

Supplemental materials

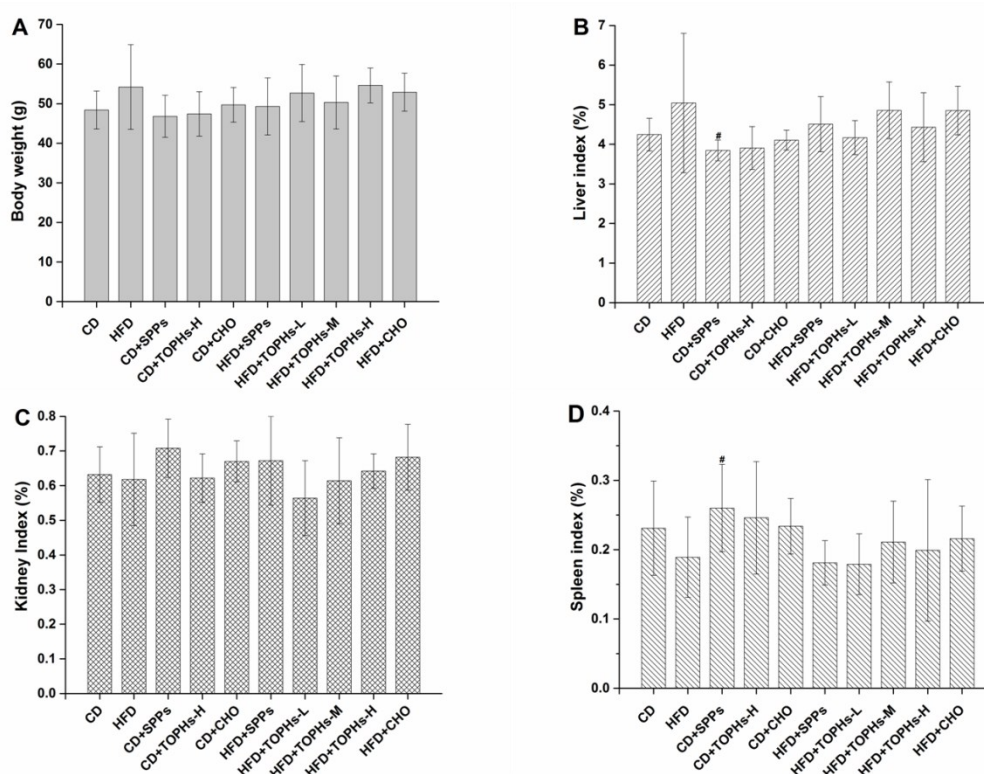


Figure S1. Effects of TOPHs on body weight and organ indices in mice. (A) body weight. (B) liver index. (C) kidney index. (D) spleen index. Values are expressed as the mean \pm SD of six mice in each group. Significant differences were observed between the treatment groups ($\#p < 0.05$). CD group: mice were fed daily with a standard diet and gavaged with deionized water at a dose of 1 ml daily for 8 weeks. HFD group: mice were fed daily with the high-fat diet and gavaged daily with 1 ml of deionized water. CD+SPPs group: mice were fed daily with a standard diet and treated with SPPs by gastric gavage daily at a dose of 2 g/kg body weight. CD+TOPHs-H group: mice were fed daily with a standard diet and treated with TOPHs by gastric gavage daily at a dose of 5 g/kg body weight. CD+CHO group: mice were fed daily with a standard diet and administered cholestyramine at a daily dose of 0.2 g/kg body weight. HFD+SPPs group: mice were fed daily with the high-fat diet and treated with SPPs at a daily dose of 2.0 g/kg body weight. HFD+TOPHs-L, HFD+TOPHs-M and HFD+TOPHs-H groups: mice were fed daily with the high-fat diet and treated daily with TOPHs by gastric gavage at a dose of 0.5 g/kg, 2.5 g/kg and 5.0 g/kg body weight, respectively. HFD+CHO group: mice were fed daily with the high-fat diet and treated with cholestyramine at a daily dose of 0.2 g/kg body weight.

Table S1. The peptide sequences identified in the TOPHs-5 fraction using LC-ESI-Q-TOF-MS/MS.

NO.	RT (time)	Sequence	Observed ^a (m/z)	Charge state (+) ^b	Calculated ^c (Mr)	pI ^d	Hydrophobicity ^d
Fr.1							
1	7.35	ITGESQ GK	819.4206	1	818.4134	6.98	12.50%
2	8.52	ATVETDGGK	877.4266	1	876.4189	4.07	22.22%
3	12.13	AELSEGK	733.372	1	732.3654	4.26	28.57%
4	12.34	AAADGPMK	760.3665	1	759.3585	6.71	62.50%
5	12.84	TNGPPTSL	786.3726	1	785.3919	6.4	37.50%
6	13.65	APALEGA	628.3661	1	627.3228	3.34	71.43%
7	15.03	EAGEGGV	618.32	1	617.2657	3.11	28.57
8	17.88	ALGQNPTNK	942.5007	1	941.493	10.05	33.33%
9	18.68	EQDTQGLVAPK	593.2765	2	1184.6037	4.07	36.36%
10	18.82	TASPQQAQEVHEK	726.8598	2	1451.7005	5.3	30.77%
11	18.88	LGVAAGA	558.3619	1	557.3173	6.02	71.43%
12	20.05	VQHEMEEAQR	693.3106	2	1384.6041	4.25	27.27%
13	21.98	IDTGAPD	344.6854	2	687.3075	2.81	42.86%
14	24.92	AILGGTG	588.373	1	587.3279	5.98	42.86%
15	25.01	IHFGTSGK	846.4499	1	845.4396	10.14	25%
16	25.48	GPAGAQQAVGSPGPK	625.8298	2	1249.6415	10.05	46.67%
17	27.30	ADIAESQV NK	537.7763	2	1073.5353	4.07	40.00%
18	27.50	SKYETDAIQR	605.8085	2	1209.5989	6.75	20%
19	28.30	DSYVGDEA QSK	599.7667	2	1197.515	3.7	18.18%
20	28.57	ELSASDK	749.3695	1	748.3603	4.07	28.57%
21	29.63	HQGV MVGMGQK	1171.5731	1	1170.5638	9.84	36.36%
22	30.52	KDFPKSPK	946.463	1	945.5284	10.24	37.50%
23	31.75	EIESLER	875.4477	1	874.4396	3.96	28.57%
24	32.95	AGFAGDDAPR	488.729	2	975.441	3.88	50%
25	33.05	ANALAA NLDKK	564.8228	2	1127.6298	9.85	54.55%
26	34.28	EQVAMVER	961.4809	1	960.4698	4.26	50%
27	37.72	GNPGAAGASGAQQPIGPR	767.8915	2	1533.7648	11.04	44.44%
28	40.75	TGDGVNDAPALK	579.2939	2	1156.5724	3.88	41.67%

29	40.83	VLGSGTNLDSAR	595.3149	2	1188.6099	6.8	33.33%
30	40.95	INEMLDTK	482.2462	2	962.4743	4.07	37.50%
31	41.25	FQSINAENTENR	776.3577	2	1550.6961	3.96	23.08%
32	41.27	ILGNPSADDMANKR	501.2554	3	1500.7354	6.93	42.86%
33	41.85	AGLDPAGQQAMR	607.8045	2	1213.5873	6.74	50%
34	43.18	ANALANLNDK	1000.5443	1	999.5349	6.71	60%
35	45.49	ATDAEGDVASLNR	659.8176	2	1317.6161	3.7	38.46%
36	46.30	ILGNPSADDMANK	673.3275	2	1344.6343	3.88	46.15%
37	47.53	ENQSVLITGESGAGK	745.3822	2	1488.742	4.26	26.67%
38	49.15	VIADNVKDWSK	637.8437	2	1273.6666	6.89	45.45%
39	49.75	ITALAPSTMK	516.7935	2	1031.5685	10.13	60%
40	50.24	GILAADESTGSVAK	659.8494	2	1317.6776	4.07	42.86%
41	50.34	LDEAENLAMK	567.2811	2	1132.5434	3.83	50%
42	50.48	VGAAGPAGIVPPGPAGPSGKDGPR	713.7179	3	2138.1233	10.11	52%
43	50.55	VAEQELVDASER	673.3375	2	1344.6521	3.68	41.67%
44	50.75	SDLATALAK	889.5025	1	888.4916	6.51	55.56%
45	50.76	ILGNPTADDMANK	680.3353	2	1358.65	3.88	46.15%
46	51.25	LEEAGGATAAQIEMNK	816.9012	2	1631.7824	3.96	43.75%
47	51.35	LQDAEESIEAVNSK	766.8771	2	1531.7365	3.68	35.71%
48	51.47	IEDEQSLGAQLQK	729.8776	2	1457.7362	3.83	30.77%
49	51.83	VQLELNQVK	1070.6247	1	1069.6131	6.96	44.44%
50	51.99	EITALAPSTMK	1161.6195	1	1160.6111	6.94	54.55%
51	52.13	GEAIDSMIPAQK	630.3184	2	1258.6227	4.07	50%
52	52.30	GTYYDDYVEGLR	644.2966	2	1286.5779	3.7	18.18%
53	52.33	VMDSMQSTLDAEVR	791.3677	2	1580.7174	3.7	42.86%
54	52.52	LVIIEGDLER	578.8324	2	1155.6499	3.83	50%
55	52.77	SYELPDGQVITIGNER	895.9484	2	1789.8846	3.83	31.25%
56	53.04	EITALAPSTM	1033.5209	1	1032.5161	3.27	60%
57	53.09	DVLASMGQLNVK	637.8411	2	1273.67	6.81	50%
58	53.14	SSIFDAGAGIALNDHFVK	931.4741	2	1860.937	5.1	50%
59	53.51	YVDIVVLK	948.5015	1	947.5692	6.47	62.50%
60	53.80	LNFDAFLPMLK	654.8532	2	1307.6948	6.71	72.73%

61	53.98	VINDNFGIVEGLMSTVHAITATQK	853.447	3	2557.321	5.22	45.83%
62	54.08	VINDNFGIVEGLMTTVHAVTATQK	853.4457	3	2557.321	5.22	45.83%
Fr.2							
1	0.57	SAGNTIQKR	974.8154	1	973.5305	11.51	22.22%
2	10.55	AGEGGGA	518.2369	1	517.2132	3.34	28.57%
3	28.34	DHAVASS	686.2773	1	685.3031	4.94	42.86%
4	54.74	GTYYDYVEGLR	644.3015	2	1286.5779	3.7	18.18%
5	54.94	LVTWYDNEFGYSNR	882.4125	2	1762.7951	4.07	28.57%
6	54.99	SFPLAEFL	923.5041	1	922.48	3.31	75%
7	55.87	LNFD AFLPMLK	654.8566	2	1307.6948	6.71	72.73%

^a Molecular ion mass observed in the LC-ESI-Q-TOF-MS/MS system in mass/charge (m/z).

^b [M+H]⁺ was the charge of the ion.

^c Calculated relative molecular mass in Da.

^d Calculated according to "Peptide2.0"(<http://peptide2.com>).