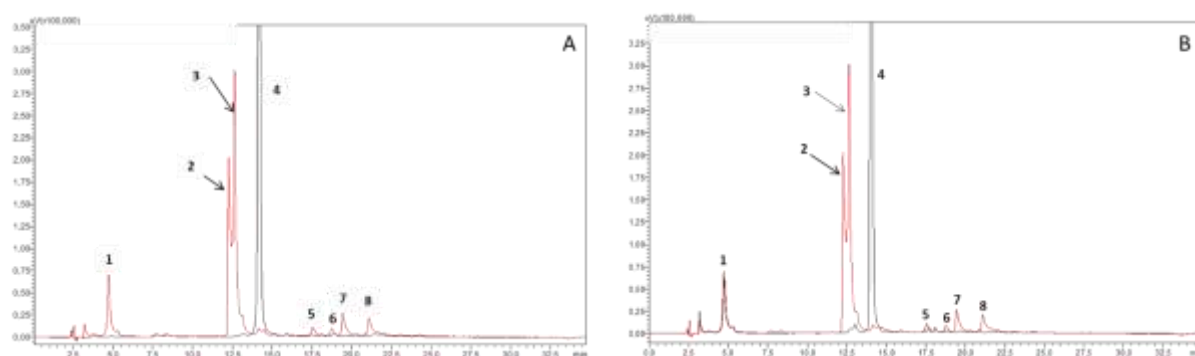
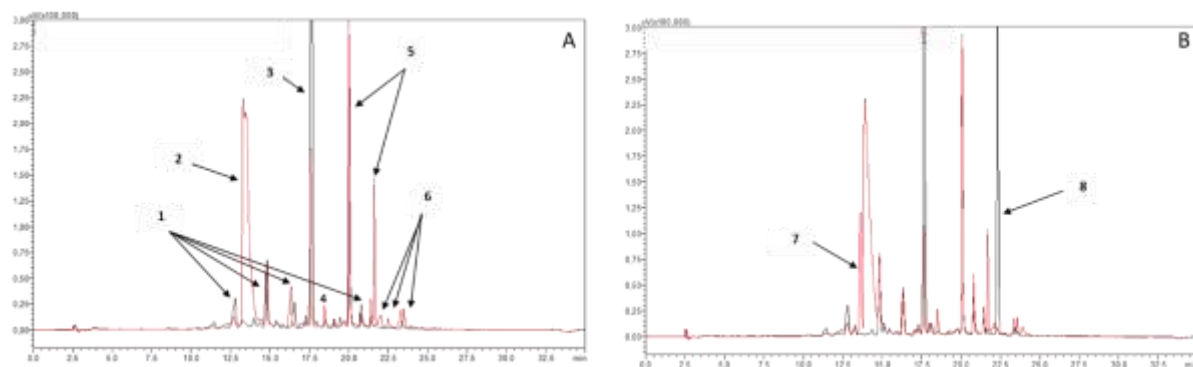


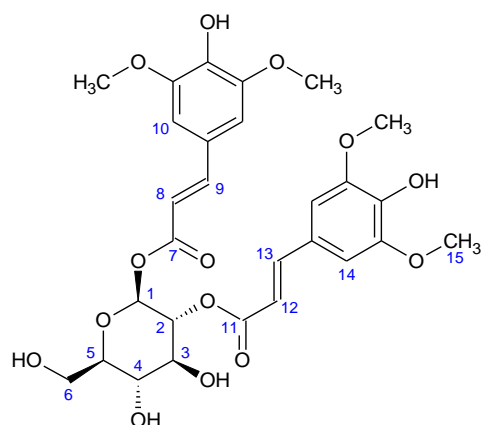
Supporting information:



Supporting information, Figure 1. Chromatograms obtained after enzymatic hydrolysis of U-SFM with 30 nkat AnFaeB/g DDM (A) and 10 nkat ChIE/g DDM (B) at t = 0 min (red) and t = 240 min (black) at 326 nm. 3-*O*-caffeoylquinic acid (3-CQA) (1), 4-*O*-caffeoylquinic acid (4-CQA) (2), 5-*O*-caffeoylquinic acid (5-CQA) (3), caffeic acid (4), 5-*O*-coumaroylquinic acid (5-CoQA) (5), 5-*O*-feruloylquinic acid (5-FQA) (6), 3,5-Di-*O*-caffeoylquinic (3,5-diCQA) (7) and 4,5-Di-*O*-caffeoylquinic (3,5-diCQA) (4,5-diCQA) (8). From Laguna O., 2019.

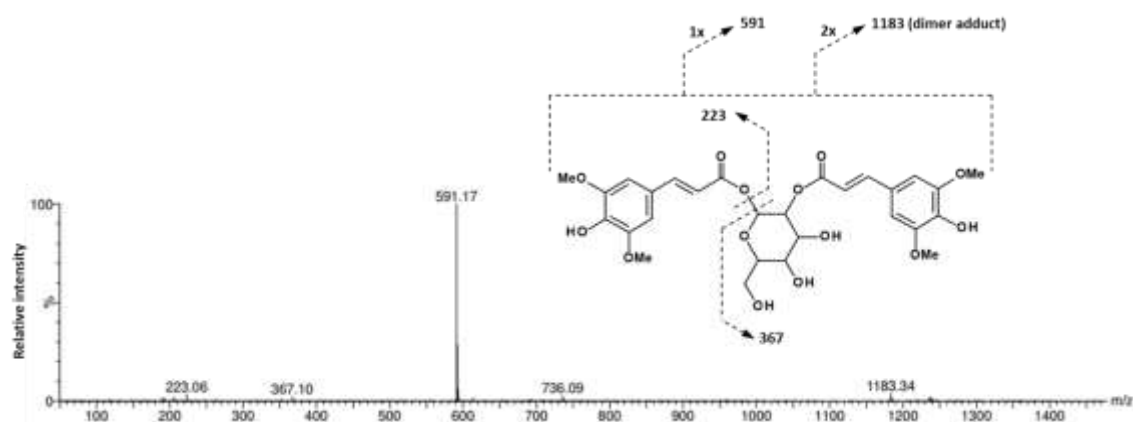


Supporting information, Figure 2. Chromatograms obtained after enzymatic hydrolysis of U-RSM (A) and U-RSM dry methanolic extract (B) with 39 nkat AnFaeA/g DDM at $t = 0$ min (red) and $t = 240$ min (black) at 323 nm. Sinapoyl-kaempferol derivatives (1), sinapine (SNP) (2), trans-sinapic acid (SA) (3), cis-sinapic acid (SA) (4), di-sinapoyl derivatives (5), Tri-sinapoyl derivatives (6), sinapoyl glucose (7) and 1,2-di-*O*-sinapoyl- β -D-glucose (8). From Laguna O., 2019.

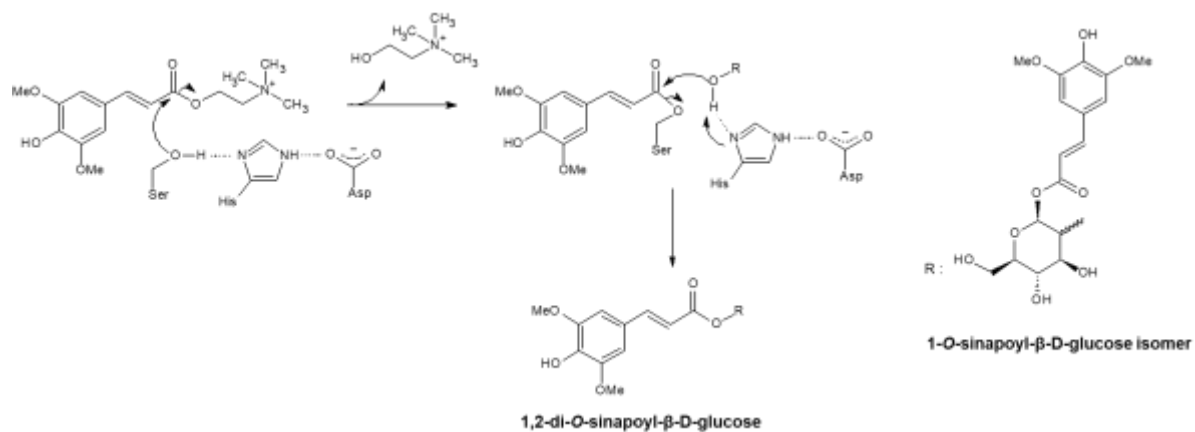


n°	(d/ppm) ¹³ C	type	(d/ppm) ¹ H	Multiplicity
1	92.0	CH	5.76	d*, J = 8.4 Hz
2	72.7	CH	4.90	dd*, J = 8.4, 9.2 Hz
3	74.1	CH	3.57	t*, J = 9.2 Hz
4	69.8	CH	3.31	m*
5	78.1	CH	3.40	m
6	60.4	CH ₂	3.52	dd, J = 5.4, 12.0 Hz
7	165.1	CO	-	-
8	113.4	CH	6.47	d, J _{trans} = 15.8 Hz
9	147.4	CH	7.56	d, J _{trans} = 15.8 Hz
10	106.6	CH	7.00	s*
11	165.7	CO	-	-
12	114.6	CH	6.52	d, J _{trans} = 15.8 Hz
13	145.9	CH	7.54	d, J _{trans} = 15.8 Hz
14	106.3	CH	6.98	s
15	56.2	CH ₃	3.78-3.77	s

Supporting information, Figure 3. Chemical structure and NMR ¹H and ¹³C data of 1,2-di-*O*-sinapoyl-β-D-glucose. From Laguna *et al.*, 2019.



Supporting information, Figure 4. Chemical structure and LC-MS data of 1,2-di-*O*-sinapoyl-β-D-glucose. From Laguna *et al.*, 2019.



Supporting information, Figure 5. Possible mechanism for the formation of 1,2-di-*O*-sinapoyl- β -D-glucose by transesterification of sinapine with 1-*O*-sinapoyl- β -D-glucose catalyzed by AnFaeA. Note: Mechanism adapted from Dilokpimol *et al.* (2016).