

Table S1: Total Polar Compounds during deep frying Olive oil (OO), Extra Virgin Olive Oil (EVOO) and blends with sesame oil (SO).

Time/h	Frying Cycle	TPCs %							
		OO	OO blends with SO			EVOO	EVOO blends with SO		
			5%	10%	20%		5%	10%	20%
0	1	5.5	3.5	3.5	4	3	3	3	3.5
0.25	2	6	4.5	5	5.5	4	4.5	4.5	4.5
0.5	3	6.5	5	5.5	6	4.5	4.5	5	5
0.75	4	7	5	6	6	4.5	5	5	5
1	5	7	5	6	6.5	4.5	5.5	5.5	5.5
1.25	6	6.5	5.5	6	6.5	4.5	5.5	5.5	5.5
1.5	7	7	5.5	6	6.5	5	5.5	5.5	5.5
1.75	8	7.5	5.5	6	6.5	5	5.5	5.5	5.5
2	9	7.5	5.5	6	6.5	5	6	5.5	5.5
2.25	10	8	6	6	6.5	5	6	5.5	5.5
2.5	11	8	6	6	6.5	5.5	6	5.5	5.5
2.75	12	8	6	6	6.5	5.5	6	5.5	5.5
3	13	8.5	6	6	6.5	5.5	6.5	5.5	5.5
3.25	14	8.5	6.5	6.5	6.5	5.5	6.5	6	5.5
3.5	15	8.5	6.5	6.5	6.5	6	6.5	6	5.5
3.75	16	9	6.5	6.5	6.5	6	7	6.5	5.5
4	17	9	7	7	7	6	7	6.5	6
4.25	18	9	7	7	7	6.5	7	6.5	6
4.5	19	9.5	7	7	7.5	6.5	7.5	7	6
4.75	20	9.5	7	7.5	7.5	7	7.5	7	6.5
5	21	9.5	7	7.5	7.5	7	7.5	7	6.5
5.25	22	10	7	7.5	8	7	8	7.5	7
5.5	23	10	7.5	8	8	7.5	8	7.5	7
5.75	24	10	7.5	8	8.5	7.5	8	7.5	7
6	25	10.5	8	8	8.5	7.5	8.5	8	7.5
6.25	26	11	8	8.5	9	8	8.5	8	7.5
6.5	27	11	8	8.5	9	8	8.5	8.5	8
6.75	28	11	8.5	8.5	9	8.5	9	8.5	8
7	29	11.5	8.5	8.5	9.5	8.5	9	8.5	8.5
7.25	30	11.5	9	9	9.5	9	9	9	8.5
7.5	31	11.5	9	9	9.5	9	9.5	9	8.5
7.75	32	12	9	9	10	9	9.5	9	9
8	33	12.5	9.5	9.5	10	9.5	9.5	9.5	9
8.25	34	12.5	9.5	9.5	10.5	9.5	10	9.5	9
8.5	35	13	10	10	11	9.5	10	9.5	9.5
8.75	36	13	10	10	11	10	10	10	9.5
9	37	13	10.5	10.5	11	10	10	10	9.5
9.25	38	13	10.5	10.5	11.5	10	10.5	10	10
9.5	39	13.5	11	11	11.5	10.5	10.5	10.5	10
9.75	40	14	11	11	12	10.5	10.5	10.5	10
10	41	14	11	11.5	12	11	11	11	10.5
10.25	42	14	11.5	11.5	12	11	11	11	10.5

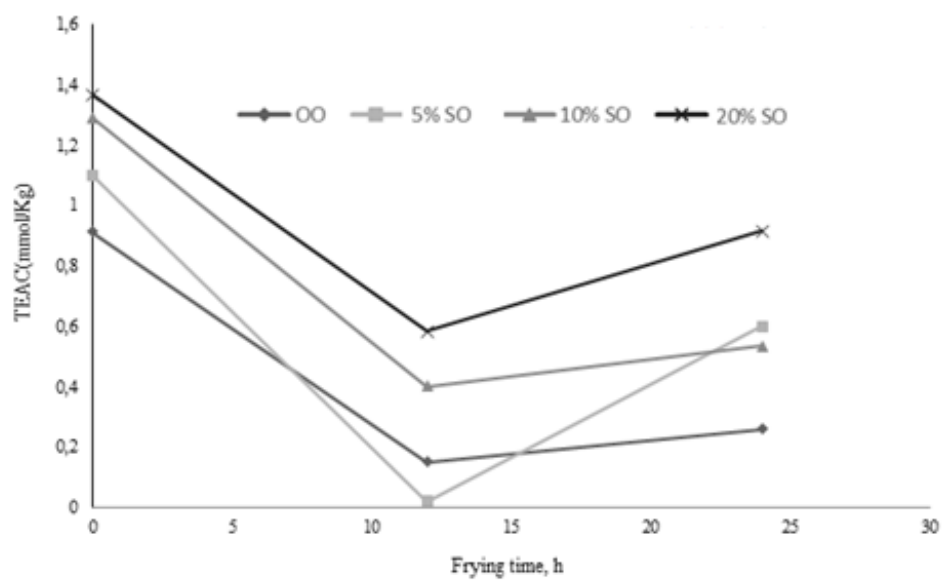
10.5	43	14.5	11.5	11.5	12.5	11	11	11	11
10.75	44	14.5	12	12	12.5	11.5	11.5	11.5	11
11	45	15	12	12	13	11.5	11.5	11.5	11
11.25	46	15	12	12	13	11.5	12	12	11.5
11.5	47	15	12.5	12.5	13	12	12	12	11.5
11.75	48	15.5	13	12.5	13.5	12	12.5	12	11.5
12	49	15.5	13.5	13	13.5	12	12.5	12.5	11.5
12.25	50	16.5	13.5	13.5	14	12.5	12.5	12.5	12
12.5	51	16.5	14	14	14	13	13	13	12.5
12.75	52	16.5	14.5	14	14.5	13	13	13	12.5
13	53	17	15	14.5	14.5	13.5	13	13	13
13.25	54	17	15	14.5	15	14	13.5	13.5	13
13.5	55	18	15.5	14.5	15	14	13.5	13.5	13.5
13.75	56	18	15.5	14.5	15	14	13.5	13.5	13.5
14	57	18	16	15	15.5	14.5	14	14	14
14.25	58	18.5	16	15	15.5	14.5	14	14	14.5
14.5	59	18.5	16	15.5	15.5	14.5	14.5	14.5	14.5
14.75	60	18.5	16.5	16	16	15	14.5	14.5	14.5
15	61	18.5	16.5	16	16	15	14.5	14.5	15
15.25	62	19	17	16	16	15	15	15	15
15.5	63	19	17	16	16.5	15	15	15	15
15.75	64	19.5	17	16.5	17	15.5	15.5	15	15.5
16	65	20	17.5	16.5	17.5	15.5	15.5	15.5	15.5
16.25	66	20	17.5	16.5	17.5	15.5	15.5	15.5	16
16.5	67	20	18	17	17.5	16	16	16	16
16.75	68	20.5	18	17	18	16	16	16	16
17	69	20.5	18.5	17	18	16	16.5	16.5	16
17.25	70	20.5	19	17.5	18	16.5	16.5	16.5	16.5
17.5	71	21	19	17.5	18.5	16.5	16.5	16.5	16.5
17.75	72	21	19.5	18	18.5	17	17	17	16.5
18	73	21	19.5	18	19	17	17	17	17
18.25	74	21.5	20	18.5	19	17	17.5	17.5	17
18.5	75	21.5	20	18.5	19	17.5	17.5	17.5	17.5
18.75	76	22	20.5	19	19.5	18	17.5	17.5	17.5
19	77	22	20.5	19	19.5	18	18	18	18
19.25	78	22.5	21	19.5	20	18.5	18	18.5	18
19.5	79	22.5	21	20	20	18.5	18.5	18.5	18.5
19.75	80	23	21	20	20.5	19	18.5	18.5	18.5
20	81	23	21.5	20	20.5	19	19	19	19
20.25	82	23	21.5	20.5	21	19.5	19.5	19	19
20.5	83	23.5	22	20.5	21	19.5	19.5	19.5	19.5
20.75	84	24	22	20.5	21.5	20	19.5	19.5	20
21	85	24.5	22.5	20.5	21.5	20	20	20	20
21.25	86	24.5	22.5	21	22	20.5	20	20	20
21.5	87	25	22.5	21	22	20.5	20.5	20.5	20.5
21.75	88		23	21	22	21	20.5	20.5	20.5
22	89		23.5	21.5	22.5	21.5	21	21	20.5
22.25	90		23.5	21.5	22.5	21.5	21	21	21

22.5	91	24	22	23	22	21.5	21.5	21
22.75	92	24.5	22	23.5	22	21.5	21.5	21.5
23	93	25	22.5	23.5	22.5	22	22	21.5
23.25	94		23	24	22.5	22.5	22.5	22
23.5	95		23.5	24	23	22.5	22.5	22
23.75	96		23.5	24.5	23	23	23	22.5
24	97		24	25	23.5	23	23	23
24.25	98		24		23.5	23.5	23.5	23
24.5	99		24		24	23.5	23.5	23.5
24.75	100		24.5		24.5	24	23.5	23.5
25	101		25		24.5	24	24	24
25.25	102				25	24.5	24	24
25.5	103					25	24.5	24.5
25.75	104						25	24.5
26	105							25

Table S2. The retention time, standard curve, LOD and LOQ for sesame lignans.

Sesame lignans	Retention time(min)	Regression line		LOD (mg/mL)	LOQ (mg/mL)
		Standard curve equation	Correlation (R ²)		
sesamol	4,58	y= 0.00241x + 0.00502	0.994	0.002	0.009
sesamin	15,55	y=0.00281x +0.00036	0.9997	0.005	0.02
sesamolin	20,77	y=0.00237x +0.0098	0.99	0.005	0.01

(a)



(b)

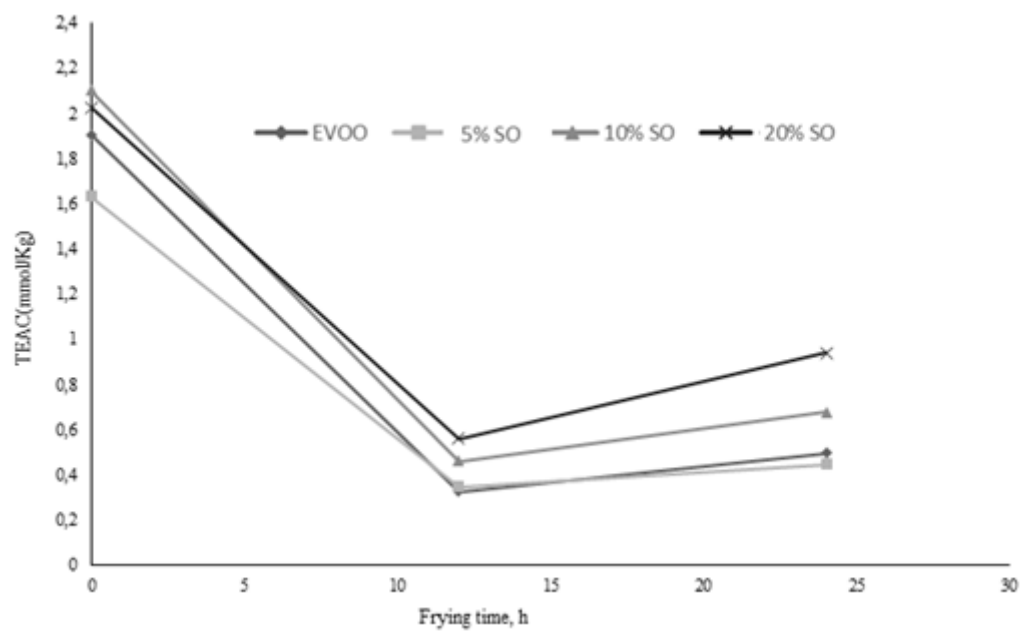


Figure S1: TEAC values (mmol/Kg) during deep frying: (a) OO, (b) EVOO blends with SO

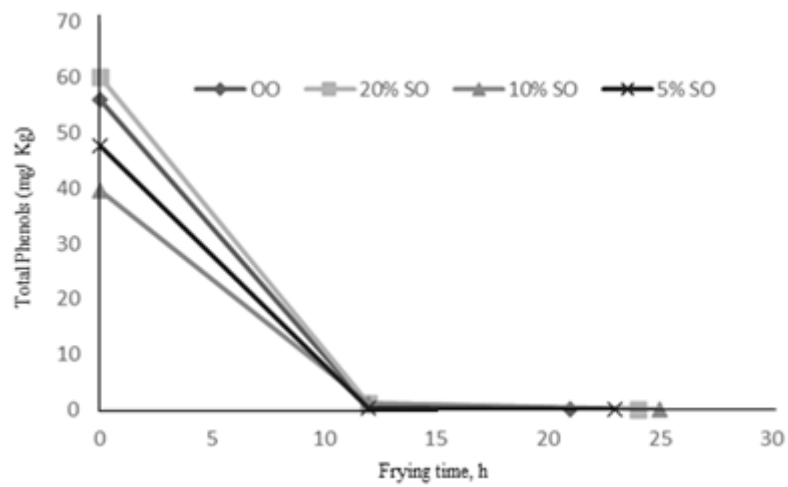


Figure S2: Total phenols (mg GA/Kg oil) during deep frying: OO and blends with SO

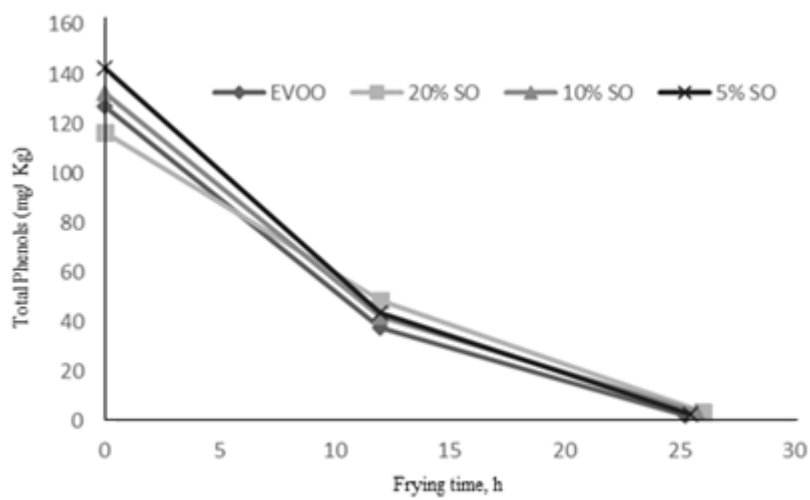


Figure S3: Total phenols (mg GA/Kg oil) during deep frying EVOO and blends with SO

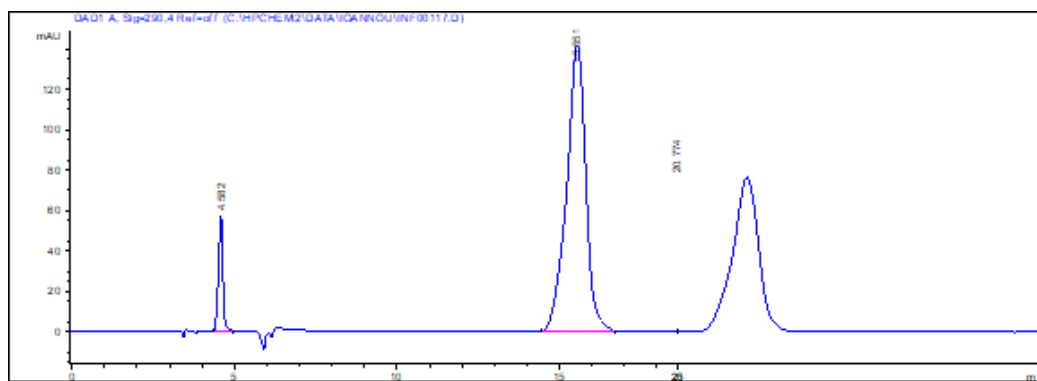


Figure S4: HPLC chromatogram of a mixed standard solution of sesamol, sesamin, and sesamolin.

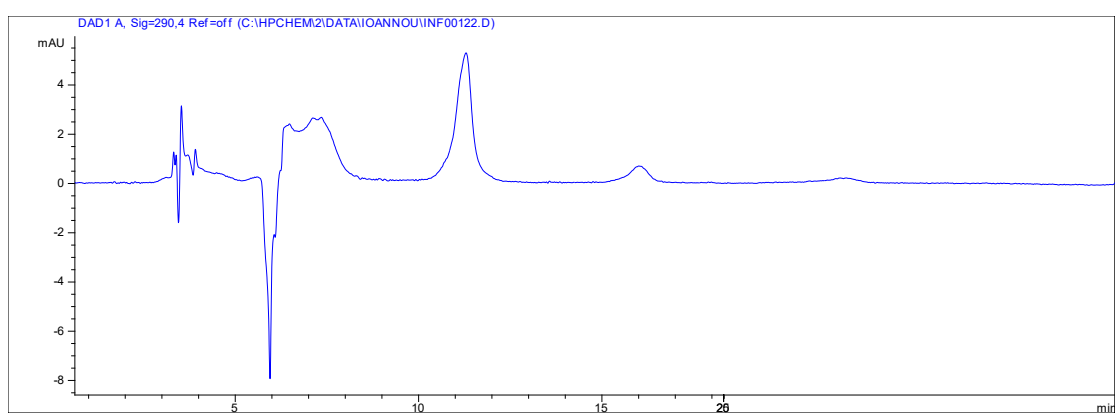


Figure S5: HPLC chromatogram of blend 20% v/v Sesame Oil in Olive Oil before frying.

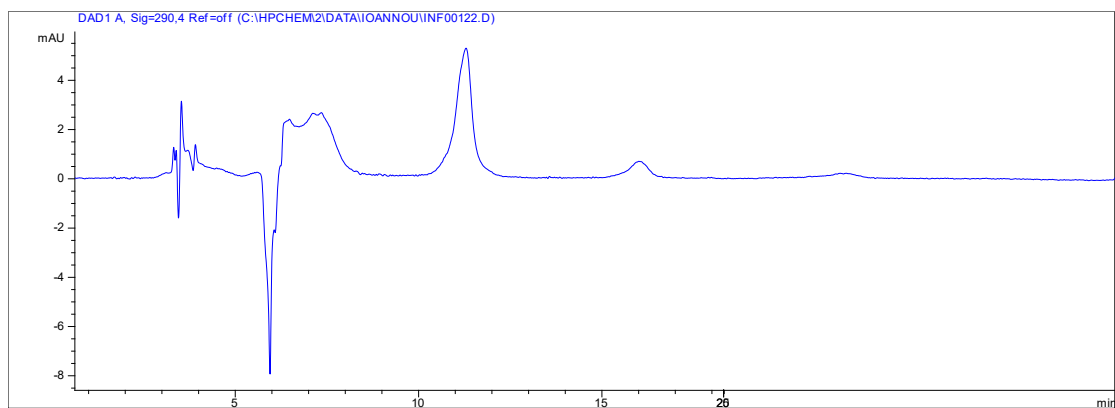


Figure S6: HPLC chromatogram of blend 20% v/v Sesame Oil in Olive Oil after 30 min frying.

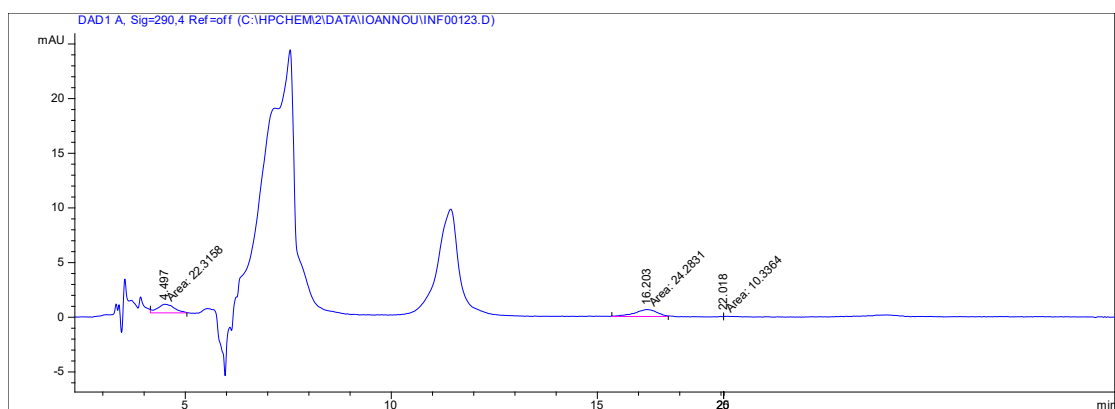


Figure S7: HPLC chromatogram of blend 20% v/v Sesame Oil in Olive Oil after 1h of frying.

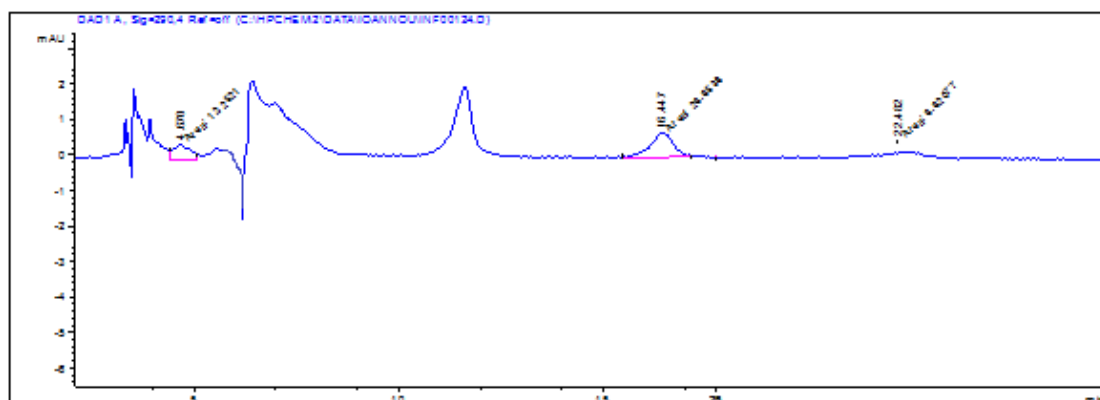


Figure S8: HPLC chromatogram of blend 20% v/v Sesame Oil in Olive Oil after 2h of frying.

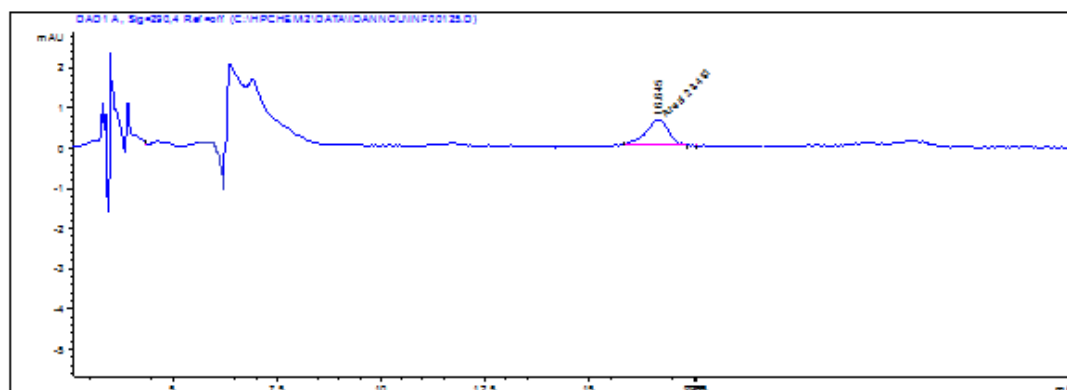


Figure S9: HPLC chromatogram of blend 20% v/v Sesame Oil in Olive Oil after 4h of frying.

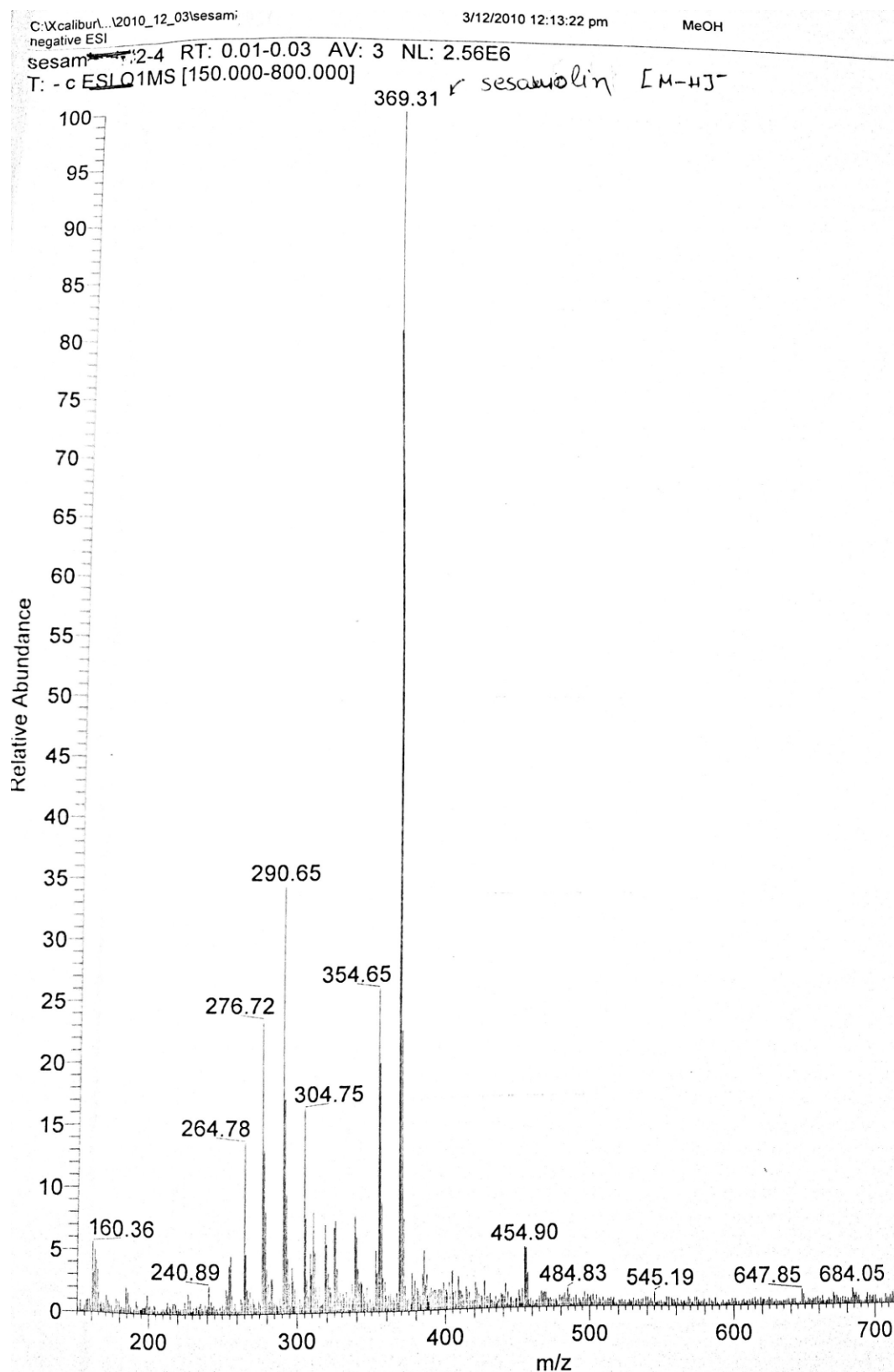


Figure S10: mass spectrum of Sesamol in

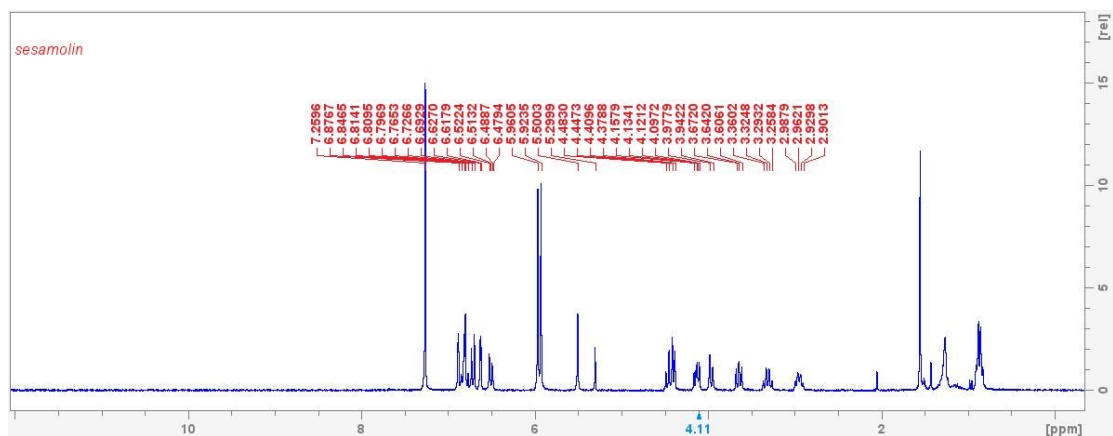


Figure S11 : ^1H - NMR spectrum of sesamolin.

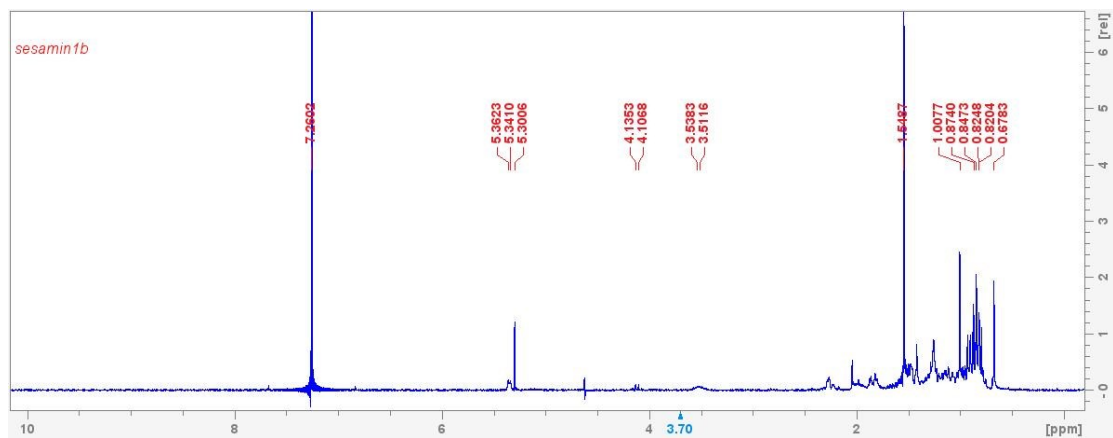


Figure S12 : ^1H - NMR spectrum of sesamin.