

Table 1.

IN VITRO- Inhibitory activities (as IC₅₀ values) of plant extracts reported to exert pancreatic alpha- amylase inhibitory activity.

Family name	Plant species	Extraction method	IC ₅₀ value	Type of amylase	Ref
Acanthaceae	<i>Andrographis paniculata</i> (Burm. F.) Nees	Ethanol Extract	50.9 mg/ml	PPA	(118)
Actinidiaceae	<i>Actinidia deliciosa</i>	90% Methanol Extract	42.9 µg/ml	PPA	(178)
Alliaceae	<i>Allium Akaka</i> Gmel. (leaves)	90 % Ethanol Extract	16.74 mg/ml	-	(15)
	<i>Allium sativum</i> L. (corms)		17.95 mg/ml		
	<i>Allium porrum</i> L. (leaves)		15.73 mg/ml		
	<i>Allium cepa</i> L. (bulbs)		16.36 mg/ml		
Alliaceae	<i>Allium cepa</i> L. (skin)	Ethyl alcohol Extract	>3 mg/ml	PPA	(46)
Anacardiaceae	<i>Rhus coriaria</i> L. (fruits)	1. Methanol Extract 2. Ethyl acetate Extract 3. n- Hexane Extract	1. 105.6 µg/ml 2. 28.7 µg/ml 3. 123.1 µg/ml	-	(18)
Annonaceae	<i>Annona crassifolia</i> Mart.	Poliamide- Purified Extract	1.3 mg of sample dw/ml of reaction	PPA	(56)
Asteraceae	<i>Pteronia divaricata</i> .	Acetone Extract	36.30 µg/ml	PPA	(34)
Asteraceae	<i>Matricaria chamomilla</i> L.	Hot water Extract	5.2 mg/ml	PPA	(179)
Bixaceae	<i>Bixa orellana</i> L. (leaves)	Methanol Extract	49 µg/ml	HPA	(29)
Celastraceae	<i>Elaeodendron transvaalense</i>	Acetone Extract	1.12 µg/ml	PPA	(34)
Combretaceae	<i>Terminallia bellerica</i> (fruit)	Methanolic Extract	87.3 µg/ml	PPA	(180)
Crassulaceae	<i>Rhodiola</i> spp.: 1. <i>Rhodiola rosea</i> 2. <i>Rhodiola crenulata</i>	Water Extract	1. 98.1 µg total phenolic/ml	PPA	(114)
		Ethanol Extract	1. 120.9 µg total phenolic/ml 2. 173.4 µg total phenolic/ml		
Crassulaceae	<i>Rhodiola rosea</i> L.	Water Extract	IC ₈₀ (100 µg/ml)	PPA	(115)
Ebenaceae	<i>Euclea undulate</i> var. <i>myrtina</i> Thunb.	Acetone Extract	2.80 µg/ml	PPA	(34)
	<i>Diospyros peregrina</i> Gurke (fruit)	Hidroalcoholic Extract	136.5 µg/ml	PPA	(181)
Elaeocarpaceae	<i>Aristotelia chilensis</i> (fruits)	Crude Extract	41.5 mg of extract/L	PPA	(120)
Ericaceae	<i>Arbutus andrachne</i> L.	50% Methanol-	0.44 mg/ml	PPA	(150)

		aqueous Extract			
Ericaceae	<i>Vaccinium arctostaphylos</i>	Methanol/glacial acetic acid/water Extract	1.91 mg/ml	PPA	(182)
Fabaceae	<i>Vigna angularis</i>	40% Ethanol Extract	0.78 mg/ml	PPA	(152)
Fabaceae	<i>Trigonella foenum- graecum</i> (Seed)	Petroleum ether Extract	1.3 mg/ml	-	(149)
Fagaceae	<i>Castanea</i>	75% Aqueous ethanol Extract	7.5 and 18.2 µg/ml	HPA and PPA	(43)
		50% Aqueous acetonitrile Extract	13.1 µg/ml	PPA	
Fagaceae	<i>Castanea</i>	Ethanol Extract	19.5 µg/ml	PPA	(183)
Fagaceae	<i>Castanea</i>	60% aqueous ethanol (Sephadex LH-20 column)	5.71 µg/ml and 1.89 µg/ml	PPA and HPA	
Fagaceae	<i>Castanea</i>	75% Aqueous ethanol Extract	650 µg/ml	PPA	(44)
Gentianaceae	<i>Erythraea centarium</i>	Chloroform.Extract	64.9 µg/ml	PPA	(48)
Hypericaceae	<i>Hypericum triquetifolium</i> Turra	50% Methanol-aqueous Extract	0.32 mg/ml	PPA	(150)
Lamiaceae	<i>Ocimum tenuiflorum</i> (L.)	Aqueous Extract	1.55 µg/ml	PPA	(30)
Lamiaceae	<i>Marrubium radiatum.</i>	Methanol Extract	61.1 µg/ml	PPA	(48)
	<i>Salvia acetabulosa</i> L.	Methanol Extract	91.2 µg/ml		
		n- hexane Extract	205.5 µg/ml		
	<i>Calamintha organifolia</i> Vis.	Chloroform Extract	91.6 µg/ml		
		n- hexane Extract	94.1 µg/ml		
<i>Satureja thymbra</i> L.	Chloroform Extract	351.6 µg/ml			
Lamiaceae	<i>Ocimum basilicum</i> L. (leaves)	Aqueous Extract	42.50 mg/ml	PPA	(14)
Lauraceae	<i>Cinnamomum verum</i> Persl. (bark)	Isopropanol Extract	1.0 µg/ml	HPA	(29)
Lauraceae	<i>Cinnamomun cassia</i> Blume	Aqueous Extract	1. 1.77 mg/ml	PPA	(65)

	<i>Cinnamomun zeylanicum</i> Nees <i>Cinnamomun loureirii</i> Nees <i>Cinnamomun bejolghota</i> Sweet		2. 1.23 mg/ml 3. > 4.00 mg/ml 4. 1.77 mg/ml		
Leguminosae	<i>Trigonella foenum- graecum</i> L. (seed)	Ethanol Extract	1.87 mg/ml	-	(70)
Malvaceae	<i>Theobroma grandiflorum</i> (Wild. ex Spreng) Schum	Polyamide- Purified Extract	1.1 mg of sample dw/ ml of reaction	PPA	(56)
Moraceae	<i>Ficus bengalensis</i> L. (fruit pulp)	Cold- water Extract	4.4 µg/ml	HPA	(29)
Myrtaceae	<i>Ugni molinae</i> Turcz (stems)	Crude Extract	56.6 mg of extract/L	PPA	(120)
Myrtaceae	<i>Syzygium cumini</i> (L.) Skeels	Chloroform Extract	4.28 µg/ml	PPA	(30)
Myrtaceae	<i>Campomanesia phaea</i> Berg.	Polyamide- Purified Extract	1.0 mg of sample dw/ ml of reaction	PPA	(56)
Myrtaceae	<i>Syzygium cumini</i> L. Skeels (seeds)	Cold water Extract	10 µg/ml	PPA	(29)
Myrtaceae	<i>Syzygium cumini</i> L. Skeels (seeds)	Cold- water and hot- water Extract	42.1 and 4.1 µg/ml	HPA	
Nyctaginaceae	<i>Bougainvillea spectabilis</i>	Chloroform Extract	3.20 µg/ml	PPA	(30)
Nymphaeaceae	<i>Nelumbo nucifera</i> (leaves)	15% Aqueous- ethanol Extract	0.82 mg/ml	-	(184)
Oleaceae	<i>Olea europaea</i> L.	Ethanol Extract	0.02 mg/ml	HPA	(39)
		Hot water Extract	70.2 mg/ml		
Oleaceae	<i>Olea europea</i> L.	Methanol- water Extract	1. 269 µg/ml 2. 276 µg/ml 3. 331 µg/ml 4. 1392 µg/ml 5. 258 µg/ml 6. 304 µg/ml 7. > 2000 µg/ml 8. 372 µg/ml	PPA	(40)
Phyllantaceae	<i>Phyllantus amarus</i> Schum. (whole plant)	Hexane Extract	32 µg/ml	PPA	(25)
Phyllantaceae	<i>Emblica officinalis</i> (fruit)	Methanolic Extract	94.3 µg/ml	PPA	(180)
Phyllantaceae	<i>Phyllanthus amarus</i>	1. Ethanol Extract	1. 36.05 µg/ml	PPA	(185)

		2. Hexane Extract	2. 48.92 µg/ml		
Pineaceae	<i>Pinus maritime</i> (bark)	70% Ethanol Extract	1.69 µg/ml	PPA	(170)
Poaceae	<i>Sorghum bicolor</i> cultivars 1. Mongdang-susu 2. Me- susu 3. Susongsaengi- susu 4. Sikyung-susu	70 % Ethanol Extract	1. 4.5 µg/ml 2. 2.9 µg/ml 3. 11.8 µg/ml 4. 9.0 µg/ml	PPA	(186)
Poaceae	<i>Sorghum bicolor</i> bran 1. Sumac sorghum 2. Black sorghum	Methanolic Extract	1. 1.4 µg/ml 2. 11.4 µg/ml	PPA	(187)
Rosaceae	<i>Rosa gallica</i> (petals)	50% Aqueous ethanol Extract.	20, 26 and 34 µg/ml	PPA	(138)
Rosaceae	<i>Sorbus aucuparia</i> , variety Sahharnaja	80% acetonitrile- ultra pure water Extract	4.5 µg of gallic acid equivalent/ml	PPA	(76)
	<i>Rubus idaeus</i> L., variety Glen Ample		21.0 µg of gallic acid equivalent/ml		
Rosaceae	<i>Sarcopotarium spinosum</i> L.	50% Methanol- aqueous Extract	0.14 mg/ml	PPA	(150)
Rubiaceae	<i>Asperula glomerata</i> (M. Bieb)	Methanol Extract	209.7 µg/ml	PPA	(48)
Rutaceae	<i>Murraya koenigii</i> (L.)	Chloroform Extract	1.96 µg/ml	PPA	(30)
Rutaceae	<i>Murraya koenigii</i> L. Spreng (leaves)	Isopropanol Extract	10 µg/ml	PPA	(29)
			127 µg/ml	HPA	
Santalaceae	<i>Osyris alba</i> L.	50% Methanol- aqueous Extract	0.081 mg/ml	PPA	(150)
Sapindaceae	<i>Nephelium lappaceum</i> L. (rind)	Ethanol Extract	70.8 µg/ml	PPA	(188)
Schisandraceae	<i>Schizandra chinensis</i> Bail. (pulp/skin)	Water Extract	< 1 mg/ml	PPA	(132)
Theaceae	<i>Camellia sinensis</i> (L.) Ktze. (leaf)	Ethanol Extract	1.54 mg/ml	-	(70)
Thymelaceaceae	<i>Gnidia glauca</i> leaf and flower	Petroleum ether Extract	34.88 and 31.82 µg/ml	PPA	(16)
	<i>Gnidia glauca</i> flower	Ethyl acetate Extract	33.84 µg/ml		
		Methanol Extract	33.92 µg/ml		

Umbelliferae	<i>Bunium persicum</i> Boiss. (seeds)	1. Methanol Extract 2. Ethyl acetate Extract 3. n- Hexane Extract	4. 170.4 µg/ml 5. > 250 µg/ml 6. 138.3 µg/ml	-	(18)
Urticaceae	<i>Urtica dioica</i> L. (lea)	Ethanol Extract	1.89 mg/ml	-	(70)
Zigophyllaceae	<i>Balanites aegyptiaca</i> Del. (Fruits)	Powdered Extract	12 mg/ml	-	(149)
Zingiberaceae	<i>Zinger officinale</i> var. Rubra <i>Zinger officinale</i> Roscoe	Aqueous Extract	1. 3.51 µg/ml 2. 3.14 µg/ml	PPA	(122)
Zingiberaceae	<i>Curcuma longa</i> L. (rhizome)	Isopropanol Extract	10 µg/ml	PPA	(29)
Zingiberaceae	<i>Curcuma longa</i> L. (rhizome)	Isopropanol and acetone Extract	0.16 and 7.4 µg/ml	HPA	

PPA: Porcine pancreatic alpha- amylase; HPA: Human pancreatic alpha- amylase