

Table 3: A concise list of hepatoprotective plants

Family	Name of plant	Part	Solvent	Important parameters studied	Reference
Acanthaceae	<i>Thunbergia laurifolia</i> Linn.	Leaf	Ethanol	<i>In vitro</i> , <i>in vivo</i> studies; ALT, AST, TGLY, ALP, SBLN, HS, MTT	12
	<i>Hygrophila auriculata</i> Schumach.	Seed	Petroleum ether and methanol	<i>In vivo</i> studies; SGOT, SGPT, ALP, SD, GD, SBLN, HS	13
Asclepiadaceae	<i>Decalepis hamiltonii</i> Wight and Arn.	Root	Water	LP, PC, SOD, CAT, GPX, GR, LG, HS	14
	<i>Tylophora indica</i> (Burm.f.) Merr.	Leaf	Water	<i>in vivo</i> studies; AST, ALT, ALP, TB, LDH, GR, SOD, CAT, GPX, GST, LP, HS	15
Asteraceae	<i>Chamomile capitula</i>	Capitula	Hydro-ethanolic	<i>In vivo</i> studies; LG, NKA, LG, TBARS, ALP, AST, ALT, TP, SBLN, GL	16
	<i>Artemisia absinthium</i> Linn.	Aerial part	Aqueous	<i>In vivo</i> studies; AST, ALT, TNF- α , IL-1, SOD, GPX, MDA, HS	17
Amaranthaceae	<i>Epilobium divaricata</i> (L.) Cass.	Whole plant	Aqueous	<i>In vivo</i> studies; ALT, AST, ALP, LG, HS	18
	<i>Amaranthus spinosus</i> L.	Whole plant	Petroleum ether	<i>In vivo</i> studies; AST, ALT, ALP, SBLN, MDA, GSH, SOD, CAT, HS	19
Apiaceae	<i>Aerva lanata</i> Juss. Ex Schult.	Whole plant	Hydroalcoholic	<i>in vivo</i> studies; AST, ALT, ALP, SBLN	20
	<i>Apium graveolens</i> L.	Seed	Petroleum ether, acetone and methanol	<i>in vivo</i> studies; SGOT, SGPT, ALP, TP, TA	21
Apocynaceae	<i>Nerium indicum</i> Mill.	Flower	Methanolic extract	<i>in vivo</i> studies; AST, ALT, ALP, SBLN, SOD, MDA, HS	22
Asparagaceae	<i>Asparagus racemosus</i> Willd.	Root	Ethanol	<i>in vivo</i> studies; AST, ALT, ALP, SBLN, SOD, CAT, HS	23
	<i>Asparagus racemosus</i> Willd.	Whole plant	Crude extract and aqueous fraction	<i>in vivo</i> ; LP, PO, TBARS	24
Bignoniaceae	<i>Kigelia africana</i> (Lam.) Benth.	Leaves	Aqueous	<i>in vivo</i> studies; ALT, AST, TBARS, SOD, CAT, GPX, DAD	25
Bixaceae	<i>Bixa orellana</i> L.	Whole plant	Methanolic extract	<i>in vivo</i> studies; SGPT, SGOT, CLT, TG, HS	26
Coclospermaceae	<i>Cochlospermum planchonii</i> Hook.f.	Rhizomes	Aqueous	<i>in vivo</i> studies; SBLN, ALP, ALP	27
Cucurbitaceae	<i>Momordica dioica</i> Roxb. ex Willd.	Leaves	Ethanolic and aqueous	<i>in vivo</i> studies; AST, ALT, ALP, SBLN, HS	28
	<i>Trichosanthes cucumerina</i> L.	Whole plant	Methanol	<i>in vivo</i> studies; ALT, AST, ALP, SBLN, TP, TA, LG, MDA, HS	29
Capparidaceae	<i>Capparis spinosa</i> Linn.	Root	Ethanolic	<i>in vivo</i> studies; ALT, AST, HS	30
Casuarinaceae	<i>Casuarina equisetifolia</i> L.	Whole plant	Methanolic extract	<i>in vivo</i> studies; SGPT, SGOT, CLT, TG, HS	25
Dryopteridaceae	<i>Arachniodes exilis</i> (Hance) Ching	Rhizomes	Ethanol	<i>in vivo</i> studies; SGOT, SGPT, MDA, SOD, LP	31
Euphorbiaceae	<i>Baliospermum montanum</i> Blume	Root	Alcohol and chloroform extract	<i>in vivo</i> studies; SGPT, SGOT, ALP, HS	32
	<i>Croton oblongifolius</i> Roxb.	Aerial part	Petroleum ether, acetone and methanol	<i>in vivo</i> studies; SGOT, SGPT, ALP, TP, TA	33
	<i>Mallotus japonica</i> (L.f.) Müll. Arg.	Cortex	Aqueous	<i>in vivo</i> ; AST, ALT, SD, GST, GR, GGT, MDA	34
	<i>Phyllanthus niruri</i> L.	Leaves and fruits	Methanol and Aqueous	<i>in vivo</i> ; LP, SGOT, SGPT	35
Fabaceae	<i>Cajanus cajan</i> (L.) Millsp.	Whole plant	Methanolic	<i>in vivo</i> studies; SGPT, SGOT, AST, ALT, CLT, TG, HS	25

	<i>Tephrosia purpurea</i> (Linn.) Pers.	Aerial part	Aqueous-ethanolic extract	<i>in vivo</i> ; AST, ALT, SBLN, ALP, LG, GGT, MDA, HS	36
	<i>Cassia fistula</i> L.	Leaf	N-heptane	<i>in vivo</i> ; SGOT, SGPT, SBLN, ALP	37
	<i>Cassia fistula</i> L.	Seeds	Methanol	<i>in vivo</i> ; SGOT, SGPT, ALP, SBLN	38
	<i>Acacia confusa</i> Merr.	Bark	Hydroalcoholic	<i>in vivo</i> ; AST, ALT, MDA, CP450, SOD, GPX, HS	39
Gentianaceae	<i>Gentiana oliveri</i> Griseb.	Aerial part	Ethanol	<i>in vivo</i> ; MDA, LG, AST, ALT	40
	<i>Halenia elliptica</i> D. Don	Whole plant	Methanol	<i>in vivo</i> ; ALT, AST, ALP, SBLN, HS	41
Juncaceae	<i>Juncus subulatus</i> Forssk.	Tuber	Hydromethanolic	<i>in vivo</i> ; AST, ALT, ALP, TP, TA, TGLY, MDA	42
Lamiaceae	<i>Orthosiphon stamineus</i> Benth	Leaves	Methanol extract	<i>in vivo</i> ; AST, ALT, ALP, GST	43
	<i>Hoslundia opposita</i> Vahl	Stem	Methanol and ethyl acetate	<i>in vivo</i> ; AST, ALT, ALP, SBLN	44
	<i>Ocimum sanctum</i> Linn	Leaf	Hydroalcoholic	<i>in vivo</i> ; AST, ALT, ALP, SBLN, HS	45
Liliaceae	<i>Aloe barbadensis</i> Mill.	Aerial parts	Petroleum ether, chloroform and methanol	<i>in vivo</i> ; SGOT, SGPT, ALP, SBLN, TGLY, LP, LG, G6P, and MAH, AND, HS	46
Malvaceae	<i>Hibiscus esculentus</i> Linn.	Root	ethanol	<i>in vivo</i> ; SGPT, SGOT, ALP, SBLN, LP	47
	<i>Hibiscus sabdariffa</i> Linn.	Calyx	Aqueous	<i>in vivo</i> ; ALT, AST, TBARS, SOD, CAT, GPX, DAD	25
Meliaceae	<i>Azadirachta indica</i> A. Juss.	Leaf	Hydromethanolic	<i>in vivo</i> ; GPX, GST, SOD, CAT	48
Myrsinaceae	<i>Embelia ribes</i> Burm.f.	Fruit	Aqueous	<i>in vivo</i> ; SGPT, SGOT, ALP, SBLN, HS	49
Nyctaginaceae	<i>Boerhaavia diffusa</i> Linn.	Root	Aqueous	<i>in vivo</i> ; GOT, GPT, ACP, ALP, GD, SBLN	50
Nelumbonaceae	<i>Nelumbo nucifera</i> Gaertn.	Leaf	Ethanolic	<i>in vivo</i> ; ALT, AST, ALP, GGT, SBLN, SOD, CAT, TBARS, LG	51
Piperaceae	<i>Piper chaba</i> Hunter	Fruit	Hydroacetone	<i>in vivo</i> ; AST, ALT, MTT, TNF- α	52
	<i>Piper longum</i> Linn.	Fruits and roots	Milk extract	<i>in vivo</i> ; SGOT, SGPT, ALP, SBLN	53
Pittosporaceae	<i>Pittosporum neelgherrense</i> Wt. and Arn.	Stem bark	Methanolic	<i>in vivo</i> ; AST, ALT, MDA, SOD, GSH, HS	54
Ranunculaceae	<i>Nigella sativa</i> Linn.	Seeds	Aqueous-ethanolic extract	<i>In vitro</i> ; GSH, ALT, AST	55
Rubiaceae	<i>Rubia cordifolia</i> L.	Roots	Aqueous extract	<i>In vivo</i> ; SGOT, SGPT, GGT, ALP, HS	56
Rutaceae	<i>Aegle marmelos</i> (L.) Corr.	fruit pulp/ seeds	Aqueous extract	<i>In vivo</i> ; AST, ALT, ALP, SBLN, HS	57
	<i>Glycosmis pentaphylla</i> Retz.	Whole plant	Methanolic extract	<i>In vivo</i> ; SGPT, SGOT, AST, ALT, CLT, TG, HS	24
	<i>Zanthoxylum armatum</i> DC.	Bark	Ethanolic	<i>In vivo</i> ; SGOT, SGPT, ALP, SBLN, TP, SOD, CAT, LG	58
Sterculiaceae	<i>Pterospermum acerifolium</i> Linn.	Leaves	Ethanol	<i>In vivo</i> ; SBLN, TP, SGOT, SGPT, ALP	59
Scrophulariaceae	<i>Scoparia dulcis</i> L.	Whole plant	Methanol, diethyl ether and petroleum ether	<i>In vivo</i> ; AST, ALT, ALP, TP, GLY, LP, SOD, GR, SBLN, HS	60
	<i>Picrorrhiza kurroa</i> Royle ex Benth	Aqueous	Underground stem	<i>In vivo</i> ; AST, ALT, LL, CLT, TGLY	61
Saururaceae	<i>Saururus chinensis</i> (Lour.) Baill.	Whole plant	Ethanol	<i>In vivo</i> ; ALT, AST, MDA, SOD, TC, TGLY, CLT, TA, CE, HS	62
Salvadoraceae	<i>Azima tetracantha</i> Lam.	Leaves	Ethanol	<i>In vivo</i> ; SGOT, SGPT, SBLN, TP, ALP, TP, TA, CLT, HS	63
Umbelliferae	<i>Bupleurum kaoi</i> Liu	Roots	Ethanol	<i>In vivo</i> and <i>in vitro</i> ; AST, ALT, MDA, SOD, GPX	64
Verbenaceae	<i>Clerodendrum inerme</i> (L.) Gaertn.	Leaves	Ethanol	<i>In vivo</i> ; ALT, AST, ALP, TGLY, CLT	65
	<i>Vitex trifolia</i> L.	Leaves	Ethanolic and aqueous	<i>In vivo</i> ; SBLN, TP, ALT, AST, ALP, HS	66
Vitaceae	<i>Vitis vinifera</i> Linn.	Leaves	Ethanolic, chloroform, n-butanol, water	<i>In vivo</i> ; MDA, AST LT, GSH, HS	67

SGOT – Serum glutamyl oxalacetic acid transaminase; SGPT – Serum glutamyl pyruvate transaminase; SBLN – Serum bilirubin; GST – Glutathione-S-transferase; HS – Histopathological studies; GPX – Glutathione peroxidase; ALP – Alkaline phosphatase; PC – Protein carbonylation; SD – Sorbitol dehydrogenase; LP – Lipid peroxidation; GD – Glutamate dehydrogenase; SOD – Superoxide Dismutase; CAT – Catalase; AST – Aspartate amino transferase; ALT – Alanine amino transferase; LG – Liver Glutathione; TP – Total Protein; TA – Total albumin; MDA – Malondialdehyde; DAD – d-aminolevulinate dehydratase; CLT – Cholesterol; TGLY – Triglycerides; GGT – γ -glutamyl transferase; TBARS – Thiobarbaturic reacting substrate; MTT assay – MTT; GR – Glutathione reductase; NKA – Na⁺ K⁺ ATPase activity; GL – Glycogen level; TG – Total glucose; PO – Protein oxidation; MAH – microsomal aniline hydroxylase; G6P – Glucose-6-phosphatase; AND – Amidopyrine N-demethylase; CP450 – Cytochrome P450; TNF- α – Tumor Necrosis factor alpha; LL – Lipoprotein level; CE – Collagen estimation