

Supplementary Data

This supplementary data is a part of a paper entitled “Pancreatic Lipase Inhibition Activity in Lipid Absorption Using Traditional Plants: A Systematic Review and Meta-Analysis”.

Table S1. Data collection for Metaanalysis

Study ID	Subgroup*	Research place	Year	Solvent	Phytochemical constituent	Nc	Xc	SDc	Ne	Xe	SDe
1	<i>Cassia siamea</i>	India	2012	Ethanol	Cassiamin A	3	0.012	0.02	3	41.8	2.078461
2	<i>Murdannia loriformis</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	110	0.017321
3	<i>Stevia rebaudiana</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	530	0.034641
4	<i>Centella asiatica</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	120	0.017321
5	<i>Carthamus tinctorius</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	560	0.069282
6	<i>Ginkgo biloba</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	500	0.069282
7	<i>Orthosipon aristatus</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	130	0.017321
8	<i>Cassia angustifolia</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	810	0.051962
9	<i>Gynostemma penthaphyllum</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	580	0.086603
10	<i>Morus alba</i>	Thailand	2012	Aqueous	Phenolic	3	1.34	0.225167	3	100	0.017321
11	<i>C. Fenestratum</i>	Thailand	2012	Hexane:Dichloromethane: Ethanol (1:1:1)	Flavonoid	3	9.25	1.25	3	160	0.02
12	<i>Cassia auriculata</i>	UK	2012	Methanol	Flavonoid	4	0.72	0.14	4	6.0	2
13	<i>Achillea santolina</i>	Algeria	2013	Ethyl acetate fraction	Phenolic	3	0.2	0.00	3	370	0.00
14	<i>Achillea santolina</i>	Algeria	2013	Butanol fraction	Phenolic	3	0.2	0.00	3	50	0.00
15	<i>Achillea santolina</i>	Algeria	2013	Butanol fraction	Saponin	3	0.2	0.00	3	1190	0.03
16	<i>Zizyphus lotus</i>	Algeria	2013	Ethyl acetate fraction	Phenolic	3	0.2	0.00	3	450	0.00
17	<i>Zizyphus lotus</i>	Algeria	2013	Butanol fraction	Phenolic	3	0.2	0.00	3	60	0.00
18	<i>Zizyphus lotus</i>	Algeria	2013	Butanol fraction	Saponin	3	0.2	0.00	3	1153	0.46
19	<i>Passiflora nitida</i>	Japan	2013	20% Ethanol + 80% water	Flavonoid	3	0.8	0.173205	3	21.2	1.385641
20	<i>Garcinia vilersiana</i>	Thailand	2015	Ethanol	Flavonoid, Alkaloid	3	0.08	0.20	3	0.11	1.10
21	<i>P. Chamaepeuce</i>	Thailand	2015	Ethanol	Flavonoid, Alkaloid	3	0.08	0.20	3	0.45	2.40
22	<i>Hibiscus sabdariffa</i>	Germany	2015	Methanol	Polyphenol	3	0.0019	0.03	3	36	0.001
23	<i>Hibiscus sabdariffa</i>	Germany	2015	Aqueous	Polyphenol	3	0.0019	0.03	3	41	0.006
24	<i>Mentha aquatica</i>	Germany	2015	Methanol	N/A	3	0.0019	0.03	3	76	0.002
25	<i>Mentha aquatica</i>	Germany	2015	Aqueous	N/A	3	0.0019	0.03	3	9940	0.081
26	<i>Punica granatum</i>	Germany	2015	Methanol	N/A	3	0.0019	0.03	3	109	0.012
27	<i>Punica granatum</i>	Germany	2015	Aqueous	N/A	3	0.0019	0.03	3	2261	0.372
28	<i>Tamarindus Indica</i>	Germany	2015	Methanol	N/A	3	0.0019	0.03	3	152	0.007
29	<i>Tamarindus Indica</i>	Germany	2015	Aqueous	Oleanolic acid	3	0.0019	0.03	3	212	0.002
30	<i>Olea europaea</i>	Germany	2015	Methanol	Oleanolic acid	3	0.0019	0.03	3	186	0.012
31	<i>Olea europaea</i>	Germany	2015	Aqueous	N/A	3	0.0019	0.03	3	6772	0.479
32	<i>Punica granatum</i>	Germany	2015	Methanol	N/A	3	0.0019	0.03	3	186	0.009
33	<i>Punica granatum</i>	Germany	2015	Aqueous	N/A	3	0.0019	0.03	3	188	0.014
34	<i>Rosmarinus officianalis</i>	Germany	2015	Methanol	N/A	3	0.0019	0.03	3	196	0.017
35	<i>Rosmarinus officianalis</i>	Germany	2015	Aqueous	N/A	3	0.0019	0.03	3	4598	0.645
36	<i>Peumus boldus Molina</i>	Germany	2015	Methanol	N/A	3	0.0019	0.03	3	217	0.015
37	<i>Peumus boldus Molina</i>	Germany	2015	Aqueous	N/A	3	0.0019	0.03	3	2268	0.171

38	<i>Ocimum gratissimum</i>	Nigeria	2016	Methanol then by separatory funnel with hexane, aqueous phase extracted by ethyl acetate	Phenolic, Flavonoid	3	3.48	0.13	3	20.69	2.14
39	<i>Ocimum basilicum</i>	Nigeria	2016	Methanol then by separatory funnel with hexane, aqueous phase extracted by ethyl acetate	Phenolic, Flavonoid	3	3.48	0.13	3	52.14	3.96
40	<i>Moringa oleifera</i>	Indonesia	2016	Methanol	Niazirin	3	0.02126	0.00536	3	17.05	3.87
41	<i>Moringa oleifera</i>	Indonesia	2016	Methanol	Niazirin	3	0.02126	0.00536	3	42.31	16.39
42	<i>Dendrobium formasum Roxb</i>	Thailand	2017	Methanol (FII2 of Fraction Ethyl acetate, hexane gradient chromatography column)	Confusarin	3	0.013	0.004	3	154.61	8.58
43	<i>Dendrobium formasum Roxb</i>	Thailand	2017	Methanol (GIII2 of fraction CH2-Cl2-Hexane gradient chromatography column)	5-Methoxy-7-hydroxy-9,10-dihydro-1,4-phenanthrenequinone	3	0.013	0.004	3	69.45	10.14
44	<i>Adiantum capillus-veneris</i>	Jordan	2017	Water	Ferulic Acid	3	0.114	0.00693	3	1600	173.21
45	<i>Ficus carica</i>	South Africa	2018	Hexane	Malic acid	3	1894	0.017	3	26885.5	550.9
46	<i>Ficus carica</i>	South Africa	2018	Ethyl acetate	Malic acid	3	1894	0.017	3	2492.36	234.77
47	<i>Ficus carica</i>	South Africa	2018	Ethanol	Malic acid	3	1894	0.017	3	230475	96521
48	<i>Ficus carica</i>	South Africa	2018	Aqueous	Malic acid	3	1894	0.017	3	310.16	13216
49	<i>Ficus carica</i>	South Africa	2018	Hexane	Malic acid	3	1894	0.017	3	113019.5	317.3
50	<i>Ficus carica</i>	South Africa	2018	Ethyl acetate	Malic acid	3	1894	0.017	3	2943.07	220.90
51	<i>Ficus carica</i>	South Africa	2018	Ethanol	Malic acid	3	1894	0.017	3	364.96	2176
52	<i>Ficus carica</i>	South Africa	2018	Aqueous	Malic acid	3	1894	0.017	3	442.8	129.14
53	<i>Ficus carica</i>	South Africa	2018	Hexane	Malic acid	3	1894	0.017	3	276085.1	1403.4
54	<i>Ficus carica</i>	South Africa	2018	Ethyl acetate	Malic acid	3	1894	0.017	3	41574.56	20.25
55	<i>Ficus carica</i>	South Africa	2018	Ethanol	Malic acid	3	1894	0.017	3	688.56	69.9
56	<i>Ficus carica</i>	South Africa	2018	Aqueous	Malic acid	3	1894	0.017	3	842.70	151.34
57	Grapefruit	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	216.7	3.87
58	Pomelo	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	248.91	11.35
59	Kumquat	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	292.11	1.60
60	Citrus Mandarin, Owari unshu	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	129.40	7.96
61	Ponkan	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	126.62	7.46
62	Tingerine	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	109.44	5.51
63	Lemon	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	164.82	1.41
64	Sweet orange	China	2018	70% Ethanol	Phenolic, Flavonoid	3	0.103	0.004	3	87.25	7.15
65	<i>Solenostemma argel</i>	Egypt	2019	Methanol (ultrasonic)	Flavonoid	3	35.34	0.21	3	36.31	1.63
66	<i>Solenostemma argel</i>	Egypt	2019	Aqueous (ultrasonic)	Flavonoid	3	35.34	0.21	3	40.11	0.00
67	<i>Solenostemma argel</i>	Egypt	2019	50% Ethanol (Ultrasonic)	Flavonoid	3	35.34	0.21	3	62.65	3.93
68	<i>Solenostemma argel</i>	Egypt	2019	70% Ethanol (ultrasonic)	Flavonoid	3	35.34	0.21	3	29.04	0.08
69	<i>Solenostemma argel</i>	Egypt	2019	90% Ethanol (ultrasonic)	Flavonoid	3	35.34	0.21	3	31.22	0.004
70	<i>Rumex maderensis</i>	Portugal	2019	Methanol	Flavonol, Catechin	3	0.47	0.02	3	6.59	0.32

71	<i>Rumex maderensis</i>	Portugal	2019	Methanol	Flavononol, Catechin	3	0.47	0.02	3	5.17	0.25
72	<i>Rumex maderensis</i>	Portugal	2019	Methanol	Flavonol, Catechin	3	0.47	0.02	3	4.27	0.18
73	<i>J. Communis</i>	India	2020	Toluene	Tanin, Phenolic	3	68.75	0.14	3	102.93	0.44
74	<i>J. Communis</i>	India	2020	Cloroform	Tanin, Phenolic	3	68.75	0.14	3	112.12	1.05
75	<i>J. Communis</i>	India	2020	Methanol	Tanin, Phenolic, Flavonoid	3	68.75	0.14	3	69.93	1067
76	<i>J. Communis</i>	India	2020	Ethyl acetate	Tanin, Phenolic, Flavonoid	3	68.75	0.14	3	82.31	2.01
77	<i>J. Communis</i>	India	2020	aqueous	Tanin, Phenolic, Flavonoid	3	68.75	0.14	3	116.19	0.86
78	<i>Echium angustifolium</i>	Palestine 1	2020	Hexane	Saponin	3	12.3	0.35	3	29.1	0.62
79	<i>Echium angustifolium</i>	Palestine 1	2020	Acetone	Saponin	3	12.3	0.35	3	26.3	0.23
80	<i>Echium angustifolium</i>	Palestine 1	2020	Methanol	Flavonoid	3	12.3	0.35	3	34.67	0.46
81	<i>Echium angustifolium</i>	Palestine 1	2020	Aqueous	Flavonoid	3	12.3	0.35	3	24.54	0.66
82	<i>Anchusa ovata</i>	Palestine 2	2020	Hexane fraction	Saponin	3	12.3	0.35	3	501.18	0.65
83	<i>Anchusa ovata</i>	Palestine 2	2020	Acetone fraction	Tannin, Phenolic	3	12.3	0.35	3	331.1	0.47
84	<i>Anchusa ovata</i>	Palestine 2	2020	Methanol fraction	Phenolic, Tannin, Terpenoid	3	12.3	0.35	3	53.7	0.41
85	<i>Anchusa ovata</i>	Palestine 2	2020	Aqueous fraction	Phenolic, Tannin, Alkaloid	3	12.3	0.35	3	75.85	0.62
86	<i>P. mildbraedii</i>	Nigeria	2021	Ethanol	Flavonoid, Saponin	3	0.089	0.001732	3	19.87	0.467654
87	<i>P. mildbraedii</i>	Nigeria	2021	Hexane fraction	Flavonoid, Saponin	3	0.089	0.001732	3	9.74	1.316359
88	<i>M. flagellipes</i>	Nigeria	2021	Ethanol	Flavonoid, Saponin	3	0.089	0.001732	3	15.88	1.195115
89	<i>M. flagellipes</i>	Nigeria	2021	Hexane Fraction	Flavonoid, Saponin	3	0.089	0.001732	3	10.67	0.779423
90	<i>M. flagellipes</i>	Nigeria	2021	Butanol fraction	Flavonoid, Saponin	3	0.089	0.001732	3	8.25	0.398372
91	<i>Elettaria cardamomum L</i>	Saudi Arabia	2021	Aqueous	Phenolic, Flavonoid	3	23.8	1.4	3	288.75	1.3

*References of Subgroup 1-91 = [28-46]. Abbreviation: Nc = Sample size of control (Orlistat); Xc = Average of IC₅₀ Pancreas Lipase; SDc = Standard deviation of control; Ne = Sample size of experiment (plant); Xe = Average of IC₅₀ Pancreas lipase of experiment; SDe = Standard deviation of control; N/A= Not Available.

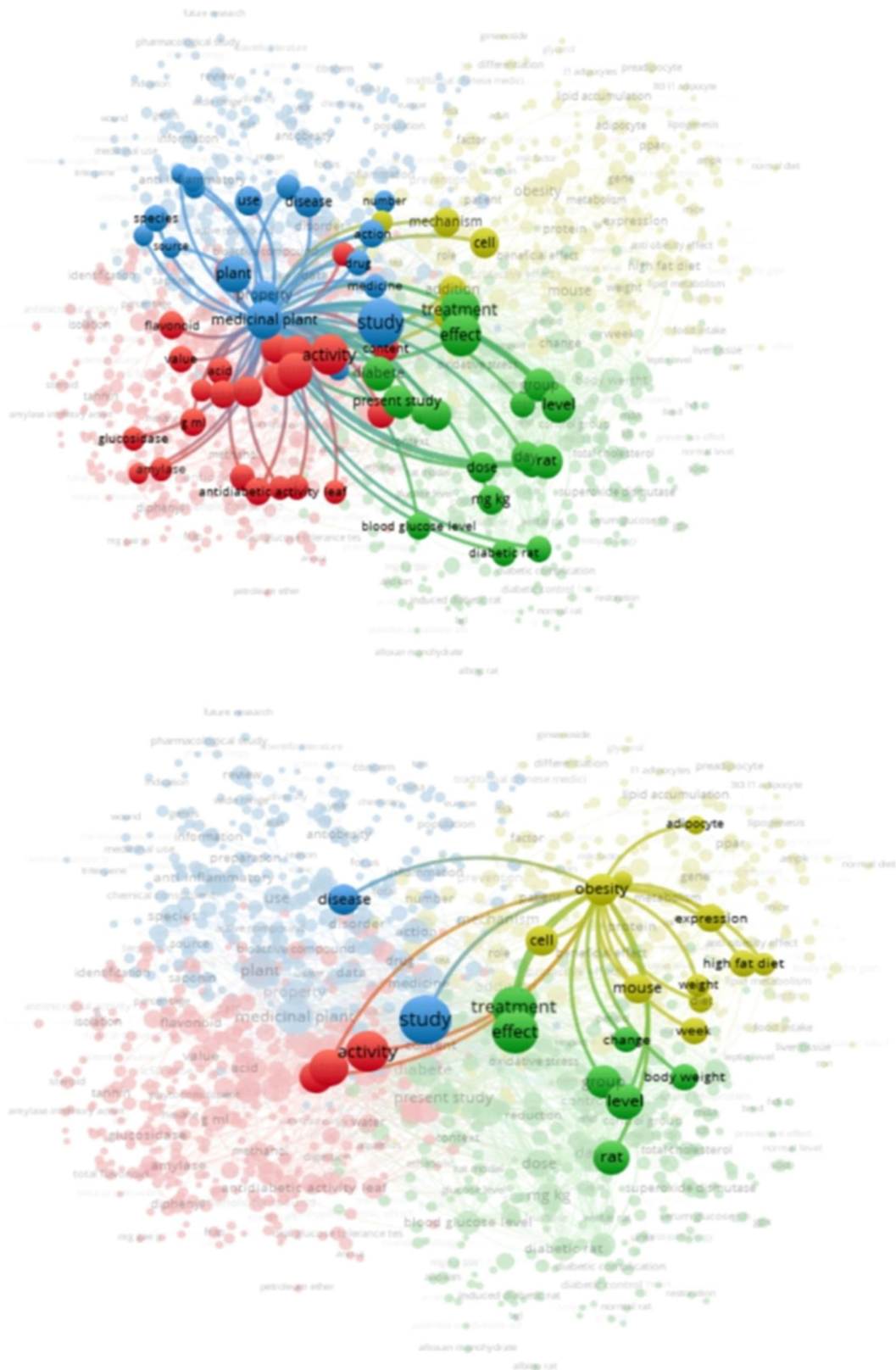


Fig S1. Research mapping with a focus on anti-obesity plants

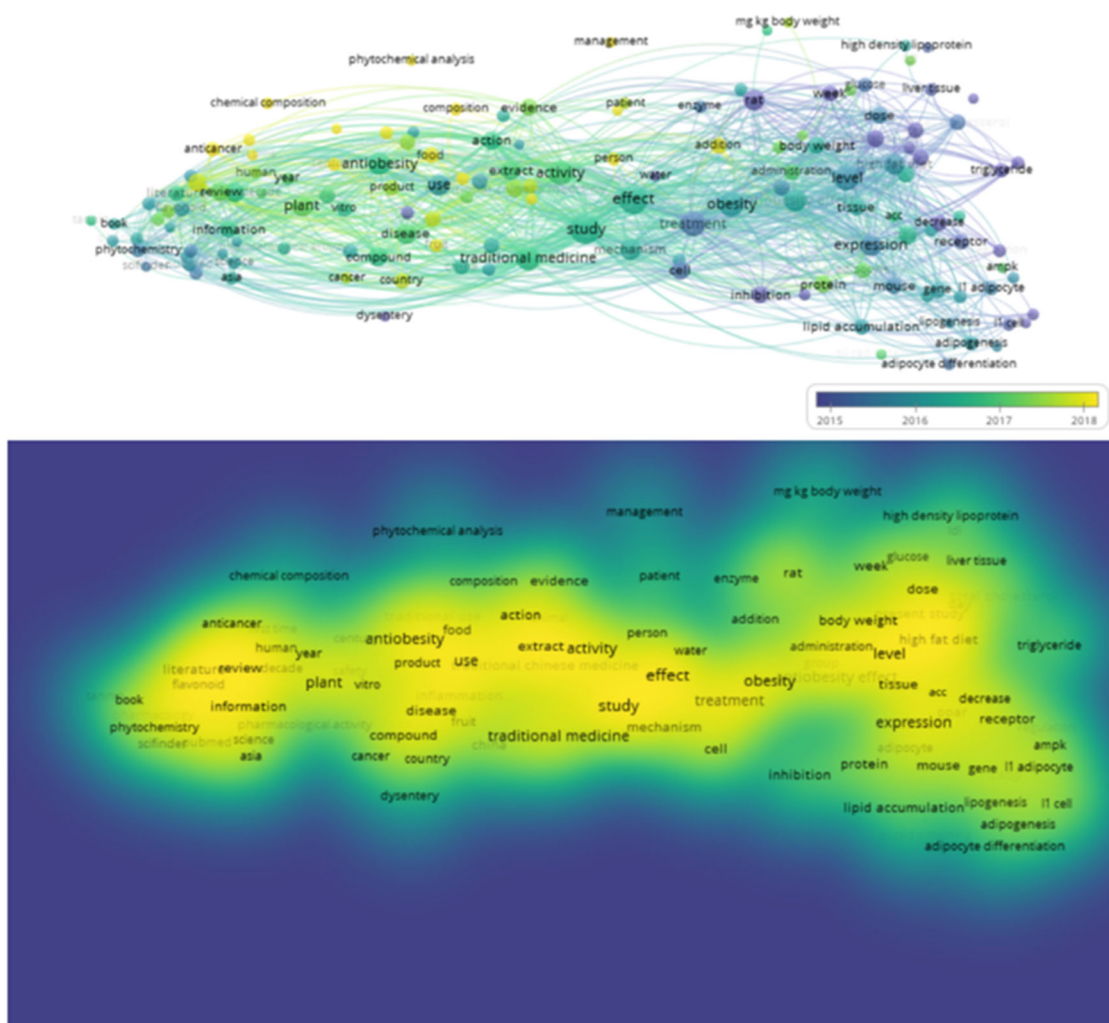


Fig S2. Mapping of anti-obesity plants research visualize by VoS viewer