Table 11.1: Annonaceae: Supplementary Phytochemical Information

Genus and Species (distribution)	**References**
Investigations, chemical components and activity (if known)	
Artabotrys	
Alkaloids: numerous alkaloids in the genus	see Aguilar (2001)
Liriodenine: antimicrobial, antiplasmodial, cardioprotective (anti-ischaemic, anti-arrhythmic), antiplatelet, antioxidant, cytotoxic, antitumour, central nervous system (CNS) sedative and dopamine-regulation properties	see Chapter 6
Artabotrys crassifolius (Malaysia)	
Antimicrobial, antioxidant and anticancer activity	Tan et al. (2015a, 2015b); Kwan et al. (2016)
Alkaloids: artabotrine, liriodenine, atherospermidine, lysicamine	
Antimicrobial activity: bark extracts showed good antibacterial activity, also anti-candida; artabotrine has a high level of antibacterial activity, but no antifungal properties	
Anticancer potential: cytotoxic activity artabotrine and lysicamine; bark extracts and artabotrine were active in breast and colorectal cancer cell lines	
Artabotrys hexapetalus (India, Southeast Asia)	
Leaves: cardioactive, cardiac stimulant, uterine stimulant, muscle relaxant, hypotensive; antifertility activity (anti-implantation), anti-oestrogenic	Aguilar (2001); Aminimoghadamfarouj et al. (2011a)
Antifungal: potent activity against plant pathogens	
Stem extracts (alkaloids): significant activity against various cancer cell lines, cytotoxic components are atherospermidine and liriodenine	
Sesquiterpenes: antimalarial activity	
Arteflene: antimalarial semi-synthetic drug	
Anticancer potential: Sesquiterpenes present with activity against various cancer cell lines eg. artaboterpenoids	Xi et al. (2016)
Extracts (roots, fruits): anti-leishmania activity	Bajaj et al. (2018)
Artabotrys harmandii (Vietnam)	
Extract: anticancer potential; potent anti-oestrogenic effect with potential for hormone replacement therapy	Hung et al. (2014)
Essential oil (leaf): spathulenol (17%), aromadendrene epoxide (12%), γ-elemene (7%), isospathulenol (6%).	
Artabotrys hongkongensis (China)	
Extracts (stems, leaves): anticancer activity; sesquiterpenes isolated with significant activity against various cancer cell	Liu et al. (2018a & 2018b); Wen et al. (2020)

lines	
Essential oil: spathulenol (13%), β-caryophyllene (7%), δ-cadinene (6%), γ-elemene (6%) and benzyl benzoate (6%).	Hung et al. (2014)
Artabotrys hildebrandtii (Madagascar)	
Extracts (phenolics): antioxidant and antimicrobial activity	Andriamadio et al. (2015)
Artabotrys hexapetalus (syn *A. intermedius*; Vietnam)	
Essential oil (leaf): δ-3-carene (19%), α-gurjunene (11%), α-zingiberene (6%)	Hung et al. (2014)
Essential oil (stem): δ-3-carene (30%), germacrene D (15%), α-amorphene (8%)	
Medicinal: used to make a stimulant tea, and for treatment of cholera	
Artabotrys madagascariensis (Madagascar)	
Extract: anticancer components isolated	Murphy et al. (2008)
Artabotrys pallens (Vietnam)	
α-phellandrene (20%), α-gurjunene (22%) bicycloelemene (10%)	Hung et al. (2014)
Artabotrys petelotti (Vietnam)	
Essential oil (leaf): elemol (19%), cis-β-guaiene (9%), δ-cadinene (8%) and δ-elemene (5.5%)	Hung et al. (2014)
Essential oil (stem bark): elemol (33%), δ-cadinene (12%) and spathulenol (10%)	
Artabotrys thomsonii (Africa, Cameroon)	
Alkaloids isolated: antioxidant oxoberberine alkaloids present	Nguemdjo Chimeze et al. (2021)
Artabotrys vinhensis (Vietnam)	
Essential oil: α-pinene (17%), limonene (15%), germacrene D (14%), benzyl benzoate (9%)	Thang et al. (2013)
Cananga	
Cananga latifolia (Southeast Asia)	
Traditional medicine: febrifuge; the root infusion taken to ease quotidian fevers, which occur every 24 hours and are typical of malaria	Perry & Metzger (1980)
Liver disorders: seed clinically for treatment in Cambodia	Chassagne et al. (2017)
Cananga odorata (Madagascar, Comoro Islands, tropical Asia, Malesia, extends to Australia)	
Antimicrobial (plant, bark, leaf, flower, essential oil) i.e. antibacterial, antibiofilm, antifungal; antioxidant (bark, leaf, flower); anti-inflammatory (leaf, fruit, essential oil); antifertility (root bark toxic to sperm)	Tan et al. (2015)
Antidiabetic (leaf, stem, flower buds): antihyperglycaemic	Matsumoto et al. (2014b); Tan et al. (2015)

Antibacterial: significant inhibition of biofilm formation and anti-virulence activity against *Staphylococcus aureus*	Lee et al. (2014)
Bioavailability: iron oxide@C14 nanostructures enhanced antimicrobial activity against *S. aureus* and *Klebsiella pneumoniae*	Bilcu et al. (2014)
Extract: endophytic fungi (*Aspergillus* and *Curvularia* isolates) showed strong antibacterial activity against pneumonia-causing microbes	Mbekou et al. (2021)
Antifungal: anti-*Aspergillus* potential	Jantapan et al. (2017)
Essential oil (leaf): antioxidant; spathulenol (32%), humulene epoxide-II (7%), α-cadinol (4.5%)	Zhao et al. (2019)
Essential oil (Madagascar; flower): β caryophyllene (11%), α gurjunene (5%), linalool (3%), epi α muurolol (2%), γ muurolene (1.5%)	Gaydou et al. (1986)
Bioavailability: chitosan nanoemulsion of essential oil (linalool 24.5%, benzyl acetate 22.5%) improved antioxidant activity; good antifungal properties against *Aspergillus flavus* with potential use in food preservation	Upadhyay et al. (2021)
Essential oil (germacrene 23%, beta-caryophyllene 15%, plus 5–6% each geranylacetate, benzylbenzoate, linalool): wound healing potential	Han et al. (2017)
Extract (leaf): antiviral; active against hepatitis B virus	Indrasetiawan et al. (2019)
Alkaloid: sampangine shows antimicrobial, anticancer and antioxidant properties; neurotoxic potential	Mahdi et al, (2015)
Essential oil: anti-anxiety; improve sleep quality during cardiac rehabilitation (lavender, bergamot, ylang ylang combination)	Zhang et al. (2016a & 2018); McDonnell & Newcomb (2019)
Nervous system and mood (essential oil): sedative, relaxing, 'harmonising' effect; anxiolytic (active component benzyl benzoate, also linalool and benzyl alcohol); supportive effects on mood and cognitive performance; calming with decreased alertness; unfortunately, the memory enhancing effect was not apparent in individuals with epilepsy	Moss et al. (2008); Watanabe et al. (2013); Tan et al. (2015); Zhang et al. (2016a); Zhang et al. (2018); Amadeo et al. (2020)
Insecticidal (essential oil): active against mosquitoes, mosquito larva, common housefly, termites and agricultural pests; insect repellent (mosquitoes and beetles)	Tan et al. (2015)
Insecticidal (essential oil): significant activity against flies, mosquitoes and Cotton leafworm moth	Pavela et al. (2020)
Insecticidal: larvicidal, adulticidal; high insect repellent activity for mosquitoes; essential oil methyl benzoate 15%, α-gurjunene 13%, p-methyl-anisole 13%, benzyl acetate 10%)	Vera et al. (2014); Soonwera (2015); Soonwera & Phasomkusolsil (2015); Osanloo et al. (2019); Sukkanon et al. (2021)
Pesticide (acaricide): active against ticks	Elmhalli et al. (2018)

Antiparasitic: leaf extracts antiprotozoal; endophytic fungi show antimalarial potential	Tan et al. (2015); Toghueo et al. (2018)
Cosmetic: anti-inflammatory, healing; anti-melanogenesis, skin-whitening (flower bud and seed)	Matsumoto et al. (2014a); Tan et al. (2015)
Cosmetic: a component of anti-ageing, anti-wrinkle cosmetic creams (combined with oils of ginger, wan-sao-long leaf, lemongrass and holy basil)	Leelapornpisid et al. (2015)
Cosmetic: skin infections; useful against acne; synergistic with other essential oils against *Propionibacterium acnes* and *Staphylococcus epidermis*	Orchard et al. (2018)
Cyathostemma	
Cyathostemma argenteum (Thailand)	
Alkaloids: liriodenine (cytotoxic)	Khamis et al. (2004)
Phenolics: unusual flavanones are present	Khamis et al. (2004)
Dihydrochalcone: anticancer activity against breast cancer cells	Rachakhom et al. (2019)
Chalcones: dihydrochalcones with anti-inflammatory activity isolated	Somsrisa et al. (2013)
Benzylbenzoate: antiparasitic (anti-scabies, anti-tick), vasodilatory, spasmolytic (anti-asthmatic, antitussive)	
Desmos	
Antiviral components (a cinnamoylbenzaldehyde and lawinal): anti-HIV activity	Wu et al. (2003)
Desmos cochinchinensis, D. chinensis	
Essential oils: were rich in beta-caryophyllene, germacrene D and alpha-pinene	Dai et al. (2012)
Desmos chinensis (China)	
Grandiuvarones (leaf extracts): antifungal (anti-*Aspergillus*) and antibacterial properties	Zhi et al. (2019)
Desmos chinensis var. ***lawii***	
Essential oil (leaf): moderate antibacterial and antifungal activity	Hisham et al. (2012)
Desmos cochinchinensis (Asia and the Philippines)	
Flavonoids, oxypinones (twig extracts); also desmoscochinoxypinone B, chrysin pinocembrin benzoate (flower and leaf extracts): anti-diabetic potential	Meesakul et al. (2019); Suthiphasilp et al. (2020a)
Antioxidant components e.g. cardamonin and chrysin	Bajgai et al. (2011)
Desmos dumosus (China)	
Essential oil: rich in beta-caryophyllene, germacrene D and alpha-pinene	Dai et al. (2012)
Desmosdumotin C (root extracts): anticancer activity (also investigation of anticancer analogues)	Wen et al. (2019)
Antidiabetic components identified	Suthiphasilp et al. (2021)

Desmos penduculosus (Southeast Asia, Vietnam)	
Essential oil: high amounts of beta-elemene, beta-caryophyllene and germacrene D*; D. penducolosus* var. *tonkinensis* rich in beta-caryophyllene, germacrene D and alpha-pinene	Dai et al. (2012)
Desmos rostrata (Vietnam)	
Alkaloids (stem bark): discretine and derivatives show anti-plasmodial activity (antimalarial potential); desmorostratine (cytotoxic activity)	Nguyen et al. (2008)
Goniothalamus	
Numerous aporphine alkaloids, acetogenins and styryllactones are present in the genus with anticancer and antibacterial potential	Wiart et al. (2007); Seyed et al. (2014); Meesakul et al. (2020a)
Anonaine: vasorelaxant, antibacterial, antiplasmodial, antifungal, antioxidant and anticancer	
Anonaine: antidepressant; anonaine can inhibit dopamine uptake (as can liriodenine and bulbocapnine), which may well play a role in the use of some species as anti-anxiety agents	
Grifficyclocin B: anti-tumour activity against liver cancer cell lines; analogues examined for drug development	Chen et al. (2018)
Altholactone: anti-inflammatory, anticancer; active against prostate and bladder cancer cell lines	Zhao & Li et al. (2014); Jiang et al. (2017)
Styryllactones: poor water solubility; styryllactones complexed with HP-β-CD (hydroxypropyl-β-cyclodextrin) showed significantly enhanced cytotoxic effects	Ma et al. (2020)
Goniothalamin (and derivatives):	
numerous studies show anticancer activity	Lee et al. (2008); Li et al. (2013); Barcelos et al. (2014); Seyed et al. (2014); Li et al. (2016); Weber et al. (2017); Sachs et al. (2019)
Drug development: enhanced anticancer activity and Selectivity of goniothalamin with acetalated Dextran (Ac-Dex) nanoparticles	Braga et al. (2020)
Antimalarial potential in combination with chloroquine	Mohd Ridzuan et al. (2006)
Anti-inflammatory, anti-ulcer and gastroprotective and colon protective	Vendramini-Costa et al. (2014, 2015 and 2017)
Cardiovascular system: potential use in cardiac stent (restenosis) treatments	Chan et al. (2010)
Antifertility	Hawariah et al. (1994)
Antimicrobial: weak antibacterial activity; significant antifungal action; potent anti-Candida activity	Martins et al. (2009); Mosaddik & Haque (2003)
Antiparasitic: anti-trypanosoma	de Fatima et al. (2006)
Goniothalamus albiflorus	

Essential oil:1,8-cineole (13%), α-pinene (11%), ledol (7.5%), caryophyllene oxide (7%),	Wanner et al. (2016)
Goniothalamus andersonii (Malaysia)	
Goniothalamin (and plant extract): strong inhibition of plant growth	Wasano et al. (2015)
Goniothalamus australis (Australia)	
Styrllactones and alkaloids (plant extract): antiplasmodial; sauristolactam and anonaine had particularly potent antiparasitic activity	see Levrier et al. (2013)
Goniothalamus cheliensis (China)	
Anticancer styllactone: cheliensisin A active in human bladder cancer; antileukaemia	Zhang et al. (2014); Zhang et al. (2016b)
Twig and leaf extracts: complex chemistry including bioactive styryllactones; griffithazanone A active against colorectal cancer cells	Jaidee et al. (2019b)
Goniolactone C: anti-restenosis potential for heart surgery procedures	Sun et al. (2014)
Goniothalamus elegants (Thailand, Vietnam)	
Styryllactones and aristolactams (bark extracts): significant cytotoxic, anticancer and antiplasmodial activity demonstrated	Suchaichit et al. (2015)
Goniothalamus griffithii (Thailand)	
Anticancer: induce apoptosis, activity due to pinocembrin and goniothalamin	Banjerdpongchai et al. (2016)
Goniothalamus lanceolatus (Malaysia)	
Medicinal use for treating fevers and skin diseases; antimalarial activity of root extract and parvistone D	Kaharudin et al. (2020)
Cytotoxic styryllactones identified	Bihud et al. (2019)
Goniothalamus laoticus (Thailand)	
Styrllactones and an alkaloid isolated from flowers: antiplasmodial, cytotoxic, antimycobacterial activity	Lekphrom et al. (2009)
Nordicentrine: antiplasmodial, cytotoxic and antimycobacterial activity	
Goniothalamus longistipetes (Borneo)	
Antibacterial components identified (styryllactones and a benzoic acid)	Teo et al. (2020)
Goniothalamus macrocalyx (Vietnam)	
Styryllactones isolated (fruit extracts), plus acetogenins eg. annonacin, isoannonacin; 3-deoxycardiobutanolide has significant activity against cancer cell lines; 7-acetylaltholactone also showed active anticancer properties	Trieu et al. (2014)
Goniothalamus macrophyllus (Malaysia)	
Essential oil: germacrene D (25%), bicyclogermacrene (12%), α-copaene (7%), δ-cadinene (6%),	Shakri et al. (2020)

Goniothalamus marcanii (Thailand)	
Cytotoxic activity (stem bark): marcanine G showed activity against lung and breast cancer cell lines; 5-acetyl goniothalamin also active against breast cancer	Boonmuen et al. (2016); Thanuphol et al. (2018)
Goniothalamus malayanus (Malaysia)	
Essential oil: bicyclogermacrene (44%), germacrene D (21%), β-elemene (8%)	Shakri et al. (2020)
Goniothalamus scortechinii (Malaysia)	
Goniothalamin: antibacterial (leaf extracts) with good broad spectrum activity, also anti-Candida properties	Wiart et al. (2007); Seyed et al. (2014)
Goniothalamus sawtehii (Myanmar, Thailand)	
Anticancer activity: acetogenin (sawtehtetronenin) active against liver and breast cancer cells	Thiplueang et al. (20140
Goniothalamus tamirensis (Thailand)	
Anticancer activity: colon cancer cells line (styryllactone: acetoxygoniothalamin)	Meesakul et al. (2020a)
Meiogyne	
Meiogyne cylindrocarpa (Malaysia)	
Sesquiterpene: meiogynin A shows anticancer (antiproliferative) activity	Litaudon et al. (2009)
Meiogyne baillonii (New Caledonia)	
Extracts (bark): stictic acid which is of interest for anticancer studies; extracts also contain baillonic acid, lactones, butenolides, aristolactams and aporphine alkaloids	Olivon et al. (2018)
Melodorum	
Melodorum fruticosum (Thailand)	
Extract (leaf): anti-inflammatory activity; melodamide A isolated with pronounced anti-inflammatory activity	Chan et al. (2013); Engels et al. (2018 & 2019)
Endophytic fungi (flower extracts): antioxidant and broad-spectrum antibacterial components isolated	Tanapichatsakul et al. (2018)
Cytotoxic components (root extracts) e.g. melodorinol and analogues	Hongnak et al. (2015)
Cytotoxic butenolides (flower extracts): anti-melanogenesis activity	Tanabe et al. (2018)
Melodorum siamensis (Thailand)	
Cancer studies: cytotoxic chalcone derivatives isolated	Prawat et al. (2013)
Extracts (fruit and leaf): contain amides and flavonoids	Jaidee et al. (2019a)
Miliusa	See: The Son (2019) for phytochemical review
Miliusa balansae (Vietnam)	
Flavonoid: chrysosplenol C has cardioactive and antiviral properties; also potential to enhance antibacterial drug activity	Semple et al. (1999); Son et al. (2011); Williams et al. (2013); Venkateswararao et

	al. (2015)
Alkaloids eg. liriodenine	The Son (2019)
Extract: antioxidant and anti-inflammatory activity	Thao et al. (2015)
Flavones: cytotoxic activity	Kamperdick et al. (2002); Huong et al. (2005)
Anticancer potential: miliusol	The Son (2019)
Miliusa cuneata (Thailand)	
Protoberberine alkaloids: antimalarial activity	Promchai et al. (2016)
Alkaloids eg. liriodenine	The Son (2019)
Anticancer potential: miliusol	The Son (2019)
Miliusa fragrans (Thailand)	
Antiviral: anti-herpes activity	Sawasdee et al. (2013); The Son (2019)
Miliusa sessilis (Thailand)	
Miliusin neolignans (leaf extracts) isolated; dehydrodieugenols (A and B); miliusin B showed good anticancer activity	Pootaeng-On et al. (2020)
Miliusa sinensis (Vietnam)	
Extracts (flavones, chalcones): cytotoxic activity	Thuy et al. (2011)
Miliusanes: anticancer (antiproliferative) lead molecules for drug development	Xu et al. (2019a)
Miliusol: anticancer properties	The Son (2019)
Miliusa smithiae (Thailand)	
Anticancer flavonoid (ayanin)	The Son (2019)
Miliusa tomentosa (India)	
Extract and oil (leaf): broad-spectrum antimicrobial activity; strong antibacterial; also against *Candida* and *Fusarium*	Badgujar & Surana (2011); The Son (2019)
Essential oil: analgesic	Menon & Kar (1970)
Miliusa umpangensis (Thailand)	
Anticancer components: flavonoids (ayanin) and miliusanes	Sawasdee et al. (2014); The Son (2019)
Miliusa velutina (Thailand)	
Antimalarial, antibacterial, antimycobacterial and cytotoxic activity (fruit & flower components)	Promgool et al. (2019); The Son (2019)
Epoxyconiferyl alcohol: cytotoxic against liver cancer cell lines	Nguyen Thien et al. (2020)
Acetogenins present e.g. goniothalamusin (moderate antibacterial activity)	The Son (2019)
Mitrella	
Chrysin: this flavonoid from *M. kentii* has shown extensive pharmacological activity. It is also found in bee products (honey, propolis) and Passionflower vines (genus *Passiflora* esp. *P. caerulea*)	
Mitrella kentii (Malaysia)	
Malaysian healers use the root decoction to treat fevers	Sidahmed et al. (2013)

Plant extracts: rich in isoquinoline alkaloids, dihydrochalcones and benzoic acids; extracts have shown anti-inflammatory activity	Saadawi et al. (2012)
Leaf extracts: components have anticoagulant potential	Saadawi et al. (2012)
Chalcone: desmosdumotin C (bark extracts) demonstrated a gastroprotective effect linked with antioxidant, anti-inflammatory and anti-*Helicobacter* properties.	Sidahmed et al. (2013)
Desmosdumotin C: analogues evaluated for anticancer activity	Wen et al. (2019)
Chrysin (flavonoid): bioavailability is very low (0.003–0.02%) due to limitations imposed by poor solubility and rapid excretion; strategies are being investigated to improve availability eg. cyclodextrin complexes or oil-in-water emulsions which improve chrysin solubility	Nabavi et al. (2015); Fenyvesi et al. (2020); Gao et al. (2021); Talebi et al. (2021b); Stompor-Goracy et al. (2021); Ting et al. (2021)
Chrysin (antimicrobial): antiviral against Coxsackievirus; potential inhibition of influenza virus; also enterovirus 71, chikungunya virus, HIV; chrysin-nanoparticles exhibited enhanced anti-biofilm efficacy against *S. aureus*	Song et al. (2015); Siddhardha et al. (2020); Kim et al. (2021); Talebi et al. (2021b)
Chrysin (chemoprotective): anti-toxin activity with antidotal potential	Samarghandian et al. (2019)
Chrysin: anti-inflammatory, wound healing potential, potential for treatment of dermatitis and psoriasis (skin inflammation); analgesic, potential use for nerve pain (neuropathic pain) eg. diabetic neuropathy; anti-gout (reduce uric acid, xanthine-oxidase inhibition, anti-inflammatory); reduce knee joint (synovial) inflammation	Lin et al. (2015); Mani & Natesan (2018); Naz et al. (2019); Hong et al. (2020); Liao et al. (2020); Yeo et al. (2020 & 2021); Li et al. (2020); Rayiti et al. (2020); Chang et al. (2021)
Chrysin (cosmetic): anti-inflammatory, skin protectant potential (inhibit melanogenesis, UV protection)	Zhu et al. (2016); Choi et al. (2017)
Chrysin (immunomodulatory): antioxidant, anti-allergenic, use in autoimmune disorders (e.g. encephalomyelitis)	Zhang et al. (2015a); Mani & Natesan (2018); Del Fabbro et al. (2019a); Mohammadi et al. (2019a); Naz et al. (2019)
Chrysin (gastrointestinal tract): good potential for use in inflammatory bowel disorders (colitis); wound healing; enhance gastric ulcer healing; anti-diarrhoea	Mani & Natesan (2018); Song et al. (2019); Fagundes et al. (2020); Talebi et al. (2021b)
Chrysin (haematology): anti-sickling activity with potential use in sickle cells disease	Muhammad et al. (2019)
Chrysin (cardiovascular): cardioprotective, anti-thrombotic, anti-cholesterol, anti-atherosclerosis, vasorelaxant and antihypertensive; anti-ischaemic in heart attack (acute myocardial infarction); vascular inflammatory disorders	Nabavi et al. (2015); Rani et al. (2016): Dong et al. (2019); Farkhondeh et al. (2019); Wang et al. (2019); ma et al.

	(2020); Talebi et al. (2021b)
Chrysin (reproductive disorders): chemoprotective; protective effect on testicular, prostate and ovarian function; benefits for endometriosis, ovarian torsion	Mani & Natesan (2018); Melekoglu et al. (2018); Shoieb et al. (2018); Belhan et al. (2019); Ryu et al. (2019)
Chrysin (respiratory tract): anti-inflammatory, anti-asthmatic; anti-oedema, protection against pleurisy and chemical-induced lung damage, also lung fibrosis, pulmonary oedema and hypertension, COPD (chronic obstructive pulmonary disease) allergic inflammation, pneumonia	Yao et al. (2016); Wang et al. (2019); Yang et al. (2018b); Talebi et al. (2021b)
Chrysin (bone metabolism): anti-inflammatory, anti-arthritic, bone protective and chondroprotective; anti-osteroarthritis	Mani & Natesan (2018); Xia et al. (2018); Zhang et al. (2019a)
Chrysin (nervous system): neuroprotective, anti-inflammatory; support memory, anti-seizure (anti-convulsive), anti-anxiety and antidepressant; benefits for spinal cord injury, anti-ischaemic protection against traumatic brain injury and memory loss (eg. stroke)	Nabavi et al. (2015); Filho et al. (2016); Thangarajan et al. (2016); Sharma et al. (2017); Farkhondeh et al. (2020); Li et al. (2019); Rashno et al. (2019); Rodriguez-Landa et al. (2019); Sarkaki et al. (2019); Shooshtari et al. (2019); Bortolotto et al. (2020); Prajit et al. (2020); Khombi Shooshtari et al. (2021); Stompor-Goracy et al. (2021); Talebi et al. (2021b)
Chrysin (neuroprotective): chemoprotective; also activity in a wide spectrum of neurodegenerative and neuroinflammatory conditions eg. memory dysfunction in Parkinson's and Alzheimer's disease; also benefits for Huntington's disease, multiple sclerosis, autoimmune encephalitis and neuritis; neuropathic pain	Guo et al. (2016); Goes et al. (2018); Del Fabbro et al. (2019b); Krishnamoorthy et al. (2019); Angelopoulou et al. (2020); Stompor-Goracy et al. (2021); Talebi et al. (2021b)
Chrysin (metabolic activity; liver and kidney function): anti-diabetic and protect against diabetic cellular damage; chrysin-phytosomes show enhanced bioavailability; anti-obesity potential; hepatoprotective, antifibrotic (activity enhanced by cyclodextrin complexes and nanocomplex formulation) and protective against fatty liver; reduce blood ammonia levels; anti-ischaemic; chemoprotective, active against cyclosporine A kidney damage (renoprotective, antifibrotic)	Balta et al. (2015); Kang et al. (2015); Satyanarayana et al. (2015); Basu et al. (2016); Funakoshi-Tago et al. (2016); Samarghandian et al. (2016b); Andrade et al. (2019a & 2019b); Mohammadi et al. (2019b);

	Pai et al. (2019); Pingili et al. (2019); Temel et al. (2019); Xu et al. (2019b); Ahmed et al. (2020); Ignat et al. (2020); Kim & Imm (2020); Alkahtane et al. (2021); Ciceu et al. (2021); Nagavally et al. (2021)
Chrysin (anticancer): active against a broad range of cancers with activity limited by low bioavailability; anti-metastatic; cytotoxic, antioxidant, active against numerous cell lines e.g. oral, nasopharyngeal, oesophageal, bone, thyroid, prostate, skin, breast, cervical, ovarian, lung, pancreas, liver, bladder, kidney, melanoma, leukaemia, choriocarcinoma; naturally concentrates in lower gastrointestinal tract suggesting anticancer potential against colorectal cancer; significant chemoprotective protential	Kasala et al. (2015, 2016a and 2016b) Mohammadian et al. (2016); Rashid et al. (2016); Samarghandian et al. (2016a); Mani & Natesan (2018); Balam et al. (2020); Kim & Jung et al. (2020); Moghadam et al. (2020); Gao et al. (2021); Talebi et al. (2021a)
Chrysin (chemoprotective): anti-toxin activity; prevention of chemotherapy-induced liver, testicular and kidney damage; protective effects against numerous drugs eg. methotrexate, diclofenac, cyclophosphamide, mitomycin C	Pingili et al. (2019); Samarghandian et al. (2019); Temel et al. (2019); Stompor-Goracy et al. (2021)
Chrysin (synergistic anticancer activity): enhance anticancer drug activity (e.g. docetaxel, 5-fluorouracil, camptothecin); formulations focusing on improving drug bioavailability and enhancement of anticancer activity	Lim et al. (2016); Tang et al. (2016); Komath et al. (2018); Mani & Natesan (2018); Ghamkhari et al. (2019); Lee et al. (2021)
Chrysin (eye disorders): anti-inflammatory, prevent macular degeneration and anti-cataract potential; protective for uveal inflammation (uveitis) and macular degeneration; protective effect on eye function with possibilities for prevention of diabetic retinopathy (although there is conflicting evidence)	Meng et al. (2016); Song et al. (2016); Sundararajan et al. (2016); Ahmed et al. (2020); Liao et al. (2020); Song et al. (2020); Wojnar et al. (2020)
Mitrephora	
Mitrephora alba (Thailand)	
Diterpenoids with cytotoxic activity isolated	Rayanil et al. (2013)
Mitrephora celebica (Indonesia)	
Extracts and diterpenes: active against MRSA (methicillin-resistant *Staphylococcus aureus*) and *Mycobacterium smegmatis*	Zgoda et al. (2001); Zgoda-Pols et al. (2002)
Mitrephora diversifolia (Australia)	
Alkaloid: antiplasmodial, malarial potential	Mueller et al. (2009)
Mitrephora glabra (Indonesia)	
Extracts: cytotoxic and antibacterial components e.g. diterpenes and liriodenine	Li et al. (2009)

Antimicrobial: various compounds demonstrate antifungal and antimycobacterial activity	
Mitrephora maingayi (China)	
Mitregenin (acetogenin): annonaceous acetogenins are not widespread in the genus	Zhang et al. (2010)
Mitrephora sirikitiae (Thailand)	
Anticancer: cytotoxic lignans and alkaloids (stem and leaf extracts) eg. magnone A and 6-methoxymarcanine A; liriodenine, oxoputerine	Anantachoke et al. (2020)
Mitrephora teysmannii (Thailand)	
Components with antidiabetic potential isolated	Rayanil et al. (2016)
Mitrephora thorelii (China)	
Clerodane-type diterpenes with anti-tumour activity against liver cancer	Meng et al. (2007)
Mitrephora tomentosa (Thailand)	
Mitrephentosins isolated (leaf and twig extracts) with antimalarial activity	Wongsomboon et al. (2021)
Mitrephora vulpina (Malaysia)	
Antithrombotic potential: phylligenin and quebrachitol show potent anti-platelet activity	Moharam et al. (2010)
Mitrephora wangii (Thailand)	
Medicinal use as an immune tonic and antimicrobial agent: antioxidant neolignans isolated with potent activity; flowers contain endophytes that can product beta-thujaplicin (antibacterial activity)	Jaidee et al. (2018); Monggoot et al. (2018)
Phaeanthus	
Phaeanthus ebracteolatus (syn *P. ophthalmicus*; Philippine Islands)	
BBIQ (bisbenzylisoquinalone) alkaloids are present eg. phaeantharine which has antibacterial activity	Van Beek et al. (1983)
Phaeanthus macropodus (Papua New Guinea; PNG)	
Main alkaloids: phaeanthine [sic] and limacine; leaf and bark alkaloids show toxicity (hypotension, diuretic)	Collins et al. (1990)
Phaeanthine: antibacterial against *Bacillus subtilis* and *Staphylococcus aureus*, as well as exhibiting antifungal properties.	
Phaeanthus crassipetalus (Southeast Asia)	
Isoquinoline alkaloids (including limacine): vasorelaxant	Zaima et al. (2012)
Phaeanthus ophthalmicus (Philippine Islands)	
Medicinal plant used to treat bacterial conjunctivitis and similar infections: tetrahydrobisbenzyl alkaloids eg. tetrandrine, limacusine, the latter showing substantial anti-inflammatory and antibacterial activity	Magpantay et al. (2021)
Phaeanthus vietnamensis (Vietnam)	

Medicinal use for the treatment of inflammatory disorders: anti-inflammatory antioxidant isolated	Nhiem et al. (2017)
Polyalthia	
Anti-inflammatory studies: *P. cerasoides* (polycerasoidol), *P. longifiolia* (numerous components), *P. parviflora* (styryllactones)	Chen et al. (2021)
Chemistry: alkaloids and terpenes are the most abundant chemical in the genus; also present are flavonoids, lignans, sterols, organic acids etc.	Chen et al. (2021)
Clerodane-type diterpenes are of particular phytochemical interest with antimicrobial, anti-inflammatory, antidiabetic, anti-tumour, anticancer properties	Chen et al. (2021)
HCD (16-hydroxycleroda-3,13-dien-15,16-olide): clerodane diterpene with anti-inflammatory, neuroprotective, anticancer, antifungal, antidiabetic, anti-obesity and antimicrobial activity	Marthanda Murthy et al. (2005); Beg et al. (2015); Huang et al. (2017); Zheng et al. (2019)
Antimicrobial: alkaloids eg. anonaine (anti-mycobacterial); acetogenins eg. debilisones (antibacterial); oxoprotoberberine eg. pendulamines (antibacterial); clerodane diterpenes eg. kolavenic acid (antibacterial); triterpenoids eg. friedelin (antibacterial); triterpene eg. suberosol (antiviral)	Chen et al. (2021)
Alkaloids and terpenes: numerous components with cytotoxic, anti-tumour activity eg. goniothalamin, liriodenine, anonaine, clerodane diterpenes	Chen et al. (2021)
Altholactone: antimicrobial (antifungal, antibacterial); active against *Mycobacterium tuberculosis*; benzoate derivatives show enhanced antifungal activity; also anticancer, anti-inflammatory	Euranorasetr et al. (2016); Elnaas et al. (2020)
Polyalthic acid (ent-polyalthic acid and derivatives): originally isolated from *Polyalthia fragrans*; antifungal (active against dermatophytes); interesting antibacterial activity against oral pathogens; anti-*Candida*; antiparasitic (anti-leishmania, anti-trypanosoma)	Mizuno et al. (2015); Bardaji et al. (2016); Borges et al. (2016); Abrao et al. (2018); Pfeifer Barbosa et al. (2019); Cicek et al. (2020); Pontes de Sousa et al. (2020)
Polyalthic acid: anti-inflammatory, analgesic, synergistic with naproxen; gastroprotective, muscle relaxant (potential for spasmodic respiratory disorders), anti-tumour and chemoprotective against colon cancer	Reyes-Trejo et al. (2008); Sánchez-Mendoza et al. (2008); Huang et al. (2013); Senedese et al. (2019); Rodríguez-Silverio et al. (2021)
Polyalthia cerasoides	
Polycerasoidol: anti-inflammatory (significant activity); cardioprotective	Chen et al. (2021)
Stem bark extracts: antioxidant, analgesic, hepatoprotective	Goudarshivananavar et al.

	(2015)
Anticancer: components (DMMA) active in leukaemia, breast, liver cancer cell lines	Banjerdpongchai et al. (2013)
Polyalthia cinnamomea (Malaysia)	
Alkaloids (twig extract): antidiabetic potential	Suthiphasilp et al. (2020b)
Polyalthia evecta (southern IndoChina)	
Medicinal use (Thailand): carminative, galactagogue	Machana et al. (2012)
Extracts (root): components were antiplasmodial against malaria parasite (evectic acid); also anti-mycobacterial activity (furans)	Machana et al. (2012)
Anticancer: activity against liver cancer cell line	Machana et al. (2012)
Polyalthia longifolia (India, Pakistan & Southeast Asia)	
Anti-parasitic (anti-leishmania, anti-trypanosoma), antimicrobial, cardioprotective (cholesterol-lowering, antihypertensive), anti-obesity, anti-cholinergic (anti-Alzheimer's)	See text: Chapter 11
Essential oil: *Polyalthia longifolia* var. *pendula* beta-caryophyllene (30%), alpha-zingiberene (22%), aromadendrene (15%), beta-selinene (9%).	Thang et al. (2013)
Antimicrobial: antibacterial; anti-MRSA; synergistic activity with antibiotics	Gupta et al. (2013 & 2016); Kirubakari et al. (2020)
Clerodane diterpenes (and derivatives): anti-Candida; antifungal; anti-virulence and antibiofilm properties, active against *S. aureus* (MRSA) and *Streptococcus mutans*	Marthanda Murthy et al. (2005); Faizi et al. (2008); Bhattacharya et al. (2015); Khan et al. (2017)
Antifungal: diterpenoids active against plant pathogens eg. rice blast, tomato late blight, pepper anthracnose	Nguyen et al. (2021b)
Extract (plant): anti-corrosive activity; green biocide active against sulphate-reducing bacteria	Vaithiyanathan et al. (2018)
Antiviral: anti-Herpes; activity against paramyxoviruses	Yadav et al. (2020)
Cosmetic (proanthocyanidins): antioxidant, skin-whitening potential	Chen et al. (2014)
Anti-inflammatory (significant activity leaf, stem bark and root extracts; also clerodane diterpenes): antioxidant, analgesic; potential for use in numerous disorders including irritable bowel disease and other forms of colitis; protective against bowel (colorectal) cancer	Mandal et al. (2012); Moniruzzaman et al. (2015); Zheng et al. (2019); Chen et al. (2021)
Clerodane diterpenes (seeds): anti-gout potential (xanthine-oxidase inhibition)	Nguyen et al. (2021a)
Gastroprotective: clerodane diterpenes active against *Helicobacter pylori*; also anti-histamine activity	Edmond et al. (2020)
Alkaloids: anti-cholinergic activity with potential use for Alzheimer's disease	Naaz et al. (2013)
Quercetin and kolavenic acid: anti-*Acanthamoeba* activity;	Anwar et al.(2020)

enhanced with conjugated silver nanoparticle complex	
Kolavenic acid (diterpene): anti-inflammatory, anticancer potential; plant defensive chemical against insects	Da Trindade et al. (2018); Morimoto (2019); Kurisawa et al. (2020); Akabane et al. (2021)
Rutin: can be present in appreciable amounts; vasoprotective, anti-inflammatory, anticancer, antiarthritic; useful for epistaxis (nose bleeds), hypertension, radiation injury, retinopathy, varicose veins to strengthen vascular structure and prevent capillary fragility	Williams (2011); Doshi et el. (2014); see Table 12.1 for further details
Hepatoprotective: extracts and clerodane diterpenes	Chen et al. (2021)
Renoprotective: protective against radiation induced kidney inflammation (nephritis); kaempferol-3-O-rutinoside and anonaine had antihistaminic activity	Mostafa et al. (2021)
Antimalarial activity (leaf extracts)	Gbedema et al. (2015); Bankole et al. (2016); Kwansa-Bentum et al. (2019)
Antiparasitic: anti-trypanosoma; anti-leishmania (diterpene HCD)	Misra et al. (2010); Ebiloma et al. (2018)
Metabolic activity and anti-diabetic: diterpenes isolated with hypoglycaemic (nanoencapulation to enhance activity), hypolipidaemic, hepatoprotective; also antioxidant flavonoids protective against diabetic complications	Sashidhara et al.(2011); Huang et al. (2017 & 2019); Rai et al. (2021)
Radioprotective (leaf extract)	Jothy et al. (2016)
Chemoprotective (heavy metal and drug toxicity): prevention of cadmium induced hepatotoxicity; also paracetamol liver injury	Oyeyemi et al. (2020); Chen et al. (2021)
Anticancer: induce apoptosis (extracts: methanolic leaf and polyphenol-rich) active against prostate cancer cell lines; also clerodane diterpenes against leukaemia, glioma, oral, renal and bladder cancer cell lines	Sari et al. (2013); Thiyagarajan et al. (2016); Cheng et al. (2017); Vijayarathna et al. (2017a & 2017b); Afolabi et al. (2017 & 2019); Chen et al. (2018); Shanmugapriya et al. (2019 & 2020); Chen et al. (2020)
Anticancer: antiproliferative, apoptosis-inducing activity of seed peptide	Rupachandra & Sarada (2014)
Polyalthia macropoda (see *Phaeanthus ophthalmicus*)	
Anti-ulcer activity: clerodane diterpenes	Chen et al. (2021)
Polyalthia nitidissima (= *Huberantha nitidissima*; Australia)	
Complex alkaloidal mixture: numerous alkaloids are present from different classes e.g. reticuline, liriodenine, dauricine and stepholidine	Collins et al. (1990)
Alkaloids: nervous system depressant and toxic potential; slight analgesic, antipyretic and antispasmodic activity	Collins et al. (1990)

Polyalthia oliveri (Cameroon, Africa)	
Essential oil (high levels in different groups): β-caryophyllene (1-51% group I), α-humulene (1-48% group II), alloaromadendrene (0-25% group III), isoguaiene (0-28% group IV) germacrene B (0-18% group V), δ-cadinene (0.4-19% group VI), β-selinene (0.2-18.5%)	Ouattara et al. (2016)
Alkaloids: oliveroline showed anti-Parkinsonian properties; oliverine was antihypertensive	Quevauviller & Hamonniere (1977)
Alkaloids (stem bark extracts): antiplasmodial activity	Kouam et al. (2014)
Polyalthia rumphii (China)	
Anticancer components identified eg. oxostephanine with significant anticancer activity	Wang et al. (2012); Wang et al. (2013)
Polyalthia **sp.** (PNG)	
Alkaloids (leaf and bark): depressant and analgesic	
Polyalthia simiarum (China)	
Cytotoxic terpenes isolated	Duan et al. (2020)
Clerodane diterpenes: antioxidant (stem bark extract)	Chen et al. (2021)
Polyalthia suberosa (Bangladesh)	
Medicinal use: abortifacient, laxative, febrifuge, analgesic, anti-rheumatic, anti-inflammatory agent and as a tooth cavity filling	Yasmen et al. (2018)
Extract (leaf): analgesic, anti-inflammatory	Yasmen et al. (2018)
Alkaloid: N-trans-feruloyltyramine (NTF) antioxidant and anti-Alzheimer's potential	Thangnipon et al. (2012)
Triterpene: suberol identified with anti-HIV activity	Li et al. (1993)
Essential oil (leaf): bicyclogermacrene (26%), (E)-caryophyllene (8%), β-pinene (13%); cytotoxic activity; antibacterial against *E. coli*	The et al. (2021)
Essential oil (twig): (E)-caryophyllene (17%), α-humulene (9.5%), caryophyllene oxide (9.5%), camphene (8%), tricyclene (6%); cytotoxic activity; antimicrobial against *Pseudomonas aeruginosa, Aspergillus niger, Candida albicans*	The et al. (2021)
Pseuduvaria	
Pseuduvaria **spp.**	
Alkaloids and benzopyan derivatives from numerous species show anticancer potential	Panidthananon et al. (2018)
Pseuduvaria **cf.** ***dolichonmena*** (PNG)	
Alkaloids: complex alkaloid profile, antimicrobial activity	Collins et al. (1990)
Leaf alkaloids: glaucine, norglaucine, and a trimethoxynoraporphine	
Leaf alkaloids: central nervous system depression and toxicity, hypotensive	
Bark alkaloids: nervous system depression, hypothermia (lowered temperature), analgesic, toxic	

Pseuduvaria fragrans (Thailand)	
Tyramine-derived amides: antidiabetic potential	Panidthananon et al. (2018)
Pseuduvaria* cf. *grandiflora (PNG)	
Alkaloids: dimethoxynorapophine (main component), liriodenine and anonaine	Collins et al. (1990)
Extract (stem bark): nervous system depression, transient hypotension	
Pseuduvaria macrophylla (Malaysia)	
Extract (aerial parts): antibacterial	Othman et al. (2011)
Antidiabetic potential	Panidthananon et al. (2018)
Essential oil (germacrene rich): weak anticholinesterase activity	Salleh et al. (2019)
Pseuduvaria montana (Malaysia)	
Alkaloids: antidiabetic potential	Panidthananon et al. (2018); Taha et al. (2014)
Pseuduvaria monticola (Malaysia)	
Alkaloids: apoptosis in human breast cancer cells	Taha et al. (2015)
Bark extracts: antidiabetic activity	Taha et al. (2014)
Pseuduvaria rugosa (Thailand)	
Alkaloids: alkaloids eg. pseuduvarines showed cytotoxic activity against various cancer cell line; aporphine alkaloids also showed antiproliferative activity	Taha et al. (2011); Uadkla et al. (2013)
Pseuduvaria trimera (Thailand)	
Alkaloids (leaf, twig): cytotoxic aporphine alkaloids isolated with activity against liver and breast cancer cell lines	Sesang et al. (2014)
Schefferomitra	
Schefferomitra subaequalis (PNG)	
Alkaloids (stem bark): liriodenine, anonaine, asimilobine, isoboldine, anolobine, aequaline, schefferine, aristolaxam BII	Collins et al. (1990)
Uvaria	
Anti-inflammatory conditions: wide use in traditional medicine; complex chemistry with diverse bioactive components isolated eg. acetogenins, alkaloids, flavonoids etc. with anti-inflammatory, anticancer, antioxidant, immunomodulatory activity	Jalil et al. (2020)
Flavonoids with substantial antimicrobial activity are present in the genus	Oliver-Bever (1986); Macabeo et al. (2012)
Uvaria acuminata (China)	
Anti-inflammatory, immunomodulatory and anticancer potential: contains bioactive flavonoids and annonaceous acetogenins	Jalil et al. (2020)
Extracts: acetogenins active against liver cancer cell lines with potential to reverse drug resistance	Qian et al. (2015)

Uvaria afzelii (Africa, Nigeria)	
Medicinal use: febrifuge; fevers, urinary tract infections (root bark)	Jalil et al. (2020)
Hepatoprotective: significant activity (root)	Jalil et al. (2020)
Extracts: antiplasmodial and antimicrobial activity	Parmar et al. (1994); Menan et al. (2006)
Uvaria alba (Philippines)	
Extracts: antibacterial (anti-tubercular) potential	Macabeo et al. (2017)
Extract: anticancer activity against leukaemia and cervical cancer cell lines; significant ACh inhibition with memory supportive potential	Quimque et al. (2021)
Uvaria angolensis (Cameroon, Africa)	
Traditional medicine: febrifuge, rheumatic fever (leaves)	Jalil et al. (2020)
Extracts (stem bark): antiviral (anti-HIV) potential	Ngoutane Mfopa et al. (2018)
Uvaria chamae (Nigeria)	
Traditional medicine: fever, dysentery (root bark); catarrh, generalised body pain (roots and bark); wound healing, local application to injuries and sores (leaf); swollen joints (leaf); also liver disease eg. jaundice, haemorrhoids (root, root bark)	Jalil et al. (2020)
Essential oil: benzyl benzoate (23%), p-cymene (14%), T-cadinol (12%)	Thomas & Essien (2020)
Anti-inflammatory: significant activity (roots; leaf); also analgesic	Jalil et al. (2020)
Extract (root): antidiabetic (clinical use), hypoglycaemic; pancreatic protective, cholesterol-regulating activity; support weight loss and cardioprotective potential	Emordi et al. (2016 & 2018); Olumese Et al. (2019); Jalil et al. (2020)
Extract (leaves, roots): antifungal activity against *Candida* but not *Aspergillus*	Okwuosa et al. (2012)
Extracts (roots, chalcones): good activity against gram+ve bacteria (comparable to conventional antibiotics), also drug resistant bacteria (MRSA and VRE)	Koudokpon et al. (2018)
Extract (leaf): active against multi-resistant strains of *Salmonella enterica*	Legba et al. (2020)
Traditional medicine (hormonal influence): used for abnormal breast (nipple) discharge (independent of pregnancy and nursing); studies show influence of prolactin levels (anti-hyperprolactinemic activity)	Yakubu & Fayemo (2021)
Antiparasitic: antimalarial potential; combination with amodiaquine gave better results (but not against chloroquine-resistant malaria)	Okokon et al. (2006); Adepiti & Iwalewa (2016)
Extract (root bark): excellent hepatoprotective activity	Madubunyi et al. (1996); Madubunyi (2012); Jalil et al. (2020)

Extract (leaf): anti-toxin; high level of protection against Naja venom (haemolytic, fibrinolytic, haemorrhagic, and cytotoxic activities)	Gabriel et al. (2020)
Extract (root): used as an anticancer remedy; antioxidant, analgesic, anti-inflammatory; contains cytotoxic acetogenins	Popoola et al. (2016, 2019 & 2021); Jalil et al. (2020); Thomas & Essien (2020)
Phytoremediation: potential for use to degrade petroleum hydrocarbons in contaminated soil	Anyasi & Atagana (2018)
Uvaria cherrevensis (Thailand)	
Extracts (root): antimalarial and anticancer potential; cherrevenols and cherrevenone isolated, the latter showed moderate cytotoxic activity; cytotoxic flavones also present	Auranwiwat et al. (2017 & 2018); Lekphrom et al. (2018); Jaipetch et al. (2019)
Uvaria comperei (Africa, Cameroon)	
Extracts: antioxidant and moderate antifungal properties	Sim et al. (2018)
Extracts (alkaloids, flavonoids): good antifungal activity against *Candida, Cryptococcus*	Kayo et al. (2020)
Uvaria dac (Southeast Asia)	
Extract (leaves): uvaridacols isolated; grandifloracin and uvaridacol L show activity against pancreatic cancer	Ueda et al. (2013); Awale et al. (2017)
Essential oil (leaf): high levels of *γ*-elemene (54%)	Thang et al. (2013)
Uvaria flexuosa (Taiwan)	
Extracts (flavone: UFM24): significant anti-inflammatory, antioxidant, lung protective; protective against endotoxin damage	Tsai et al. (2017)
Extract (leaves): anti-inflammatory components include flexuvarol B and chrysin	Hsu et al. (2016)
Uvaria grandiflora (Southeast Asia)	
Extracts (bark, flavonoids): strong antibacterial properties	Aminimoghadamfarouj et al. (2011b); Ong & Kim (2015)
Zeylenone: moderate anti-mycobacterial activity	Macabeo et al. (2020)
Extract (plant): significant broad-spectrum activity, particularly against *Colletotrichum musae* and *Phytophthora capsici*; zeylenone was strongly antifungal	He et al. (2021)
Extract (plant); botanical pesticide potential; active against cucumber pathogens and growth promotion of cucumber plants	He et al. (2021)
Extracts: zeylenone shows anticancer activity against diverse cancer cell lines e.g. leukaemia, prostate, gastric, ovarian, cervical	Zhang et al. (2015b & 2017); Xu et al. (2018); Yang et al. (2018a); Zeng et al. (2018); Macabeo et al. (2020)
Extracts: anti-inflammatory, zeylenol showed good activity, also cytotoxic, anticancer with potential to reduce chemotherapy side effects in breast cancer; synergistic with cisplatin in osteosarcoma studies	Seangphakdee et al. (2013); Jalil et al. (2020); Yang et al. (2021)

Uvaria hamiltonii (Nigeria)	
Extract: anti-inflammatory; contains pinocembrin	Jalil et al. (2020)
Extract (leaf): significant antidiabetic potential	Meesakul et al. (2020b)
Antiparasitic: anti-leishmania; anti-plasmodium (antimalarial potential)	Ankisetty et al. (2006); Nor Azman et al. (2018)
Extract (flowers): cyanidin-3-O-glucoside responsible for flower colour; complex fragrance volatiles examined	Barman et al. (2021)
Uvaria longipes (Thailand)	
Extract (plant): used for cancer treatments; anticancer activity (especially liver cell cancer lines); bullatacin and asiminecin isolated	Pumiputavon et al. (2019)
Uvaria lurida (Southeast Asia)	
Antidiabetic: studies show good activity for various components; antioxidant	Suthiphasilp et al. (2019); Jalil et al. (2020)
Uvaria micrantha (Southeast Asia, Malaysia, Solomon Islands)	
Traditional medicine: local inflammation (bark paste), fever (seed decoction); locally applied for asthma (flower paste), boils (leaf paste); headache, ophthalmia, gout (essential oil)	Jalil et al. (2020)
Extract (stem): cytotoxic components isolated	Boonsombat et al. (2020)
Uvaria narum (India, Sri Lanka)	
Traditional medicine: inflammatory disorders; eczema, jaundice, swelling, feverish conditions	Jalil et al. (2020)
Hepatoprotective: significant activity; anti-inflammatory, antioxidant; quercetin showed liver protective properties	Jalil et al. (2020)
Antimicrobial (antibacterial, antifungal) and anthelmintic.	Subrahmanya et al. (2011); Varghese et al. (2018)
Anticancer potential: anti-leukaemia	Jalil et al. (2020)
Uvaria rufa (Australia, Southeast Asia)	
Traditional medicinal use (Malaysia and Thailand): allergy and gastrointestinal ulcers (fruit); intermittent fever (heartwood and roots);	Jalil et al. (2020)
Extracts (leaf): anti-mycobacterial activity with anti-tuberculosis potential; flavonoids are of particular interest, particularly kaempferol and quercitrin	Macabeo et al. (2012); Paragas et al. (2014)
Lignans: cytotoxic activity against various cell lines	Nguyen et al. (2015)
Traditional use: prostate disorders, which has been supported by recent studies	Buncharoen et al. (2016)
Twig extracts: good activity against *Staphylococcus aureus*	Soonthornchareonnon et al. (2012)
Root extracts: antioxidant activity	Payakarintarungkul (2005)
Uvaria scheffleri (Africa, Tanzania)	
Traditional medicine (root): malaria, high-grade fevers, asthma, cough, tuberculosis, sore throat; also snake bites; skin infections (fruit)	Jalil et al. (2020); Anza et al. (2021)

Extract (roots): significant antibacterial activity against *S. aureus*; anticancer components also isolated	Anza et al. (2021)
Uvaria siamensis (Thailand)	
Extracts (roots; chalcones): antiplasmodial activity	Salae et al. (2017)
Uvaria tanzaniae (Africa: Tanzania)	
Chalcone (uvaretin: root bark extracts): antimalarial potential	Christopher et al. (2020)
Xylopia	
Xylopia aethiopica (tropical Africa)	
Traditional Medicine: dried fruits widely used as spice; bronchitis, asthma, infertility, postpartum tonic, and to induce afterbirth postpartum; analgesic for rheumatism, arthritis, headache, neuralgia and colic pain; also used for liver disorders	Woode et al. (2011); Kpodar et al.(2016)
Food spice: substantial antimicrobial activity, also anti-biofilm eg. *E. coli, Pseudomonas aeruginosa*; also *Candida albicans*	Tamfu et al. (2020)
Food spice (extract): anti-inflammatory for gastric disorders; antioxidant and anti-diabetic properties with regulation of insulin levels and pancreatic enzyme processes; potential benefits in diarrhoeal fluid regulation	Okwari et al. (2010); Adefegha & Oboh (2012); Nwakiban et al. (2019, 2020a & 2020b)
Extract (fruit and leaf): antidiabetic and antioxidant potential: fruit contain oleanolic acid as antidiabetic component	Mohammed et al. (2016); Ofusori et al. (2016); Mohammed & Islam (2017); Mohammed et al. (2019)
Extract (seed): antioxidant and reduce cholesterol levels	Nwozo et al. (2011)
Spice (Caution): heavy metal contamination of spices can be associated with higher lead levels	Asomugha et al. (2016)
Essential oil (leaf): β-pinene (up to 61%) was dominant in some samples), α-pinene (up to 19%), germacrene D (up to 29%) – the latter two components being dominant in other samples	Yapi et al. (2012a)
Essential oil (root bark): It differs drastically from leaf and fruit oils being dominated by two dimethylvinylcyclohexene isomers.	Yapi et al. (2012b)
Antimicrobial: active against respiratory tract pathogen eg. *Morexella cattarhalis*; anti-mycobacterial potential; traditional use for treating respiratory disorders, skin problems and as an analgesic	Fomogne-Fodjo et al. (2014)
Extract: isolates investigated for antiviral activity against SARS-CoV-2	Adegbola et al. (2021)
Essential oil (fruit): anti-inflammatory and antibacterial; moderate-good activity	Vyry Wouatsa et al. (2014); Alolga et al. (2019)
Extract (dried seeds): food preservative potential; benefits in retaining antioxidant properties of tomato and extend shelf-life	Babarinde & Adegoke (2015)

Extract and essential oil (fruit): anti-stress, antidepressant (5-HT & MAO-A interaction, antioxidant)	Biney et al. (2016); Ekeanyanwu et al. (2021)
Extracts (leaf): anti-inflammatory; used for painful inflammatory conditions (headache, muscular and rheumatic pain); anti-inflammatory flavonoids (notably kaempferol-3-O-rutinoside) isolated	Macedo et al. (2020)
Extract (fruit); anti-inflammatory, anti-anaphylactic with potential for allergic reactions, asthma, bronchitis and arthritis; xylopic acid shows good inflammatory activity with potential for respiratory tract disorders	Obiri & Osafo (2013); Obiri et al. (2014); Ekuadzi et al. (2018)
Extract (fruit); analgesic activity for extract and xylopic acid; also anti-inflammatory and antiarthritic (xylopic acid); potential use in relief of neuropathic and musculoskeletal pain; synergistic effects with morphine and diclofenac	Ameyaw et al. (2014); Woode et al. (2015); Woode et al. (2016); Alolga et al. (2021)
Extract (seed): anticancer; show potential against numerous cancer cell lines; antiproliferative (cervical cancer cells); kaurenoic acids have been identified with antiproliferative activity, also cytotoxic flavones; xylopic acid derivatives examined as antiproliferative agents for breast and lung cancers	Choumessi et al. (2012); Kuete et al. (2013 & 2016); Adaramoye et al. (2011a & 2017); Mbaveng et al. (2017); Soh et al. (2021)
Extract (fruit) anticancer potential against gastric adenocarcinoma	Ribeiro et al. (2021);
Gold nanoparticles (fruit extract): good antioxidant and anticancer activity in breast and colorectal cancer cell lines	Anadozie et al. (2021)
Extract (bark): antioxidant, particularly against metal toxicity eg. ion-induced liver damage	Moukette Moukette et al. (2015)
Chemoprotective: antioxidant protective activity against cadmium-induced endocrine disruption ie. ovarian and hormonal dysfunction	Godam et al. (2021)
Extract (seed): antifertility activity	Abarikwu et al. (2017)
Extract (stem bark): hormonal activity; potential detrimental effects on male fertility, decreased testosterone levels (also altered levels of serum estradiol, prolactin, progesterone, luteinizing and follicle stimulating hormones); traditional use to enhance fertility (male and female)	Ehigiator & Adikwu (2021)
Radioprotective: preventive effect on radiation-induced cellular damage including testicular damage	Adaramoye et al. (2010 & 2011b)
Insecticidal: mosquito repellent and insecticidal; activity against termites; effective against maize weevils (essential oil)	Lajide et al. (1995); Kouinki et al. (2005); Fleischer et al. (2008).
Traditional medicine: anthelmintic activity; used for treatment of schistosomiasis and lymphatic filariasis	Ataba et al. (2020)
Xylopia amazonica (Brazilian Amazon)	
Extracts (leaf): anti-malarial potential; xylopic acid shows anti-	Boampong et al. (2013); Lima

Plasmodium activity; co-administration of cryptolepine and xylopic acid has a synergistic anti-malarial effect with minimal toxicity	et al. (2015); Ameyaw et al. (2018)
Xylopia aromatica (South America)	
Fruit: contains phenolic acids (orientin/isorientin, chlorogenic acid), flavonoids (rutin, quercetin and luteolin), fatty acids (oleic and linoleic acid)	Oliveira et al. (2018)
Anticancer activity: plant extracts; tumour growth inhibition (leaf extract)	Suffredini et al. (2007); Gomes et al. (2021)
cytotoxic acetogenins are present (e.g. xylopianin, xylopiacin, xylomaticin), although these compounds do not appear to be a major focus of research	Colman-Saizarbitoria et al. (1994)
Antimicrobial: antibacterial (also good activity for *X. amazonica*); trachylobanic acid	Takahashi et al. (2006)
Stem bark and leaf essential oils: Antibacterial, anti-mycobacterial and antifungal (anti-Candida)	Fournier et al. (1994)
Insecticidal: mosquito larvicidal;	Rodrigues et al. (2006)
Antiparasitic: active against *Leishmania* and *Trypanosoma*; active against malaria parasite (*Plasmodium falciparum*)	Garavito et al. (2006); Osorio et al. (2007)
Antiplasmodial activity (root wood);	de Mesquita et al. (2007); Pares et al. (2021)
Phytotoxic activity (allelopathic): potential against agricultural weeds	Novaes et al. (2015)
Xylopia emarginata (South America, Brazil)	
Extract (root bark): Antiplasmodial activity	de Mesquita et al. (2007)
Extract (stem bark): insecticidal; acaricide active against poultry red mite)	Pares et al. (2021)
Xylopia ferruginea (Malaysia)	
Essential oil: bicyclogermacrene (24%), elemol (14%), guaiol (13%), germacrene D (12%).	Shakri et al. (2020)
Xylopia frutescens (Mexico and tropical South America)	
Traditional medicine: aromatic spice and digestive enhancement, bladder stimulant, leucorrhoea	Shakri et al. (2020)
Essential oil (Malaysian samples): bicyclogermacrene (23%), germacrene D (14%), elemol (13%), guaiol (13%)	Shakri et al. (2020)
Extracts (stem, stem bark, leaves, fruit): antibacterial against strains *Staphylococcus, Streptococcus* and *Bacillus subtilis*, modest antifungal activity against the *Microsporum canis* and *Cryptococcus neoformans*	Dos Santos et al. (2016)
Xylopic acid (a kaurene diterpene): antibacterial against *Bacillus* and *Staphylococcus*; anti-inflammatory	Dos Santos et al. (2016); Osafo et al. (2018)
Antifungal: excellent antifungal activity of essential oil (leaf); active against *S. aureus and Mycobacterium smegmatis* (stem bark: but	Dos Santos et al. (2016)

not against *Candida albicans*).	
Antifungal: active against dermatophytes ie. *Trichophyton rubrum, T. mentagrophytes, Microsporum canis, Epidermophyton floccosum*	Dos Santos et al. (2016)
Anti-inflammatory (seeds: significant activity) and antispasmodic properties (essential oil and extracts)	Dos Santos et al. (2016)
Antibacterial	Takahashi et al. (2006)
Antispasmodic (antidiarrheal activity)	Souza et al. (2015)
Essential oil (insecticidal): mosquito larvicidal (only in high concentrations); active against cowpea seed bruchid	Babarinde et al. (2015); Nascimento et al. (2017)
Essential oil: antiparasitic; active against Trypanosoma	da Silva et al. (2013)
Extracts (seeds and fruit): antiparasitic, antimalarial; active against drug-resistant *Plasmodium*	Dos Santos et al. (2016)
Essential oil (leaf): anticancer potential	Ferraz et al. (2013)
Xylopia langsdorfiana (Brazil)	
Essential oil (fruit: main components α-pinene and limonene): antitumour activity with low toxicity	Moura et al. (2016)
Essential oil (leaves): anti-spasmodic activity	Correia et al. (2015)
Diterpenes: antitumour and antispasmodic activity	Castello Branco et al. (2009); Santos et al. (2012); Pita et al. (2012 & 2014); Martins et al. (2013); Scotti et al. (2014); Dos Santos et al. (2016)
Xylopia laevigata (South America, Brazil)	
Essential oil (leaf): anti-*Candida* activity; synergistic activity of components	Dos Santos et al. (2016)
Alkaloids: cytotoxic activity, numerous alkaloids are present including anonaine	Menezes et al. (2016)
Essential oil (fresh fruit): limonene (56%), α-pinene (28%), β-pinene (5.5%); no cytotoxic activity	Costa et al. (2016)
Essential oil (leaves): significant anticancer potential; anti-inflammatory and analgesic; antitumor action linked to δ-cadinene, germacrene β, α-copaene, sesquiterpene, bicyclogermacrene, (E) caryophyllene	Quintans et al. (2013); Queiroz et al. (2014); Dos Santos et al. (2016); Pereira et al. (2021)
Essential oil (leaves): γ-muurolene (1-18%), δ-cadinene (1-13.5%), germacrene B (3-7%), α-copaene (3-7%), germacrene D (9-60.5%), bicyclogermacrene (7-15%), (E)-caryophyllene (5-8%)	Quintans et al. (2013)
Essential oil (leaves): antiparasitic, anti-trypanosoma activity	da Silva et al. (2013); Dos Santos et al. (2016)
Essential oil: mosquito larvicidal (only in high concentrations)	Nascimento et al. (2017)
Xylopia magna (Malaysia)	
Essential oil: germacrene D (36%), bicyclogermacrene (23%),	Shakri et al. (2020)

spathulenol (11%).	
Xylopia papuana (PNG)	
Leaf alkaloids: coclaurine, laurolitsine, roemerine, anonaine	Collins et al. (1990)
Leaf and bark: slight diuretic activity	
Bark alkaloids: coclaurine, reticuline, xylopine	
Bark alkaloids: moderate analgesic, marked antipyretic activity	
Anonaine hydrochloride: nervous system depression; broad-spectrum antimicrobial, but not antiprotozoal	
Xylopine: analgesic, anti-leishmania, sedative	Lucio et al. (2015)
Xylopia parviflora (Africa)	
Essential oil (fruit): anti-inflammatory, antioxidant, antimicrobial; good anticancer potential	Woguem et al. (2014); Dos Santos et al. (2016)
Extract (leaf): antiplasmodial activity	Bukar et al. (2014)
Essential oil: anticancer potential (β-pinene 33–36%; α-pinene 11%, (E)-β-ocimene 5–8%, myrtenol 5–6.5%, *trans*-pinocarveol 3–4%, sabinene 3%)	Bakarnga-Via et al. (2014)
Essential oil (insecticidal): active against cowpea seed bruchid	Babarinde et al. (2017)
Analgesic (bark extracts: used for stomach disorders)	Nishiyama et al. (2010)
Extract: anti-inflammatory for gastric disorders; antioxidant with potential for insulin regulation	Nwakiban et al. (2020a & 2020b)
Spice complex (with other herbs): oestrogenic activity	Tchoupang et al. (2016)
Xylopia sericea (Brazil)	
Essential oil (fruit): spathulenol (16%), guaiol (14%), germacrene D (8%); spice used for culinary purposes; antioxidant and antibacterial against *Staphylococcus aureus, Enterobacter cloacae, Bacillus cereus, Klebsiella pneumoniae.*	Mendes et al. (2017)
Extract (seeds): activity against *B. subtilis* and *S. aureus*	Dos Santos et al. (2016)
Extract (leaf): antimalarial potential; liriodenine (alkaloid) and annomontacine and derivatives (acetogenins), and various kaurenoic acids isolated; anonaine had significant antiplasmodial activity	Cavalcanti et al. (2010); Costa Gontijo et al. (2019); Gontijo et al. (2019a & 2019b)
Xylopia staudtii (Africa, Cameroon)	
Traditional medicine: spice added to soup for relief of abdominal cramping; bark used to treatment of bacillary dysentery	Pouofo Nguiam et al. (2021)
Extract (bark): significantly active against *Shigella flexneri* and *Escherichia coli*	Pouofo Nguiam et al. (2021)
Essential oil (leaf): dominated by the furanoguaiadienes (furanoguaia-1,4-diene 39%), furanoguaia-1,3-diene 7.5%), plus germacrene D (17.5%); overall, levels of the major components varied substantially: furanoguaia-1,4-diene (25–52%) and germacrene D (6–25%).	Yapi et al. (2015)
Xylopia vielana (China)	
Extract (leaf; guaiane dimers): anticancer, reversal of multidrug	Xie et a. (2018 & 2019);

resistance (enhance doxorubicin cytotoxicity); vieloplains identified (root guaiane dimers) one of which was cytotoxic; xylopin F shows anti-melanoma potential	Zhang et al. (2019b); Shams et al. (2021); Xu et al. (2021)
Extract (root): contains anti-inflammatory alkaloids and guaiane dimers some of which have substantial anti-inflammatory activity eg. xylopidimers	Guo et al. (2018 & 2019); Hassan et al. (2020); Chen et al. (2021)
Vielanin (guaiane dimer): enhance anticancer activity of doxorubicin in drug-resistant cancer cell lines	Gao et al. (2019)

Resources:

Abarikwu SO, Ogunlaja A, Otuechere CA, Gideon O. (2017). Effect of Ethanolic Extract from Seeds or Pods of *Xylopia aethiopica* (Dunal) A. Rich (Annonaceae) on the Testicular Function of Adult Male Rats. Indian Journa of Clinical Biochemistry. 32(4):420-428

Abrão F, Alves JA, Andrade G, de Oliveira PF, Ambrósio SR, Veneziani RCS, Tavares DC, Bastos JK, Martins CHG. (2018) Antibacterial Effect of *Copaifera duckei* Dwyer Oleoresin and Its Main Diterpenes against Oral Pathogens and Their Cytotoxic Effect. Frontiers in Microbiology. 9:201.

Adaramoye OA, Adedara IA, Popoola B, Farombi EO. (2010) Extract of *Xylopia aethiopica* (Annonaceae) protects against gamma-radiation induced testicular damage in Wistar rats. Journal of Basic Clinical Physiology & Pharmacology. 21(4):295-313.

Adaramoye OA, Erguen B, Nitzsche B, Höpfner M, Jung K, Rabien A. (2017). Antioxidant and antiproliferative potentials of methanol extract of *Xylopia aethiopica* (Dunal) A. Rich in PC-3 and LNCaP cells. Basic Clinical Physiology and Pharmacology. 28(4):403-412

Adaramoye OA, Okiti OO, Farombi EO. (2011b). Dried fruit extract from *Xylopia aethiopica* (Annonaceae) protects Wistar albino rats from adverse effects of whole body radiation. Experimental & Toxicologic Pathology. 63(7-8):635-43.

Adaramoye OA, Sarkar J, Singh N, Meena S, Changkija B, Yadav PP, Kanojiya S, Sinha S. (2011a). Antiproliferative action of *Xylopia aethiopica* fruit extract on human cervical cancer cells. Phytotherapy Research. 25(10):1558-63.

Adefegha SA, Oboh G. (2012) Inhibition of key enzymes linked to type 2 diabetes and sodium nitroprusside-induced lipid peroxidation in rat pancreas by water extractable phytochemicals from some tropical spices. Pharmaceutical Biology. 50(7):857-65.

Adegbola PI, Semire B, Fadahunsi OS, Adegoke AE. (2021) Molecular docking and ADMET studies of *Allium cepa*, *Azadirachta indica* and *Xylopia aethiopica* isolates as potential anti-viral drugs for Covid-19. Virusdisease. 32(1):1-13.

Adepiti AO, Iwalewa EO. (2016). Evaluation of the combination of *Uvaria chamae* (P. Beauv.) and amodiaquine in murine malaria. Journal of Ethnopharmacology. 193:30-35.

Afolabi S, Olorundare O, Ninomiya M, Babatunde A, Mukhtar H, Koketsu M. (2017) Comparative Antileukemic Activity of a Tetranorditerpene Isolated from *Polyalthia longifolia* Leaves and the Derivative against Human Leukemia HL-60 Cells. Journal of Oleo Science. 66(10):1169-1174.

Afolabi SO, Olorundare OE, Babatunde A, Albrecht RM, Koketsu M, Syed DN, Mukhtar H. (2019). *Polyalthia longifolia* Extract Triggers ER Stress in Prostate Cancer Cells Concomitant with Induction of Apoptosis: Insights from In Vitro and In Vivo Studies. Oxidative Medicine & Cellular Longevity. 2019:6726312.

Aguilar NO (2001). *Artabotrys* R.Br ex Ker Gawl In: van Valkenburg JLCH and Bunyapraphatsara N [eds]. Plant Resources of South-East Asia No.12/2: Medicinal and Poisonous Plants 2. Backhuys Publisher, Leiden, The Netherlands. pp.85-89 [see also <http//www.proseanet.org>]

Ahmed OAA, Azhar AS, Tarkhan MM, Balamash KS, El-Bassossy HM. (2020) Antiglycation Activities and Common Mechanisms Mediating Vasculoprotective Effect of Quercetin and Chrysin in Metabolic Syndrome. Evidence Based Complementary & Alternative Medicine. 2020:3439624.

Akabane S, Oue N, Sekino Y, Asai R, Thang PQ, Taniyama D, Sentani K, Yukawa M, Toda T, Kimura KI, Egi H, Shimizu W, Ohdan H, Yasui W. (2021) KIFC1 regulates ZWINT to promote tumor progression and spheroid formation in colorectal cancer. Pathology International. 71(7):441-452.

Alkahtane AA, Alghamdi HA, Almutairi B, Khan MM, Hasnain MS, Abdel-Daim MM, Alghamdi WM, Alkahtani S. (2021) Inhibition of human amylin aggregation by Flavonoid Chrysin: An in-silico and in-vitro approach. International Journal of Medical Sciences. 18(1):199-206.

Alolga RN, Chávez León MASC, Osei-Adjei G, Onoja V. (2019). GC-MS-based metabolomics, antibacterial and anti-inflammatory investigations to characterize the quality of essential oil obtained from dried *Xylopia aethiopica* fruits from Ghana and Nigeria. The Journal of Pharmacy & Pharmacology. 71(10):1544-1552

Alolga RN, Opoku-Damoah Y, Alagpulinsa DA, Huang FQ, Ma G, Chavez Leon MASC, Kudzai C, Yin X, Ding Y. (2021) Metabolomic and transcriptomic analyses of the anti-rheumatoid arthritis potential of xylopic acid in a bioinspired lipoprotein nanoformulation. Biomaterials. 268:120482.

Amadéo S, Nguyen NL, Teai T, Favro P, Mulet A, Colin-Fagotin N, Rereao M, Malogne A, Simone M, Rioche G, Gassion V, Pere P, Prokop A, Bernis F, Dufour P, Tuheiava A, Vanquin G, Vilhem S, Gokalsing E, Spodenkiewicz M, Pradem M, Seguin M, Beauchamp G, Thomas P, Vaiva G, Jehel L. (2020) Supportive effect of body contact care with ylang ylang aromatherapy and mobile intervention team for suicide prevention: A pilot study. The Journal of International Medical Research. 48(9):300060520946237.

Ameyaw EO, Asmah KB, Biney RP, Henneh IT, Owusu-Agyei P, Prah J, Forkuo AD. (2018) Isobolographic analysis of co-administration of two plant-derived antiplasmodial drug candidates, cryptolepine and xylopic acid, in *Plasmodium berghei*. Malaria Journal. 17(1):153

Ameyaw EO, Woode E, Boakye-Gyasi E, Abotsi WK, Kyekyeku JO, Adosraku RK. (2014). Anti-allodynic and anti-hyperalgesic effects of an ethanolic extract and xylopic acid from the fruits of *Xylopia aethiopica* in murine models of neuropathic pain. Pharmacognosy Research. 6(2):172-9.

Aminimoghadamfarouj A, Nematollahi A, Wiart C. (2011b). Anti-bacterial, antioxidant activity and phytochemical study of *Uvaria grandiflora*: a rare species of Annonaceae. Journal of Pharmacy Research, 4(4):954–955.

Aminimoghadamfarouj N, Nematollahi A, Wiart C. (2011a). Annonaceae: bio-resource for tomorrow's drug discovery. Journal of Asian Natural Products Research. 13(5):465-76

Anadozie SO, Adewale OB, Meyer M, Davids H, Roux S. (2021) In vitroanti-oxidant and cytotoxic activities of gold nanoparticles synthesized from an aqueous extract of the *Xylopia aethiopica* fruit. Nanotechnology. 32(31).

Anantachoke N, Lovacharaporn D, Reutrakul V, Michel S, Gaslonde T, Piyachaturawat P, Suksen K, Prabpai S, Nuntasaen N. (2020) Cytotoxic compounds from the leaves and stems of the endemic Thai plant *Mitrephora sirikitiae*. Pharmaceutical Biology. 58(1):490-497.

Andrade N, Andrade S, Silva C, Rodrigues I, Guardão L, Guimarães JT, Keating E, Martel F. (2019a). Chronic consumption of the dietary polyphenol chrysin attenuates metabolic disease in fructose-fed rats. European Journal of Nutrition. 59(1):151-165.

Andrade N, Marques C, Andrade S, Silva C, Rodrigues I, Guardão L, Guimarães JT, Keating E, Calhau C, Martel F. (2019b). Effect of chrysin on changes in intestinal environment and microbiome induced by fructose-feeding in rats. Food & Function. 10(8):4566-4576

Andriamadio JH, Rasoanaivo LH, Benedec D, Vlase L, Gheldiu AM, Duma M, Toiu A, Raharisololalao A, Oniga I. (2015). HPLC/MS analysis of polyphenols, antioxidant and antimicrobial activities of Artabotrys hildebrandtii O. Hffm. extracts. Natural Product Research. 29(23):2188-96

Angelopoulou E, Pyrgelis ES, Piperi C. (2020). Neuroprotective potential of chrysin in Parkinson's disease: Molecular mechanisms and clinical implications. Neurochemistry International. Vo.132:104612.

Ankisetty S, ElSohly HN, Li XC, Khan SI, Tekwani BL, Smillie T, Walker L. (2006). Aromatic constituents of *Uvaria grandiflora*. Journal of Natural Products. 69(4):692-4.

Anwar A, Ting ELS, Anwar A, Ain NU, Faizi S, Shah MR, Khan NA, Siddiqui R. (2020) Antiamoebic activity of plant-based natural products and their conjugated silver nanoparticles against *Acanthamoeba castellanii* (ATCC 50492). AMB Express. 10(1):24. doi:

Anyasi RO, Atagana HI. (2018) Profiling of plants at petroleum contaminated site for phytoremediation. International Journal of Phytoremediation. 20(4):352-361.

Anza M, Endale M, Cardona L, Cortes D, Eswaramoorthy R, Zueco J, Rico H, Trelis M, Abarca B. (2021) Antimicrobial Activity, in silico Molecular Docking, ADMET and DFT Analysis of Secondary Metabolites from Roots of Three Ethiopian Medicinal Plants. Advances & Applications in Bioinformatics & Chemistry. 14:117-132.

Asomugha RN, Udowelle NA, Offor SJ, Njoku CJ, Ofoma IV, Chukwuogor CC, Orisakwe OE. (2016) Heavy metals hazards from Nigerian spices. Roczniki Panstwowego Zaklandu Higieny. 67(3):309-14

Ataba E, Katawa G, Ritter M, Ameyapoh AH, Anani K, Amessoudji OM, Tchadié PE, Tchacondo T, Batawila K, Ameyapoh Y, Hoerauf A, Layland LE, Karou SD. (2020) Ethnobotanical survey, anthelmintic effects and cytotoxicity of plants used for treatment of helminthiasis in the Central and Kara regions of Togo. BMC Complementary Medicine & Therapies. 20(1):212.

Atchan Nwakiban AP , Sokeng AJ , Dell'Agli M , Bossi L , Beretta G , Gelmini F , Deutou Tchamgoue A , Agbor Agbor G , Kuiaté JR , Daglia M , Magni P . (2019) Hydroethanolic plant extracts from Cameroon positively modulate enzymes relevant to carbohydrate/lipid digestion and cardio-metabolic diseases. Food & Function. 10(10):6533-6542.

Auranwiwat C, Rattanajak R, Kamchonwongpaisan S, Laphookhieo S, Pyne SG, Limtharakul T. (2018) Four new C-benzyl flavonoids from the fruit of *Uvaria cherrevensis*. Fitoterapia. 130:198-202.

Auranwiwat C, Wongsomboon P, Thaima T, Rattanajak R, Kamchonwongpaisan S, Willis AC, Lie W, Pyne SG, Limtharakul Née Ritthiwigrom T. (2017). 2-Phenylnaphthalenes and a polyoxygenated cyclohexene from the stem and root extracts of *Uvaria cherrevensis* (Annonaceae). Fitoterapia. 120:103-107

Awale S, Tawila AM, Dibwe DF, Ueda JY, Sun S, Athikomkulchai S, Balachandran C, Saiki I, Matsumoto K, Esumi H. (2017) Highly oxygenated antiausterity agents from the leaves of *Uvaria dac*. Bioorganic & Medicinal Chemistry Letters. 27(9):1967-1971.

Babarinde GO, Adegoke GO. (2015) Effect of *Xylopia aethiopica* aqueous extract on antioxidant properties of refrigerated Roma tomato variety packaged in low density polyethylene bags. Journal of Food Science & Technology. 52(3):1790-5.

Babarinde SA, Pitan OO, Olatunde GO, Ajala MO. (2015). First report of toxicity of *Xylopia parviflora* (A. Rich.) Benth (Annonaceae) root bark's essential oil against cowpea seed bruchid, *Callososbruchus maculatus* Fabricius (Coleoptera: Chrysomelidae: Bruchinae). Natural Product Research. 29(4):349-52.

Babarinde SA, Pitan OOR, Ajala MO, Olatunde GO. (2017). Insectifugal and insecticidal potentials of two tropical botanical essential oils against cowpea seed bruchid. Environmental Science & Pollution Research International. 24(24):19785-19794.

Badgujar VB, Surana SJ. (2011). Comparative investigation on antimicrobial property of *Miliusa tomentosa* leaf oil and leaf extract. Iranian Journal of Pharmacology & Therapeutics. 10(1):7–10.

Bajaj S, Wakode SR, Khan W, Manchanda S, Kumar S. (2018). Simultaneous HPTLC analysis and in vitro antileishmanic activity of various secondary metabolites in extract of the traditional medicinal herb *Artabotrys hexapetalus* (L.f.). Ayu. 39(2):92-100.

Bajgai SP, Prachyawarakorn V, Mahidol C, Ruchirawat S, Kittakoop P. (2011). Hybrid flavan-chalcones, aromatase and lipoxygenase inhibitors, from *Desmos cochinchinensis*. Phytochemistry. 72(16):2062-7.

Bakarnga-Via I, Hzounda JB, Fokou PV, Tchokouaha LR, Gary-Bobo M, Gallud A, Garcia M, Walbadet L, Secka Y, Dongmo PM, Boyom FF, Menut C. (2014). Composition and cytotoxic activity of essential oils from *Xylopia aethiopica* (Dunal) A. Rich, *Xylopia parviflora* (A. Rich) Benth. and *Monodora myristica* (Gaertn) growing in Chad and Cameroon. BMC Complementary and Alternative Medicine 14:125.

Balam FH, Ahmadi ZS, Ghorbani A. (2020) Inhibitory effect of chrysin on estrogen biosynthesis by suppression of enzyme aromatase (CYP19): A systematic review. Heliyon. 6(3):e03557.

Balta C, Herman H, Boldura OM, Gasca I, Rosu M, Ardelean A, Hermenean A. (2015). Chrysin attenuates liver fibrosis and hepatic stellate cell activation through TGF-β/Smad signaling pathway. Chemico-Biological Interactions. 240:94-101

Banjerdpongchai R, Khawon P, Pompimon W. (2016). Phytochemicals from *Goniothalamus griffithii* Induce Human Cancer Cell Apoptosis. Asian Pacific Journal of Cancer Prevention. 17(7):3281-7

Banjerdpongchai R, Khaw-On P, Ristee C, Pompimon W. (2013) 6,8-dihydroxy-7-methoxy-1-methyl-azafluorenone induces caspase-8- and -9-mediated apoptosis in human cancer cells. Asian Pacific Journal of Cancer Prevention. 14(4):2637-41.

Bankole AE, Adekunle AA, Sowemimo AA, Umebese CE, Abiodun O, Gbotosho GO.(2016) Phytochemical screening and in vivo antimalarial activity of extracts from three medicinal plants used in malaria treatment in Nigeria. Parasitology Research. 115(1):299-305

Barcelos RC, Pelizzaro-Rocha KJ, Pastre JC, Dias MP, Ferreira-Halder CV, Pilli RA. (2014). A new goniothalamin N-acylated aza-derivative strongly downregulates mediators of signaling transduction associated with pancreatic cancer aggressiveness. European Journal of Medicinal Chemistry. 87:745-58.

Bardají DK, da Silva JJ, Bianchi TC, de Souza Eugênio D, de Oliveira PF, Leandro LF, Rogez HL, Venezianni RC, Ambrosio SR, Tavares DC, Bastos JK, Martins CH. (2016) *Copaifera reticulata* oleoresin: Chemical characterization and antibacterial properties against oral pathogens. Anaerobe. 40:18-27.

Barman M, Ghissing U, Dey PK, Agarwal A, Bera B, Kotamreddy JNR, Karmakar P, Mitra A. (2021) Specialized metabolites contributing to colour and scent volatiles in *Uvaria hamiltonii* flowers. Natural Product Research. 35(1):140-143.

Basu A, Das AS, Majumder M, Mukhopadhyay R. (2016). Antiatherogenic Roles of Dietary Flavonoids Chrysin, Quercetin, and Luteolin. Journal of Cardiovascular Pharmacology. 68(1):89-96.

Beg M, Shankar K, Varshney S, Rajan S, Singh SP, Jagdale P, Puri A, Chaudhari BP, Sashidhara KV, Gaikwad AN. (2015) A clerodane diterpene inhibit adipogenesis by cell cycle arrest and ameliorate obesity in C57BL/6 mice. Molecular & Cellular Endocrinology. 399:373-85.

Belhan S, Çomaklı S, Küçükler S, Gülyüz F, Yıldırım S, Yener Z. (2019). Effect of chrysin on methotrexate-induced testicular damage in rats. Andrologia. 51(1):e13145.

Bhattacharya AK, Chand HR, John J, Deshpande MV. (2015) Clerodane type diterpene as a novel antifungal agent from Polyalthia longifolia var. pendula. European Journal of Medicinal Chemistry. 94:1-7.

Bihud NV, Rasol NE, Imran S, Awang K, Ahmad FB, Mai CW, Leong CO, Cordell GA, Ismail NH. (2019) Goniolanceolatins A-H, Cytotoxic Bis-styryllactones from *Goniothalamus lanceolatus*. Journal of Natural Products. 82(9):2430-2442.

Bilcu M, Grumezescu AM, Oprea AE, Popescu RC, Mogoșanu GD, Hristu R, Stanciu GA, Mihailescu DF, Lazar V, Bezirtzoglou E, Chifiriuc MC. (2014) Efficiency of vanilla, patchouli and ylang ylang essential oils stabilized by iron oxide@C14 nanostructures against bacterial adherence and biofilms formed by *Staphylococcus aureus* and *Klebsiella pneumoniae* clinical strains. Molecules. 19(11):17943-56.

Biney RP, Benneh CK, Ameyaw EO, Boakye-Gyasi E, Woode E. (2016) *Xylopia aethiopica* fruit extract exhibits antidepressant-like effect via interaction with serotonergic neurotransmission in mice. Journal of Ethnopharmacology. 184:49-57.

Boampong JN, Ameyaw EO, Aboagye B, Asare K, Kyei S, Donfack JH, Woode E. (2013) The Curative and Prophylactic Effects of Xylopic Acid on *Plasmodium berghei* Infection in Mice. Journal of Parasitology Research. 2013:356107.

Boonmuen N, Thongon N, Chairoungdua A, Suksen K, Pompimon W, Tuchinda P, Reutrakul V, Piyachaturawat P. (2016). 5-Acetyl goniothalamin suppresses proliferation of breast cancer cells via Wnt/β-catenin signaling. European Journal of Pharmacology. 791:455-464.

Boonsombat J, Thongnest S, Kheawchaum S, Mahidol C, Ruchirawat S, Prawat H. (2020) Uvarmicranones A and B, two new benzoquinones and cytotoxic constituents from the stems of *Uvaria micrantha* (A. DC.) Hook. f. & Thomson. Natural Product Research. Sep 22:1-10.

Borges CH, Cruz MG, Carneiro LJ, da Silva JJ, Bastos JK, Tavares DC, de Oliveira PF, Rodrigues V, Veneziani RC, Parreira RL, Caramori GF, Nagurniak GR, Magalhães LG, Ambrósio SR. (2016) *Copaifera duckei* Oleoresin and Its Main Nonvolatile Terpenes: In Vitro Schistosomicidal Properties. Chemistry & Biodiversity. 13(10):1348-1356.

Bortolotto VC, Araujo SM, Pinheiro FC, Poetini MR, de Paula MT, Meichtry LB, de Almeida FP, Musachio EAS, Guerra GP, Prigol M. (2020) Modulation of glutamate levels and Na+,K+-ATPase activity contributes to the chrysin memory recovery in hypothyroidism mice. Physiology & Behaviour. 222:112892.

Braga CB, Kido LA, Lima EN, Lamas CA, Cagnon VHA, Ornelas C, Pilli RA. (2020) Enhancing the Anticancer Activity and Selectivity of Goniothalamin Using pH-Sensitive Acetalated Dextran (Ac-Dex) Nanoparticles: A Promising Platform for Delivery of Natural Compounds. ACS Biomaterials Science & Engineering. 6(5):2929-2942.

Bukar BB, Oguru MO, Dayom DW. (2014). Antiplasmodial Effect of a Crude Extract of the Leaves of *Xylopia Parviflora* (Benth) On *Plasmodium Yoelli* Infection in Mice Fed Supplemented Dietary Pellets. IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS) 9(1):11-17

Buncharoen W, Saenphet K, Saenphet S, Thitaram C. (2016). *Uvaria rufa* Blume attenuates benign prostatic hyperplasia via inhibiting 5α-reductase and enhancing antioxidant status. Journal of Ethnopharmacology. 194:483-94.

Castello Branco MV, Anazetti MC, Silva MS, Tavares JF, Diniz MF, Frungillo L, Haun M, Melo PS. (2009). Diterpenes from *Xylopia langsdorffiana* inhibit cell growth and induce differentiation in human leukemia cells. Zeitschrift für Naturforschung C. 64(9-10):650-6.

Cavalcanti BC, Ferreira JR, Moura DJ, Rosa RM, Furtado GV, Burbano RR, Silveira ER, Lima MA, Camara CA, Saffi J, Henriques JA, Rao VS, Costa-Lotufo LV, Moraes MO, Pessoa C. (2010) Structure-mutagenicity relationship of kaurenoic acid from *Xylopia sericeae* (Annonaceae). Mutation Research. 701(2):153-63.

Chan HH, Hwang TL, Thang TD, Leu YL, Kuo PC, Nguyet BT, Dai DN, Wu TS. (2013). Isolation and synthesis of melodamide A, a new anti-inflammatory phenolic amide from the leaves of *Melodorum fruticosum*. Planta Medica. 79(3-4):288-94.

Chan KM, Rajab NF, Siegel D, Din LB, Ross D, Inayat-Hussain SH. (2010). Goniothalamin induces coronary artery smooth muscle cells apoptosis: the p53-dependent caspase-2 activation pathway. Toxicological Sciences. 116(2):533-48.

Chang YH, Chiang YF, Chen HY, Huang YJ, Wang KL, Hong YH, Ali M, Shieh TM, Hsia SM. (2021) Anti-Inflammatory and Anti-Hyperuricemic Effects of Chrysin on a High Fructose Corn Syrup-Induced Hyperuricemia Rat Model via the Amelioration of Urate Transporters and Inhibition of NLRP3 Inflammasome Signaling Pathway. Antioxidants (Basel). 10(4):564.

Chassagne F, Deharo E, Punley H, Bourdy G. (2017) Treatment and management of liver diseases by Khmer traditional healers practicing in Phnom Penh area, Cambodia. Journal of Ethnopharmacology. 202:38-53.

Chen JT, Ma R, Sun SC, Zhu XF, Xu XL, Mu Q.m (2018). Synthesis and biological evaluation of cyclopeptide GG-8-6 and its analogues as anti-hepatocellular carcinoma agents. Bioorganic & Medicinal Chemistry. 26(3):609-622

Chen L, Yang P, Zhang M, Dai W. (2021) Two new sesquiterpenes from *Xylopia vielana*. Natural Product Research. Sep 29:1-6.

Chen XX, Liang G, Chai WM, Feng HL, Zhou HT, Shi Y, Chen QX. (2014) Antioxidant and antityrosinase proanthocyanidins from *Polyalthia longifolia* leaves. Journal of Bioscience & Bioengineering. 118(5):583-7.

Chen YC, Chia YC, Huang BM. (2021) Phytochemicals from *Polyalthia* Species: Potential and Implication on Anti-Oxidant, Anti-Inflammatory, Anti-Cancer, and Chemoprevention Activities. Molecules. 26(17):5369.

Chen YC, Huang BM, Lee WC, Chen YC. (2018) 16-Hydroxycleroda-3,13-dien-15,16-olide induces anoikis in human renal cell carcinoma cells: involvement of focal adhesion disassembly and signaling. Onco Targets & Therapy. 11:7679-7690.

Chen YC, Wang PY, Huang BM, Chen YJ, Lee WC, Chen YC. (2020) 16-Hydroxycleroda-3,13-dien-15,16-olide Induces Apoptosis in Human Bladder Cancer Cells through Cell Cycle Arrest, Mitochondria ROS Overproduction, and Inactivation of EGFR-Related Signalling Pathways. Molecules. 25(17):3958.

Cheng MF, Lin SR, Tseng FJ, Huang YC, Tsai MJ, Fu YS, Weng CF. (2017) The autophagic inhibition oral squamous cell carcinoma cancer growth of 16-hydroxy-cleroda-3,14-dine-15,16-olide. Oncotarget. 8(45):78379-78396.

Choi JK, Jang YH, Lee S, Lee SR, Choi YA, Jin M, Choi JH, Park JH, Park PH, Choi H, Kwon TK, Khang D, Kim SH. (2017). Chrysin attenuates atopic dermatitis by suppressing inflammation of keratinocytes. Food & Chemical Toxicology. 110:142-150

Choumessi AT, Danel M, Chassaing S, Truchet I, Penlap VB, Pieme AC, Asonganyi T, Ducommun B, Valette A. (2012) Characterization of the antiproliferative activity of *Xylopia aethiopica*. Cell Division. 7(1):8.

Christopher R, Mgani QA, Nyandoro SS, Rousseau AL, Isaacs M, Hoppe HC. (2020). A new indole alkaloid and other constituents from *Monodora minor* and Uvaria *tanzaniae*: their antitrypanosomal and antiplasmodial evaluation. Natural Product Research. Jan 5:1-8

Çiçek, S.S., Wenzel-Storjohann, A., Girreser, U. et al. Biological Activities of Two Major Copaiba Diterpenoids and Their Semi-synthetic Derivatives. Revista Brasiliera de Farmacognosia. 30, 18–27 (2020).

Ciceu A, Balta C, Herman H, Gharbia S, Ignat SR, Dinescu S, Váradi J, Fenyvesi F, Gyöngyösi S, Hermenean A, Costache M. (2021) Complexation with Random Methyl-β-Cyclodextrin and (2-Hidroxypropyl)-β-Cyclodextrin Enhances In Vivo Anti-Fibrotic and Anti-Inflammatory Effects of Chrysin via the Inhibition of NF-κB and TGF-β1/Smad Signaling Pathways and Modulation of Hepatic Pro/Anti-Fibrotic miRNA. International Journal of Molecular Sciences. 22(4):1869.

Collins DJ, Culvenor CCJ, Lamberton JA, Loder JW, Price JR. (1990). Plants for Medicines. A Chemical and Pharmacological Survey of Plants in the Australian Region. CSIRO, East Melbourne, Victoria, Australia.

Colman-Saizarbitoria T, Zambrano J, Ferrigni NR, Gu ZM, Ng JH, Smith DL, McLaughlin JL. (1994). Bioactive annonaceous acetogenins from the bark of *Xylopia aromatica*. Journal of Natural Products. 57(4):486-93.

Correia AC, Ferreira TF, Martins IR, Macêdo CL, Monteiro Fde S, Costa VC, Tavares JF, Silva MS, Paredes-Gamero EJ, Buri MV, Rigoni VL, Nouailhetas VL, Da Silva BA. (2015) Essential oil from the leaves of *Xylopia langsdorfiana* (Annonaceae) as a possible spasmolytic agent. Natural Product Research. 29(10):980-4.

Costa EV, da Silva TB, Costa CO, Soares MB, Bezerra DP. (2016) Chemical Composition of the Essential Oil from the Fresh Fruits of *Xylopia laevigata* and its Cytotoxic Evaluation. Naural Product Communications. 11(3):417-8.

Costa Gontijo D, Fernanda Alves do Nascimento M, Borgati TF, Speziali NL, Dias de Souza Filho J, Braga de Oliveira A. (2019) A Comprehensive View on (-)-7-Oxo-ent-kaur-16-en-19-oic Acid, the Major Constituent of *Xylopia sericea* Leaves Extract: Complete NMR Assignments, X-Ray Crystallographic Structure, in Vitro Antimalarial Activity and Cytotoxicity. Chemistry & Biodiversity. 16(7):e1900141.

da Silva TB, Menezes LR, Sampaio MF, Meira CS, Guimarães ET, Soares MB, Prata AP, Nogueira PC, Costa EV. (2013). Chemical composition and anti-*Trypanosoma cruzi* activity of essential oils obtained from leaves of *Xylopia frutescens* and *X. laevigata* (Annonaceae). Natural Product Communications. 8(3):403-6.

da Trindade R, da Silva JK, Setzer WN. (2018) *Copaifera* of the Neotropics: A Review of the Phytochemistry and Pharmacology. International Journal of Molecular Sciences. 19(5):1511

Dai DN, Hoi TM, Thang TD, Ogunwande IA. (2012) The leaf essential oils of five Vietnamese *Desmos* species (Annonaceae). Natural Product Communications. 7(2):231-4.

de Fatima A, Marquissolo C, de Albuquerque S, Carraro-Abrahão AA, Pilli RA. (2006). Trypanocidal activity of 5,6-dihydropyran-2-ones against free trypomastigotes forms of *Trypanosoma cruzi*. European Journal of Medicinal Chemistry. 41(10):1210-3.

de Mesquita ML, Grellier P, Mambu L, de Paula JE, Espindola LS. (2007). In vitro antiplasmodial activity of Brazilian Cerrado plants used as traditional remedies. Journal of Ethnopharmacology. 110(1):165-70

Del Fabbro L, de Gomes MG, Souza LC, Goes AR, Boeira SP, Oliveira MS, Furian AF, Jesse CR. (2019a). Chrysin suppress immune responses and protects from experimental autoimmune encephalomyelitis in mice. Journal of Neuroimmunology. 335:577007.

Del Fabbro L, Rossito Goes A, Jesse CR, de Gomes MG, Cattelan Souza L, Lobo Ladd FV, Lobo Ladd AAB, Nunes Arantes RV, Reis Simionato A, Oliveira MS, Furian AF, Boeira SP. (2019b). Chrysin protects against behavioral, cognitive and neurochemical alterations in a 6-hydroxydopamine model of Parkinson's disease. Neuroscience Letters. 706:158-163.

Dong F, Zhang J, Zhu S, Lan T, Yang J, Li L. (2019). Chrysin Alleviates Chronic Hypoxia-Induced Pulmonary Hypertension by Reducing Intracellular Calcium Concentration in Pulmonary Arterial Smooth Muscle Cells. Journal of Cardiovascular Pharmacology. 74(5):426-435

Dos Santos WB, Da Silva JC, Araujo MGS, da Silva ALL, Vasconcelos TLC, dos Santos KMC, de Assis Bastos ML,, Veríssimo RCSS, Bernardo THN. (2016) Biological potential of plant species *Xylopia frutescens*: An integrative review. Journal of Chemical and Pharmaceutical Research. 8(7):794-800

Doshi GM, Zine SP, Chaskar PK, Une HD. (2014) Solicitation of HPLC and HPTLC Techniques for Determination of Rutin from *Polyalthia longifolia* Thwaites. Pharmacognosy Research. 6(3):234-9.

Duan XY, Guo KY, Lv DJ, Mei RQ, Zhang MD. (2020) Terpenes isolated from *Polyalthia simiarum* and their cytotoxic activities. Fitoterapia. 147:104734.

Ebiloma GU, Katsoulis E, Igoli JO, Gray AI, De Koning HP. (2018). Multi-target mode of action of a Clerodane-type diterpenoid from *Polyalthia longifolia* targeting African trypanosomes. Scientific Reports. 8(1):4613

Edmond MP, Mostafa NM, El-Shazly M, Singab ANB. (2020) Two clerodane diterpenes isolated from *Polyalthia longifolia* leaves: comparative structural features, anti-histaminic and anti-*Helicobacter pylori* activities. Natural Product Research. May 4:1-5.

Ehigiator BE, Adikwu E. (2020) Toxicity study of ethanolic stem bark extract of *Xylopia aethiopica* on fertility indices of male rats: An experimental study. International Journal of Reproductive Biomedicine. 18(4):265-274.

Ekeanyanwu RC, Nkwocha CC, Ekeanyanwu CL. (2021) Behavioural and biochemical indications of the antidepressant activities of essential oils from *Monodora myristica* (Gaertn) seed and *Xylopia aethiopica* (Dunal) fruit in rats. IBRO Neuroscience Reports. 10:66-74.

Ekuadzi E, Biney RP, Benneh CK, Osei Amankwaa B, Jato J. (2018). Antiinflammatory properties of betulinic acid and xylopic acid in the carrageenan-induced pleurisy model of lung inflammation in mice. Phytotherapy Research. 32(3):480-487.

Elmhalli F, Pålsson K, Örberg J, Grandi G. (2018). Acaricidal properties of ylang-ylang oil and star anise oil against nymphs of *Ixodes ricinus* (Acari: Ixodidae). Experimental & Applied Acarology. 76(2):209-220.

Elnaas AR, Grice D, Han J, Feng Y, Capua AD, Mak T, Laureanti JA, Buchko GW, Myler PJ, Cook G, Quinn RJ, Liu M. (2020) Discovery of a Natural Product That Binds to the *Mycobacterium tuberculosis* Protein Rv1466 Using Native Mass Spectrometry. Molecules. 25(10):2384.

Emordi JE, Agbaje EO, Oreagba IA, Iribhogbe OI. (2016). Antidiabetic and hypolipidemic activities of hydroethanolic root extract of *Uvaria chamae* in streptozotocin induced diabetic albino rats. BMC Complementary & Alternative Medicine. 16(1):468.

Emordi JE, Agbaje EO, Oreagba IA, Iribhogbe OI. (2018). Antidiabetic Effects of the Ethanolic Root Extract of *Uvaria chamae* P. Beauv (Annonaceae) in Alloxan-Induced Diabetic Rats: A Potential Alternative Treatment for Diabetes Mellitus. Advances in Pharmacological Sciences. 2018:1314941

Engels NS, Waltenberger B, Michalak B, Huynh L, Tran H, Kiss AK, Stuppner H. (2018). Inhibition of Pro-Inflammatory Functions of Human Neutrophils by Constituents of *Melodorum fruticosum* Leaves. Chemistry & Biodiversity. 15(11):e1800269

Engels NS, Waltenberger B, Schwaiger S, Huynh L, Tran H, Stuppner H. (2019) Melodamide A from *Melodorum fruticosum* - Quantification using HPLC and one-step-isolation by centrifugal partition chromatography. Journal of Separation Science. 42(20):3165–72.

Euanorasetr J, Junhom M, Tantimavanich S, Vorasin O, Munyoo B, Tuchinda P, Panbangred W. (2016) Halogenated benzoate derivatives of altholactone with improved anti-fungal activity. Journal of Asian Natural Product Research. 18(5):462-74.

Fagundes FL, de Morais Piffer G, Périco LL, Rodrigues VP, Hiruma-Lima CA, Dos Santos RC. (2020). Chrysin Modulates Genes Related to Inflammation, Tissue Remodeling, and Cell Proliferation in the Gastric Ulcer Healing. International Journal of Molecular Sciences. 21(3). pii: E760

Faizi S, Khan RA, Mughal NR, Malik MS, Sajjadi KE, Ahmad A. (2008) Antimicrobial activity of various parts of *Polyalthia longifolia* var. *pendula*: isolation of active principles from the leaves and the berries. Phytotherapy Research. 22(7):907-12.

Farkhondeh T, Jalali S, Samarghandian S, Samini F. (2020). The effects of chrysin on serum corticosterone levels and brain oxidative injury induced by immobilization in rat. Cardiovascular & Hematological Disordors Drug Targets. 20(1):47-53.

Farkhondeh T, Samarghandian S, Bafandeh F. (2019). The cardiovascular protective effects of chrysin: A narrative review on experimental researches. Cardiovascular & Hematological Agents in Medicinal Chemistry. 17(1):17-27.

Fenyvesi F, Nguyen TLP, Haimhoffer Á, Rusznyák Á, Vasvári G, Bácskay I, Vecsernyés M, Ignat SR, Dinescu S, Costache M, Ciceu A, Hermenean A, Váradi J. (2020) Cyclodextrin Complexation Improves the Solubility and Caco-2 Permeability of Chrysin. Materials (Basel). 13(16):3618.

Ferraz RP, Cardoso GM, da Silva TB, Fontes JE, Prata AP, Carvalho AA, Moraes MO, Pessoa C, Costa EV, Bezerra DP. (2013). Antitumour properties of the leaf essential oil of *Xylopia frutescens* Aubl. (Annonaceae). Food Chemistry. 141(1):196-200.

Filho CB, Jesse CR, Donato F, Del Fabbro L, de Gomes MG, Goes AT, Souza LC, Giacomeli R, Antunes M, Luchese C, Roman SS, Boeira SP. (2016). Neurochemical factors associated with the antidepressant-like effect of flavonoid chrysin in chronically stressed mice. European Journal of Pharmacology. 791:284-296.

Fleischer TC, Mensah ML, Mensah AY, Komlaga G, Gbedema SY, Skaltsa H.(2008). Antimicrobial activity of essential oils of *Xylopia aethiopica*. African Journal of Traditional, Complementary and Alternative Medicine. 5(4):391–393

Fomogne-Fodjo MC, Van Vuuren S, Ndinteh DT, Krause RW, Olivier DK. (2014). Antibacterial activities of plants from Central Africa used traditionally by the Bakola pygmies for treating respiratory and tuberculosis-related symptoms. Journal of Ethnopharmacology. 155(1):123-31

Fournier G, Mensah MLK, Mensah AY, Komlaga G, Gbedema SY, Skaltsa H. (1994). Chemical and biological studies of *Xylopia aromatica* stem bark and leaf oils. Planta Medica. 60(3):283-4.

Funakoshi-Tago M, Ohsawa K, Ishikawa T, Nakamura F, Ueda F, Narukawa Y, Kiuchi F, Tamura H, Tago K, Kasahara T. (2016). Inhibitory effects of flavonoids extracted from Nepalese propolis on the LPS signaling pathway. International Immunopharmacology. 40:550-560.

Gabriel A, Mohammed M, Magaji MG, Ofemile YP, Matthew AP, Akefe IO. (2020) In Vitro and In Vivo Neutralizing Activity of *Uvaria chamae* Leaves Fractions on the Venom of *Naja nigricollis* in Albino Rat and Bovine Blood. Recent Patents on Biotechnology. 14(4):295-311.

Gao HL, Xia YZ, Zhang YL, Yang L, Kong LY. (2019) Vielanin P enhances the cytotoxicity of doxorubicin via the inhibition of PI3K/Nrf2-stimulated MRP1 expression in MCF-7 and K562 DOX-resistant cell lines. Phytomedicine. 58:152885.

Gao S, Siddiqui N, Etim I, Du T, Zhang Y, Liang D. (2021) Developing nutritional component chrysin as a therapeutic agent: Bioavailability and pharmacokinetics consideration, and ADME mechanisms. Biomedicine & Pharmacotherapy. 142:112080.

Garavito G, Rincón J, Arteaga L, Hata Y, Bourdy G, Gimenez A, Pinzón R, Deharo E. (2006). Antimalarial activity of some Colombian medicinal plants. Journal of Ethnopharmacology 107(3):460-2.

Gaydou EM, Randriamiharisoa R, Je an Pierre B (1986). Composition of the volatiles of Ylang Ylang *Cananga odorata* Hook Fil. et Thomson forma genuina) from Madagascar. Journal of Agricultural & Food Chemistry. 34:481-487

Gbedema SY, Bayor MT, Annan K, Wright CW. (2015). Clerodane diterpenes from *Polyalthia longifolia* (Sonn) Thw. var. *pendula*: Potential antimalarial agents for drug resistant *Plasmodium falciparum* infection. Journal of Ethnopharmacology. 169:176-82.

Ghamkhari A, Pouyafar A, Salehi R, Rahbarghazi R. (2019). Chrysin and Docetaxel Loaded Biodegradable Micelle for Combination Chemotherapy of Cancer Stem Cell. Pharmaceutical Research. 36(12):165.

Godam ET, Olaniyan OT, Wofuru CD, Orupabo CD, Ordu KS, Gbaranor BK, Dakoru PD. (2021) *Xylopia aethiopica* ethanol seed extract suppresses Cadmium chloride-induced ovary and gonadotropins toxicity in adult female Wistar rats. JBRA Assisted Reproduction. 25(2):252-256.

Goes ATR, Jesse CR, Antunes MS, Lobo Ladd FV, Lobo Ladd AAB, Luchese C, Paroul N, Boeira SP. (2018). Protective role of chrysin on 6-hydroxydopamine-induced neurodegeneration a mouse model of Parkinson's disease: Involvement of neuroinflammation and neurotrophins. Chemico-Biological Interactions. 279:111-120.

Gomes INF, Silva AG, Frazao Lima GF, Longatti TR, Do Carmo LF, Villar JAFP, Araujo AADC, Tome RG, Santos HBD, Azambuja Ribeiro RIM. (2021) Alkaloid and phenolic compounds of *Xylopia aromatica* inhibits tumor growth by down-regulating matrix metalloproteinase-2 (MMP-2) expression. Pakistan Journal of Pharmaceutical Sciences. 34(2):599-606.

Gontijo DC, Brandão GC, Nascimento MFAD, Oliveira AB. (2019) Antiplasmodial activity and cytotoxicity, isolation of active alkaloids, and dereplication of *Xylopia sericea* leaves ethanol extract by UPLC-DAD-ESI-MS/MS. The Journal of Pharmacy & Pharmacology. 71(2):260-269.

Gontijo DC, Nascimento MFAD, Brandão GC, Oliveira AB. (2019). Phytochemistry and antiplasmodial activity of *Xylopia sericea* leaves. Natural Product Research. Feb 27:1-5.

Goudarshivananavar BC, Vigneshwaran V, Somegowda M, Dharmappa KK, Pramod SN. (2015) Therapeutic potential of *Polyalthia cerasoides* stem bark extracts against oxidative stress and nociception. Ancient Science of Life. 35(2):70-8.

Guo B, Zheng C, Cai W, Cheng J, Wang H, Li H, Sun Y, Cui W, Wang Y, Han Y, Lee SM, Zhang Z. (2016). Multifunction of Chrysin in Parkinson's Model: Anti-Neuronal Apoptosis, Neuroprotection via Activation of MEF2D, and Inhibition of Monoamine Oxidase-B. Journal of Agricultural and Food Chemistry. 64(26):5324-33.

Guo YG, Ding YH, Wu GJ, Zhu SL, Sun YF, Yan SK, Qian F, Jin HZ, Zhang WD. (2018). Three new alkaloids from *Xylopia vielana* and their antiinflammatory activities. Fitoterapia. 127:96-100

Guo YG, Xie YG, Wu GJ, Cheng TF, Zhu SL, Yan SK, Jin HZ, Zhang WD. (2019) Xylopidimers A-E, Five New Guaiane Dimers with Various Carbon Skeletons from the Roots of *Xylopia vielana*. ACS Omega. 4(1):2047-2052.

Gupta VK, Tiwari N, Gupta P, Verma S, Pal A, Srivastava SK, Darokar MP. (2016) A clerodane diterpene from *Polyalthia longifolia* as a modifying agent of the resistance of methicillin resistant *Staphylococcus aureus.* Phytomedicine. 23(6):654-61.

Gupta VK, Verma S, Pal A, Srivastava SK, Srivastava PK, Darokar MP. (2013) In vivo efficacy and synergistic interaction of 16α-hydroxycleroda-3, 13 (14) Z-dien-15, 16-olide, a clerodane diterpene from *Polyalthia longifolia* against methicillin-resistant *Staphylococcus aureus*. Applied Microbiology & Biotechnology. 97(20):9121-31.

Han X, Beaumont C, Stevens N. (2017) Chemical composition analysis and in vitro biological activities of ten essential oils in human skin cells. Biochimie Open. 5:1-7.

Hassan SSU, Zhang WD, Jin HZ, Basha SH, Priya SVSS. (2020) In-silico anti-inflammatory potential of guaiane dimers from *Xylopia vielana* targeting COX-2. Journal of Biomolecular Structure & Dynamics. Sep 2:1-15.

Hawariah LPA, Munawar M, Din LB. (1994). Antifertility effect of goniothalamin: a styrylpyrone isolated from *Goniothalamus tapis* Miq. Asia Pacific Journal of Pharmacology 9(4):273-77

He J, Dou M, Xie J, Hou S, Liu Q, Hu Z, Zhang B, Zheng S, Yin F, Zhang M, Xie C, Lu D, Ding X, Zhu C, Sun R. (2021) Discovery of zeylenone from *Uvaria grandiflora* as a potential botanical fungicide. Pest Management Science. Jul 27.

Hisham A, Rameshkumar KB, Sherwani N, Al-Saidi S, Al-Kindy S. (2012). The composition and antimicrobial activities of *Cyperus conglomeratus*, *Desmos chinensis* var. *lawii* and *Cyathocalyx zeylanicus* essential oils. Natural Product Communications. 7(5):663-6.

Hong JS, Feng JH, Park JS, Lee HJ, Lee JY, Lim SS, Suh HW. (2020) Antinociceptive effect of chrysin in diabetic neuropathy and formalin-induced pain models. Animal Cells & Systems (Seoul). 24(3):143-150.

Hongnak S, Jongaramruong J, Khumkratok S, Siriphong P, Tip-pyang S. (2015). Chemical constituents and derivatization of melodorinol from the roots of *Melodorum fruticosum*. Natural Product Communications. 10(4):633-6.

Hsu YM, Wu TY, Du YC, El-Shazly M, Beerhues L, Thang TD, Van Luu H, Hwang TL, Chang FR, Wu YC. (2016). 3-Methyl-4,5-dihydro-oxepine, polyoxygenated seco-cyclohexenes and cyclohexenes from *Uvaria flexuosa* and their anti-inflammatory activity. Phytochemistry. 122:184-192

Huang D, Qing S, Zeng G, Wang Y, Guo H, Tan J, Zhou Y. (2013) Lipophilic components from Fructus Viticis Negundo and their anti-tumor activities. Fitoterapia. 86:144-8.

Huang PK, Lin SR, Riyaphan J, Fu YS, Weng CF. (2019). *Polyalthia* Clerodane Diterpene Potentiates Hypoglycemia via Inhibition of Dipeptidyl Peptidase 4. International Journal of Molecular Sciences. 20(3). pii: E530.

Huang PK, Lin SX, Tsai MJ, Leong MK, Lin SR, Kankala RK, Lee CH, Weng CF. (2017) Encapsulation of 16-Hydroxycleroda-3,13-Dine-16,15-Olide in Mesoporous Silica Nanoparticles as a Natural Dipeptidyl Peptidase-4 Inhibitor Potentiated Hypoglycemia in Diabetic Mice. Nanomaterials (Basel). 7(5):112.

Hung NH, Dai DN, Giang TTB, Thang TD, Ogunwande IA. (2014). Chemical Composition of Essential Oils of *Artabotrys petelotii* Merr., *Artabotrys intermedius* Hassk., and *Artabotrys harmandii* Finet & Gagnep. (Annonaceae) from Vietnam. Journal of Essential Oil Bearing Plants 17(6): 1105-1111

Huong DT, Luong DV, Thao TT, Sung TV. (2005). A new flavone and cytotoxic activity of flavonoid constituents isolated from *Miliusa balansae* (Annonaceae). Pharmazie. 60(8):627-9.

Ignat SR, Dinescu S, Váradi J, Fenyvesi F, Nguyen TLP, Ciceu A, Hermenean A, Costache M. (2020) Complexation with Random Methyl-β-Cyclodextrin and (2-Hydroxypropyl)-β-Cyclodextrin Promotes Chrysin Effect and Potential for Liver Fibrosis Therapy. Materials (Basel). 13(21):5003.

Indrasetiawan P, Aoki-Utsubo C, Hanafi M, Hartati S, Wahyuni TS, Kameoka M, Yano Y, Hotta H, Hayashi Y. (2019). Antiviral Activity of *Cananga odorata* Against Hepatitis B Virus. The Kobe Journal of Medical Sciences. 65(2):E71-E79.

Jaidee W, Andersen RJ, Chavez MAG, Wang YA, Patrick BO, Pyne SG, Muanprasat C, Borwornpinyo S, Laphookhieo S. (2019a). Amides and Flavonoids from the Fruit and Leaf Extracts of *Melodorum siamensis.* Journal of Natural Products. 82(2):283-292.

Jaidee W, Andersen RJ, Patrick BO, Pyne SG, Muanprasat C, Borwornpinyo S, Laphookhieo S. (2019b) Alkaloids and styryllactones from *Goniothalamus cheliensis*. Phytochemistry. 157:8-20.

Jaidee W, Maneerat W, Andersen RJ, Patrick BO, Pyne SG, Laphookhieo S. (2018). Antioxidant neolignans from the twigs and leaves of *Mitrephora wangii* HU. Fitoterapia. 130:219-224.

Jaipetch T, Hongthong S, Kuhakarn C, Pailee P, Piyachaturawat P, Suksen K, Kongsaeree P, Prabpai S, Nuntasaen N, Reutrakul V. (2019) Cytotoxic polyoxygenated cyclohexene derivatives from the aerial parts of *Uvaria cherrevensis*. Fitoterapia. 137:104182.

Jalil J, Attiq A, Hui CC, Yao LJ, Zakaria NA. (2020) Modulation of inflammatory pathways, medicinal uses and toxicities of *Uvaria* species: potential role in the prevention and treatment of inflammation. Inflammopharmacology. 28(5):1195-1218.

Jantapan K, Poapolathep A, Imsilp K, Poapolathep S, Tanhan P, Kumagai S, Jermnak U. (2017) Inhibitory Effects of Thai Essential Oils on Potentially Aflatoxigenic *Aspergillus parasiticus* and *Aspergillus flavus*. Biocontrol Science. 22(1):31-40.

Jiang C, Masood M, Rasul A, Wei W, Wang Y, Ali M, Mustaqeem M, Li J, Li X. (2017). Altholactone Inhibits NF-κB and STAT3 Activation and Induces Reactive Oxygen Species-Mediated Apoptosis in Prostate Cancer DU145 Cells. Molecules. 22(2). pii: E240.

Jothy SL, Saito T, Kanwar JR, Chen Y, Aziz A, Yin-Hui L, Sasidharan S. (2016) Radioprotective activity of *Polyalthia longifolia* standardized extract against X-ray radiation injury in mice. Physica Medica. 32(1):150-61.

Kaharudin FA, Zohdi RM, Mukhtar SM, Sidek HM, Bihud NV, Rasol NE, Ahmad FB, Ismail NH. (2020) In vitro antiplasmodial and cytotoxicity activities of crude extracts and major compounds from *Goniothalamus lanceolatus.* Journal of Ethnopharmacology. 254:112657.

Kamperdick C, Hong Van N, Van Sung T. (2002). Constituents from *Miliusa balansae* (Annonaceae). Phytochemistry. 61(8):991-4.

Kang MK, Park SH, Choi YJ, Shin D, Kang YH. (2015). Chrysin inhibits diabetic renal tubulointerstitial fibrosis through blocking epithelial to mesenchymal transition. Journal of Molecular Medicine (Berl). 93(7):759-72.

Kasala ER, Bodduluru LN, Barua CC, Madhana RM, Dahiya V, Budhani MK, Mallugari RR, Maramreddy SR, Gogoi R. (2016a). Chemopreventive effect of chrysin, a dietary flavone against benzo(a)pyrene induced lung carcinogenesis in Swiss albino mice. Pharmacology Reports. 68(2):310-8

Kasala ER, Bodduluru LN, Barua CC. (2016b). Chrysin and its emerging antineoplastic effects. Cancer Gene Therapy. 23(1):43

Kasala ER, Bodduluru LN, Madana RM, V AK, Gogoi R, Barua CC. (2015). Chemopreventive and therapeutic potential of chrysin in cancer: mechanistic perspectives. Toxicology Letters. 233(2):214-25

Kayo MT, Simo MK, Tagatsing Fotsing M, Talla E, Laurent S, Elst LV, Henoumont C, Yankep E, Alfred Ngenge T, Keumoe R, Atchade AT, Zeukóo EM, Sameza ML, Roch A, Muller R, Boyom FF, Mbafor JT. (2020)

Antifungal potential of extracts, fractions and compounds from *Uvaria comperei* (Annonaceae) and Oxyanthus unilocularis (Rubiaceae). Natural Product Research. Nov 27:1-5.

Khamis S, Bibby MC, Brown JE, Cooper PA, Scowen I, Wright CW. (2004). Phytochemistry and preliminary biological evaluation of *Cyathostemma argenteum*, a Malaysian plant used traditionally for the treatment of breast cancer. Phytotherapy Research. 18(7):507-10.

Khan AK, Ahmed A, Hussain M, Khan IA, Ali SA, Farooq AD, Faizi S. (2017) Antibiofilm potential of 16-oxo-cleroda-3, 13(14) E-diene-15 oic acid and its five new γ-amino γ-lactone derivatives against methicillin resistant *Staphylococcus aureus* and *Streptococcus mutans*. European Journal of Medicinal Chemistry. 138:480-490.

Khombi Shooshtari M, Farbood Y, Mansouri SMT, Badavi M, Khorsandi LS, Ghasemi Dehcheshmeh M, Sarkaki AR. (2021) Neuroprotective Effects of Chrysin Mediated by Estrogenic Receptors Following Cerebral Ischemia and Reperfusion in Male Rats. Basic & Clinical Neuroscience.12(1):149-162.

Kim KM, Jung J. (2020) Upregulation of G Protein-Coupled Estrogen Receptor by Chrysin-Nanoparticles Inhibits Tumor Proliferation and Metastasis in Triple Negative Breast Cancer Xenograft Model. Frontiers in Endocrinology (Lausanne). 11:560605.

Kim SM, Imm JY. (2020) The Effect of Chrysin-Loaded Phytosomes on Insulin Resistance and Blood Sugar Control in Type 2 Diabetic db/db Mice. Molecules. 25(23):5503.

Kim SR, Jeong MS, Mun SH, Cho J, Seo MD, Kim H, Lee J, Song JH, Ko HJ. (2021) Antiviral Activity of Chrysin against Influenza Virus Replication via Inhibition of Autophagy. Viruses. 13(7):1350.

Kirubakari B, Chen Y, Sasidharan S. (2020). Synergistic Effect of *Polyalthia longifolia* leaf and Antibiotics against Clinical Isolates of Methicillin-Resistant *Staphylococcus aureus* (MRSA) by Microscopic Technique. Antiinflammatory & Antiallergy Agents in Medicinal Chemistry. 19(3):323-334.

Kodar MS, Karou SD, Katawa G, Anani K, Gbekley HE, Adjrah Y, Tchacondo T, Batawila K, Simpore J. (2016) An ethnobotanical study of plants used to treat liver diseases in the Maritime region of Togo. Journal of Ethnopharmacology. 181:263-73.

Komath S, Garg A, Wahajuddin M. (2018). Development and evaluation of Chrysin-Phospholipid complex loaded solid lipid nanoparticles - storage stability and in vitro anti-cancer activity. Journal of Microencapsulation. 35(6):600-617.

Kouam SF, Ngouonpe AW, Lamshöft M, Talontsi FM, Bauer JO, Strohmann C, Ngadjui BT, Laatsch H, Spiteller M. (2014) Indolosesquiterpene alkaloids from the Cameroonian medicinal plant *Polyalthia oliveri* (Annonaceae). Phytochemistry. 105:52-9.

Koudokpon H, Armstrong N, Dougnon TV, Fah L, Hounsa E, Bankolé HS, Loko F, Chabrière E, Rolain JM. (2018). Antibacterial Activity of Chalcone and Dihydrochalcone Compounds from *Uvaria chamae* Roots against Multidrug-Resistant Bacteria. Biomed Research International. 2018:1453173

Kouinki H, Haubruge E, Noudjou FE, Lognay G, Malaisse F, Ngassoum MB, Goudoum A, Mapongmetsem PM, Ngamo LS, Hance T. (2005). Potential use of essential oils from Cameroon applied as fumigant or contact insecticides against *Sitophilus zeamais* Motsch (Coeloptera; Curculionidae). Communications in Agricultural and Applied Biological Sciences. 70(4):787-92

Krishnamoorthy A, Sevanan M, Mani S, Balu M, Balaji S, P R. (2019). Chrysin restores MPTP induced neuroinflammation, oxidative stress and neurotrophic factors in an acute Parkinson's disease mouse model. Neuroscience Letters. 709:134382

Kuete V, Sandjo LP, Mbaveng AT, Zeino M, Efferth T. (2015) Cytotoxicity of compounds from *Xylopia aethiopica* towards multi-factorial drug-resistant cancer cells. Phytomedicine. 22(14):1247-54.

Kuete V, Sandjo LP, Wiench B, Efferth T. (2013). Cytotoxicity and modes of action of four Cameroonian dietary spices ethno-medically used to treat cancers: *Echinops giganteus, Xylopia aethiopica, Imperata cylindrica* and *Piper capense.* Journal of Ethnopharmacology. 149(1):245-53

Kurisawa N, Yukawa M, Koshino H, Onodera T, Toda T, Kimura KI. (2020) Kolavenic acid analog restores growth in HSET-overproducing fission yeast cells and multipolar mitosis in MDA-MB-231 human cells. Bioorganic & Medicinal Chemistry. 28(1):115154.

Kwan TK, Shipton F, Azman NS, Hossan S, Jin KT, Wiart C. (2016). Cytotoxic Aporphines from *Artabotrys crassifolius*. Natural Product Communications. 11(3):389-92.

Kwansa-Bentum B, Agyeman K, Larbi-Akor J, Anyigba C, Appiah-Opong R. (2019). In Vitro Assessment of Antiplasmodial Activity and Cytotoxicity of *Polyalthia longifolia* Leaf Extracts on *Plasmodium falciparum* Strain NF54. Malaria Research & Treatment. 2019:6976298.

Lajide L, Escoubas P, Mizutani J. (1995). Termite antifeedant activity in *Xylopia aethiopica*. Phytochemistry. 40(4):1105-1112

Lee JJ, Jin CM, Kim YK, Ryu SY, Lim SC, Lee MK. (2008). Effects of anonaine on dopamine biosynthesis and L-DOPA-induced cytotoxicity in PC2 cells. Molecules. 13:475-87

Lee K, Lee JH, Kim SI, Cho MH, Lee J. (2014) Anti-biofilm, anti-hemolysis, and anti-virulence activities of black pepper, cananga, myrrh oils, and nerolidol against *Staphylococcus aureus*. Applied Microbiology & Biotechnology. 98(22):9447-57.

Lee S, Lee SK, Jung J. (2021) Potentiating activities of chrysin in the therapeutic efficacy of 5-fluorouracil in gastric cancer cells. Oncology Letters. 21(1):24.

Leelapornpisid P, Wickett RR, Chansakaow S, Wongwattananukul N. (2015) Potential of native Thai aromatic plant extracts in antiwrinkle body creams. Journal of Cosmetic Science. 66(4):219-31.

Legba B, Dougnon V, Chabi Y, Gbaguidi C, Aniambossou A, Deguenon E, Dougnon J, Kpodekon M, Baba-Moussa L. (2020) Evaluation of in-vivo anti-*Salmonella* activity of *Uvaria chamae, Lantana camara* and *Phyllantus amarus* used in Benin, West Africa. BMC Veterinary Research. 16(1):49

Lekphrom R, Kanokmedhakul K, Schevenels F, Kanokmedhakul S. (2018). Antimalarial polyoxygenated cyclohexene derivatives from the roots of *Uvaria cherrevensis*. Fitoterapia. 127:420-424.

Lekphrom R, Kanokmedhakul S, Kanokmedhakul K. (2009). Bioactive styryllactones and alkaloid from flowers of *Goniothalamus laoticus.* Journal of Ethnopharmacology. 125:47-50

Levrier C, Balastrier M, Beattie KD, Carroll AR, Martin F, Choomuenwai V, Davis RA. (2013). Pyridocoumarin, aristolactam and aporphine alkaloids from the Australian rainforest plant *Goniothalamus australis*. Phytochemistry 86:121-26

Li C, Lee D, Graf TN, Phifer SS, Nakanishi Y, Riswan S, Setyowati FM, Saribi AM, Soejarto DD, Farnsworth NR, Falkinham JO 3rd, Kroll DJ, Kinghorn AD, Wani MC, Oberlies NH. (2009). Bioactive Constituents of the Stem Bark of *Mitrephora glabra.* Journal of Natural Products. 72:1949-53

Li HJ, Wu NL, Pu CM, Hsiao CY, Chang DC, Hung CF. (2020) Chrysin alleviates imiquimod-induced psoriasis-like skin inflammation and reduces the release of CCL20 and antimicrobial peptides. Scientific Reports. 10(1):2932.

Li HT, Wu HM, Chen HL, Liu CM, Chen CY. (2013). The Pharmacological activities of (-)-anonaine. Molecules 18:8257-63

Li HY, Sun NJ, Kashiwada Y, Sun L, Snider JV, Cosentino LM, Lee KH. (1993). Anti-AIDS agents, 9. Suberosol, a new C31 lanostane-type triterpene and anti-HIV principle from *Polyalthia suberosa.* Journal of Natural Products. 56(7):1130-3.

Li LK, Rola AS, Kaid FA, Ali AM, Alabsi AM. (2016). Goniothalamin induces cell cycle arrest and apoptosis in H400 human oral squamous cell carcinoma: A caspase-dependent mitochondrial-mediated pathway with downregulation of NF-κβ. Archives of Oral Biology. 64:28-38

Li TF, Ma J, Han XW, Jia YX, Yuan HF, Shui SF, Guo D, Yan L. (2019). Chrysin ameliorates cerebral ischemia/reperfusion (I/R) injury in rats by regulating the PI3K/Akt/mTOR pathway. Neurochemistry International. 129:104496

Liao T, Ding L, Wu P, Zhang L, Li X, Xu B, Zhang H, Ma Z, Xiao Y, Wang P. (2020) Chrysin Attenuates the NLRP3 Inflammasome Cascade to Reduce Synovitis and Pain in KOA Rats. Drug Design, Development & Therapy. 14:3015-3027.

Liao ZY, Liang IC, Li HJ, Wu CC, Lo HM, Chang DC, Hung CF. (2020) Chrysin Inhibits High Glucose-Induced Migration on Chorioretinal Endothelial Cells via VEGF and VEGFR Down-Regulation. International Journal of Molecular Sciences. 21(15):5541.

Lim HK, Kim KM, Jeong SY, Choi EK, Jung J. (2016). Chrysin Increases the Therapeutic Efficacy of Docetaxel and Mitigates Docetaxel-Induced Edema. Integrative Cancer Therapies. May 5. pii: 1534735416645184.

Lima RB, Rocha e Silva LF, Melo MR, Costa JS, Picanço NS, Lima ES, Vasconcellos MC, Boleti AP, Santos JM, Amorim RC, Chaves FC, Coutinho JP, Tadei WP, Krettli AU, Pohlit AM. (2015) In vitro and in vivo anti-malarial activity of plants from the Brazilian Amazon. Malaria Journal. 14:508

Lin S, Zhang G, Liao Y, Pan J. (2015). Inhibition of chrysin on xanthine oxidase activity and its inhibition mechanism. International Journal of Biological Macromolecules. 81:274-82.

Litaudon M, Bousserouel H, Awang K, Nosjean O, Martin MT, Dau ME, Hadi HA, Boutin JA, Sévenet T, Guéritte F. (2009). A dimeric sesquiterpenoid from a Malaysian *Meiogyne* as a new inhibitor of Bcl-xL/BakBH3 domain peptide interaction. Journal of Natural Products. 72(3):480-3.

Liu N, Zhong H, Tu J, Jiang Z, Jiang Y, Jiang Y, Jiang Y, Li J, Zhang W, Wang Y, Sheng C. (2018a). Discovery of simplified sampangine derivatives as novel fungal biofilm inhibitors. European Journal of Medicinal Chemistry. 143:1510-1523

Liu YP, Tang JY, Hua Y, Lai L, Luo XL, Zhang ZJ, Yin WQ, Chen GY, Fu YH. (2018b). Bioactive polyoxygenated seco-cyclohexenes from *Artabotrys hongkongensis*. Bioorganic Chemistry. 76:386-391.

Lucio AS, Almeida JR, Da-Cunha EV, Tavares JF, Barbosa Filho JM. (2015). Alkaloids of the Annonaceae: occurrence and a compilation of their biological activities. Alkaloids Chemistry & Biolohy. 74:233-409.

Ma G, Zhang J, Yang X, Guo P, Hou X, Fan Y, Liu Y, Zhang M. (2020) TMEM16A-encoded anoctamin 1 inhibition contributes to chrysin-induced coronary relaxation. Biomedicine & Pharmacother.apy 131:110766.

Ma R, Chen JT, Ji XY, Xu XL, Mu Q. (2020) Hydroxypropyl-β-Cyclodextrin Complexes of Styryllactones Enhance the Anti-Tumor Effect in SW1116 Cell Line. Frontiers in Pharmacology. 11:484.

Macabeo AP, Tudla FA, Krohn K, Franzblau SG. (2012). Antitubercular activity of the semi-polar extractives *of Uvaria rufa*. Asian Pacific Journal of Tropical Medicine. 5(10):777-80.

Macabeo APG, Flores AIG, Fernandez RAT, Budde S, Faderl C, Dahse HM, Franzblau SG. (2020) Antitubercular and cytotoxic polyoxygenated cyclohexane derivatives from *Uvaria grandiflora*. Natural Product Research. Mar 23:1-4.

Macabeo APG, Letada AG, Budde S, Faderl C, Dahse HM, Franzblau SG, Alejandro GJD, Pierens GK, Garson MJ. (2017). Antitubercular and Cytotoxic Chlorinated seco-Cyclohexenes from *Uvaria alba*. Journal of Natural Products. 80(12):3319-3323

Macedo T, Ribeiro V, Oliveira AP, Pereira DM, Fernandes F, Gomes NGM, Araújo L, Valentão P, Andrade PB. (2020). Anti-inflammatory properties of *Xylopia aethiopica* leaves: Interference with pro-inflammatory cytokines in THP-1-derived macrophages and flavonoid profiling. Journal of Ethnopharmacology. 248:112312

Machana S, Weerapreeyakul N, Barusrux S. (2012) Anticancer effect of the extracts from *Polyalthia evecta* against human hepatoma cell line (HepG2). Asian Pacific Journal of Tropical Biomedicine. 2(5):368-74.

Madubunyi II, Njoko CJ, Ibeh EO, Chime AB. (1996). Antihepatotoxic and trypanocidal effects of the root bark extract of *Uvaria chamae*. International Journal of Pharmacognosy. 34(1):34-40

Madubunyi II. (2012). Hepatoprotective activity of *Uvaria chamae* root bark methanol extract against acetaminophen-induced liver lesions in rats. Journal of Cosmetic Science. 21(2):127-35

Mahdi F, Morgan JB, Liu W, Agarwal AK, Jekabsons MB, Liu Y, Zhou YD, Nagle DG. (2015) Sampangine (a Copyrine Alkaloid) Exerts Biological Activities through Cellular Redox Cycling of Its Quinone and Semiquinone Intermediates. Journal of Natural Products. 78(12):3018-23.

Mandal S, Rajani GP, Sharma RK, Gupta N. (2012) In vitro antioxidant and anti-inflammatory potential of *Polyalthia longifolia* in rats. Indian Journal of Pharmacology. 44(2):277-8.

Mani R, Natesan V. (2018). Chrysin: Sources, beneficial pharmacological activities, and molecular mechanism of action. Phytochemistry. 145:187-196.

Marthanda Murthy M., Subramanyam M., Hima Bindu M., Annapurna J. (2005) Antimicrobial activity of clerodane diterpenoids from *Polyalthia longifolia* seeds. Fitoterapia. 6:336–339.

Martins CV, de Resende MA, da Silva DL, Magalhães TF, Modolo LV, Pilli RA, de Fátima A. (2009). In vitro studies of anticandidal activity of goniothalamin enantiomers. Journal of Applied Microbiology. 107(4):1279-86.

Martins IR, Dos Santos RF, de C Correia AC, de Oliveira GA, Macêdo CL, de S Monteiro F, Dos Santos PF, de A Cavalcante F, Tavares JF, da Silva BA. (2013) Relaxant effect of Ent-7α-hydroxytrachyloban-18-oic acid, a trachylobane diterpene from *Xylopia langsdorfiana* A. St-Hil. & Tul., on tracheal smooth muscle. Journal of Smooth Muscle Reearch. 49:15-25.

Matsumoto T, Nakamura S, Fujimoto K, Ohta T, Ogawa K, Yoshikawa M, Matsuda H. (2014b) Structure of constituents isolated from the flower buds of *Cananga odorata* and their inhibitory effects on aldose reductase. Journal of Natural Medicines. 68(4):709-16.

Matsumoto T, Nakamura S, Nakashima S, Fujimoto K, Yoshikawa M, Ohta T, Ogawa K, Matsuda H. (2014a) Lignan dicarboxylates and terpenoids from the flower buds of *Cananga odorata* and their inhibitory effects on melanogenesis. Journal of Natural Products. 77(4):990-9.

Mbaveng AT, Kuete V, Efferth T. (2017). Potential of Central, Eastern and Western Africa Medicinal Plants for Cancer Therapy: Spotlight on Resistant Cells and Molecular Targets. Frontiers in Pharmacology. 8:343.

Mbekou MIK, Dize D, Yimgang VL, Djague F, Toghueo RMK, Sewald N, Lenta BN, Boyom FF. (2021) Antibacterial and Mode of Action of Extracts from Endophytic Fungi Derived from *Terminalia mantaly, Terminalia catappa,* and *Cananga odorata.* Biomed Research International. 2021:6697973.

McDonnell B, Newcomb P. (2019) Trial of Essential Oils to Improve Sleep for Patients in Cardiac Rehabilitation. Journal of Alternative & Complementary Medicine. 25(12):1193-1199.

Meesakul P, Jaidee W, Richardson C, Andersen RJ, Patrick BO, Willis AC, Muanprasat C, Wang J, Lei X, Hadsadee S, Jungsuttiwong S, Pyne SG, Laphookhieo S. (2020a). Styryllactones from *Goniothalamus tamirensis*. Phytochemistry. 171:112248

Meesakul P, Pyne SG, Laphookhieo S. (2020b). Potent α-glucosidase inhibitory activity of compounds isolated from the leaf extracts of *Uvaria hamiltonii*. Natural Product Research. 34(17):2495-2499.

Meesakul P, Richardson C, Pyne SG, Laphookhieo S. (2019). α-Glucosidase Inhibitory Flavonoids and Oxepinones from the Leaf and Twig Extracts of *Desmos cochinchinensis*. Journal of Natural Products. 82(4):741-747.

Melekoglu R, Ciftci O, Eraslan S, Alan S, Basak N. (2018). The Protective Effects of Glycyrrhetinic Acid and Chrysin against Ischemia-Reperfusion Injury in Rat Ovaries. Biomed Research International. 2018:5421308.

Menan H, Banzouzi JT, Hocquette A, Pélissier Y, Blache Y, Koné M, Mallié M, Assi LA, Valentin A. (2006). Antiplasmodial activity and cytotoxicity of plants used in West African traditional medicine for the treatment of malaria. Journal of Ethnopharmacology. 105(1-2):131-6.

Mendes RF, Pinto NC, da Silva JM, da Silva JB, Hermisdorf RC, Fabri RL, Chedier LM, Scio E. (2017) The essential oil from the fruits of the Brazilian spice *Xylopia sericea* A. St.-Hil. presents expressive in-vitro antibacterial and antioxidant activity. Journal of Pharmacy & Pharmacology. 69(3):341-348.

Menezes LR, Costa CO, Rodrigues AC, Santo FR, Nepel A, Dutra LM, Silva FM, Soares MB, Barison A, Costa EV, Bezerra DP. (2016). Cytotoxic Alkaloids from the Stem of *Xylopia laevigata*. Molecules. 21(7). pii: E890.

Meng DH, Xu YP, Chen WL, Zou J, Lou LG, Zhao WM. (2007) Anti-tumour clerodane-type diterpenes from *Mitrephora thorelii*. Journal of Asian Natural Products Research. 9(6-8):679-84.

Meng X, Fang S, Zhang Z, Wang Y, You C, Zhang J, Yan H. (2016). Preventive effect of chrysin on experimental autoimmune uveitis triggered by injection of human IRBP peptide 1-20 in mice. Cellular and Molecular Immunology. 14(8):701-11

Menon MK, Kar A. (1970) Analgesic effect of the essential oil of *Miliusa tomentosa* (roxb.) J. Sinclair. Indian Journal of Experimental Biology. 8(2):151-2.

Misra P, Sashidhara KV, Singh SP, Kumar A, Gupta R, Chaudhaery SS, Gupta SS, Majumder HK, Saxena AK, Dube A. (2010). 16alpha-Hydroxycleroda-3,13 (14)Z-dien-15,16-olide from *Polyalthia longifolia*: a safe and orally active antileishmanial agent. British Journal of Pharmacology. 159(5):1143-50.

Mizuno CS, Souza AB, Tekwani BL, Ambrósio SR, Veneziani RC. (2015) Synthesis and biological evaluation of polyalthic acid derivatives for the treatment of neglected diseases. Bioorganic & Medicinal Chemistry Letters. 25(23):5529-31.

Moghadam ER, Ang HL, Asnaf SE, Zabolian A, Saleki H, Yavari M, Esmaeili H, Zarrabi A, Ashrafizadeh M, Kumar AP. (2020) Broad-Spectrum Preclinical Antitumor Activity of Chrysin: Current Trends and Future Perspectives. Biomolecules. 10(10):1374.

Mohammadi A, Kazemi S, Hosseini M, Najafzadeh Varzi H, Feyzi F, Morakabati P, Moghadamnia AA. (2019b). Chrysin Effect in Prevention of Acetaminophen-Induced Hepatotoxicity in Rat. Chemical Research in Toxicology. 32(11):2329-2337.

Mohammadi Z, Sharif Zak M, Majdi H, Mostafavi E, Barati M, Lotfimehr H, Ghaseminasab K, Pazoki-Toroudi H, Webster TJ, Akbarzadeh A. (2019a). The effect of chrysin-curcumin-loaded nanofibres on the wound-healing process in male rats. Artificial Cells, Nanomedicine & Biotechnology. 47(1):1642-1652

Mohammadian F, Abhari A, Dariushnejad H, Nikanfar A, Pilehvar-Soltanahmadi Y, Zarghami N. (2016). Effects of Chrysin-PLGA-PEG Nanoparticles on Proliferation and Gene Expression of miRNAs in Gastric Cancer Cell Line. Iranian Journal of Cancer Prevention. 9(4):e4190.

Mohammed A, Islam MS. (2017). Antioxidant potential of *Xylopia aethiopica* fruit acetone fraction in a type 2 diabetes model of rats. Biomedicine and Pharmacotherapy. 96:30-36.

Mohammed A, Koorbanally NA, Islam MS. (2016). Anti-diabetic effect of *Xylopia aethiopica* (Dunal) A. RicH. (Annonaceae) fruit acetone fraction in a type 2 diabetes model of rats. Journal of Ethnopharmacology. 180:131-9

Mohammed A, Victoria Awolola G, Ibrahim MA, Anthony Koorbanally N, Islam MS. (2021). Oleanolic acid as a potential antidiabetic component of *Xylopia aethiopica* (Dunal) A. Rich. (Annonaceae) fruit: bioassay guided isolation and molecular docking studies. Natural Product Research. 35(5):788-791.

Moharam BA, Jantan I, Jalil J, Shaari K. (2010). Inhibitory effects of phylligenin and quebrachitol isolated from *Mitrephora vulpina* on platelet activating factor receptor binding and platelet aggregation. Molecules. 15(11):7840-8

Mohd Ridzuan MAR, Ruenruetai U, Noor Rain A, Khozirah S, Zakiah I. (2006). Antimalarial properties of goniothalamin in combination with chloroquine against *Plasmodium yoelii* and *Plasmodium berghei* growth in mice. Tropical Biomedicine. 23(2):140-46

Monggoot S, Pichaitam T, Tanapichatsakul C, Pripdeevech P. (2018). Antibacterial potential of secondary metabolites produced by *Aspergillus* sp., an endophyte of *Mitrephora wangii*. Archives of Microbiology. 200(6):951-959.

Moniruzzaman M, Ferdous A, Wahid Bokul F. (2015) Evaluation of antinociceptive activity of ethanol extract of bark of *Polyalthia longifolia*. Journal of Ethnopharmacology 172:364-7.

Morimoto M. (2019) Chemical defense against insects in *Heterotheca subaxillaris* and three Orobanchaceae species using exudates from trichomes. Pest Management Science. 75(9):2474-2481.

Mosaddik MA, Haque ME. (2003). Cytotoxicity and antimicrobial activity of goniothalamin isolated from *Bryonopsis laciniosa*. Phytotherapy Research. 17(10):1155-7.

Moss M, Hewitt S, Moss L, Wesnes K. (2008) Modulation of cognitive performance and mood by aromas of peppermint and ylang-ylang. International Journal of Neuroscience. 118(1):59-77.

Mostafa NM, Edmond MP, El-Shazly M, Fahmy HA, Sherif NH, Singab ANB. (2021) Phytoconstituents and renoprotective effect of *Polyalthia longifolia* leaves extract on radiation-induced nephritis in rats via TGF-β/smad pathway. Natural Product Research. Sep 7:1-6.

Moukette Moukette B, Pieme CA, Nya Biapa PC, Ngogang JY. (2015) In vitro antioxidant and anti-lipoperoxidative activities of bark extracts of *Xylopia aethiopica* against ion-mediated toxicity on liver homogenates. Journal of Complementary & Integrative Medicine. 12(3):195-204.

Moura APG, Beltrão DM, Pita JCLR, Xavier AL, Brito MT, de Sousa TKG, Batista LM, de Carvalho JE, Ruiz ALTG, Della Torre A, Duarte MC, Tavares JF, da Silva MS, Sobral MV. (2016). Essential oil from fruit of *Xylopia langsdorffiana*: antitumour activity and toxicity. Pharmaceutical Biology. Aug 25:1-10

Mueller D, Davis RA, Duffy S, Avery VM, Camp D, Quinn RJ. (2009). Antimalarial activity of azafluorenone alkaloids from the Australian tree *Mitrephora diversifolia*. Journal of Natural Products. 72:1538-40

Muhammad A, Waziri AD, Forcados GE, Sanusi B, Sani H, Malami I, Abubakar IB, Muhammad A, Muhammad RA, Mohammed HA. (2019). Sickling-suppressive effects of chrysin may be associated with sequestration of deoxy-haemoglobin, 2,3-bisphosphoglycerate mutase, alteration of redox homeostasis and functional chemistry of sickle erythrocytes. Human & Experimental Toxicology. Dec 26:960327119895815

Murphy BT, Cao S, Brodie PJ, Miller JS, Ratovoson F, Birkinshaw C, Rakotobe E, Rasamison VE, Tendyke K, Suh EM, Kingston DG. (2008). Antiproliferative compounds of *Artabotrys madagascariensis* from the Madagascar rainforest. Natural Product Research. 22(13):1169-75.

Naaz H, Singh S, Pandey VP, Singh P, Dwivedi UN. (2013) Anti-cholinergic alkaloids as potential therapeutic agents for Alzheimer's disease: an in silico approach. Indian Journal of Biochemistry & Biophysics. Apr;50(2):120-5.

Nabavi SF, Braidy N, Habtemariam S, Orhan IE, Daglia M, Manayi A, Gortzi O, Nabavi SM. (2015). Neuroprotective effects of chrysin: From chemistry to medicine. Neurochemistry International. 90:224-31

Nagavally RR, Sunilkumar S, Akhtar M, Trombetta LD, Ford SM. (2021) Chrysin Ameliorates Cyclosporine-A-Induced Renal Fibrosis by Inhibiting TGF-β1-Induced Epithelial-Mesenchymal Transition. International Journal of Molecular Sciences. 22(19):10252.

Nascimento AM, Maia TD, Soares TE, Menezes LR, Scher R, Costa EV, Cavalcanti SC, La Corte R. (2017). Repellency and Larvicidal Activity of Essential oils from *Xylopia laevigata, Xylopia frutescens, Lippia pedunculosa,* and Their Individual Compounds against *Aedes aegypti* Linnaeus. Neotropical Entomology. 46(2):223-230.

Naz S, Imran M, Rauf A, Orhan IE, Shariati MA, Iahtisham-Ul-Haq, IqraYasmin, Shahbaz M, Qaisrani TB, Shah ZA, Plygun S, Heydari M. (2019). Chrysin: Pharmacological and therapeutic properties. Life Sciences 235:116797.

Ngoutane Mfopa A, Corona A, Eloh K, Tramontano E, Frau A, Boyom FF, Caboni P, Tocco G. (2018). *Uvaria angolensis* as a promising source of inhibitors of HIV-1 RT-associated RNA-dependent DNA polymerase and RNase H functions. Natural Product Research. 32(6):640-647.

Nguemdjo Chimeze VW, Bankoglu EE, Zühlke S, Fannang VS, Eckelmann D, Chi Shirri J, Djuidje EN, Djama CM, Stopper H, Wandji J. (2021) Cytotoxic and genotoxic properties of artathomsonine, a new oxoberberine alkaloid from *Artabotrys thomsonii* (annonaceae). Natural Product Research. May 18:1-9.

Nguyen HT, Vu TY, Dakal TC, Dhabhai B, Nguyen XHQ, Tatipamula VB. (2021a) Cleroda-4(18),13-dien-15,16-olide as novel xanthine oxidase inhibitors: An integrated in silico and in vitro study. PLoS One. 16(6):e0253572.

Nguyen MV, Han JW, Le Dang Q, Ryu SM, Lee D, Kim H, Choi GJ. (2021b) Clerodane Diterpenoids Identified from *Polyalthia longifolia* Showing Antifungal Activity against Plant Pathogens. Journalof Agricultural & Food Chemistry. 69(36):10527-10535.

Nguyen NT, Pham VC, Litaudon M, Guéritte F, Grellier P, Nguyen VT, Nguyen VH. (2008). Antiplasmodial alkaloids from *Desmos rostrata*. Journal of Natural Products. 71(12):2057-9

Nguyen TH, Ho VD, Do TT, Bui HT, Phan VK, Sak K, Raal A. (2015). A new lignan glycoside from the aerial parts and cytotoxic investigation of *Uvaria rufa*. Natural Product Research 29(3):247-52.

Nguyen Thien TV, Vo TKL, Dang PH, Huynh NV, Ngo TTD, Nguyen TMN, Hansen PE, Ton That Q. (2020) Two new sesquiterpenes from the stems of *Miliusa velutina*. Natural Product Research. Jul 15:1-7.

Nhiem NX, Tuong NT, Ky PT, Subedi L, Park SJ, Ngoc TM, Yen PH, Tai BH, Quang TH, Kiem PV, Kim SY, Kim SH. (2017). Chemical Components from *Phaeanthus vietnamensis* and Their Inhibitory NO Production in BV2 Cells. Chemistry & Biodiversity. Aug;14(8).

Nishiyama Y, Moriyasu M, Ichimaru M, Iwasa K, Kato A, Mathenge SG, Chalo Mutiso PB, Juma FD. (2010). Antinocicpetive effects of the extracts of *Xylopia parviflora* bark and its alkaloidal components in experimental animals. Journal of Natural Medicines. 64(1):9-15

Nor Azman NS, Hossan MS, Nissapatorn V, Uthaipibull C, Prommana P, Jin KT, Rahmatullah M, Mahboob T, Raju CS, Jindal HM, Hazra B, Mohd Abd Razak MR, Prajapati VK, Pandey RK, Aminudin N, Shaari K, Ismail NH, Butler MS, Zarubaev VV, Wiart C. (2018). Anti-infective activities of 11 plants species used in traditional medicine in Malaysia. Experimental Parasitology. 194:67-78.

Novaes P, Torres PB, dos Santos DYAC. (2015). Biological activities of Annonaceae species extracts from Cerrado. Brazilian Journal of Botany 39(1):131–137

Nwakiban APA, Cicolari S, Piazza S, Gelmini F, Sangiovanni E, Martinelli G, Bossi L, Carpentier-Maguire E, Tchamgoue AD, Agbor G, Kuiaté JR, Beretta G, Dell'Agli M, Magni P. (2020b) Oxidative Stress Modulation by Cameroonian Spice Extracts in HepG2 Cells: Involvement of Nrf2 and Improvement of Glucose Uptake. Metabolites.;10(5):182

Nwakiban APA, Fumagalli M, Piazza S, Magnavacca A, Martinelli G, Beretta G, Magni P, Tchamgoue AD, Agbor GA, Kuiaté JR, Dell'Agli M, Sangiovanni E. (2020a) Dietary Cameroonian Plants Exhibit Anti-Inflammatory Activity in Human Gastric Epithelial Cells. Nutrients. 12(12):3787. d

Nwozo SO, Orojobi BF, Adaramoye OA. (2011) Hypolipidemic and antioxidant potentials of *Xylopia aethiopica* seed extract in hypercholesterolemic rats. Journal of Medicinal Food. 14(1-2):114-9.

Obiri DD, Osafo N, Ayande PG, Antwi AO. (2014). *Xylopia aethiopica* (Annonaceae) fruit extract suppresses Freund's adjuvant-induced arthritis in Sprague-Dawley rats. Journal of Ethnopharmacology. 152(3):522-31

Obiri DD, Osafo N. (2013) Aqueous ethanol extract of the fruit of *Xylopia aethiopica* (Annonaceae) exhibits anti-anaphylactic and anti-inflammatory actions in mice. Journal of Ethnopharmacology. 148(3):940-5.

Ofusori DA, Komolafe OA, Adewole OS, Arayombo BE, Margolis D, Naicker T. (2016). Morphological study of the effects of aqueous leaf extract of *Xylopia aethiopica* on the pancreas in diabetic rats. Italian Journal of Anatomy and Embryology. 121(1):77-87.

Okokon JE, Ita BN, Udokpoh AE. (2006). The in-vivo antimalarial activities of *Uvaria chamae* and *Hippocratea africana*. Annals of Tropical Medicine and Parasitology. 100(7):585-90.

Okwari OO, Nneli RO, Osim EE. Effect of aqueous fruit extract of *Xylopia aethiopica* on intestinal fluid and glucose transfer in rats. Nigerian Journal of Physiological Sciences. 2010 Nov 28;25(2):181-6.

Okwuosa OM Chukwura EI, Chukwuma GO, Okwuosa CN, Enweani IB, Agbakoba NR, Chukwuma CM, Manafa PO, Umedum CU. (2012). Phytochemical and antifungal activities of *Uvaria chamae* leaves and roots, *Spondias mombin* leaves and bark and *Combretum racemosum* leaves. African Journal of Medicine and Medical Sciences. 41(Suppl.):99-103.

Oliveira VB, Araújo RLB, Eidenberger T, Brandão MGL. (2018) Chemical composition and inhibitory activities on dipeptidyl peptidase IV and pancreatic lipase of two underutilized species from the Brazilian Savannah: *Oxalis cordata* A.St.-Hil. and *Xylopia aromatica* (Lam.) Mart. Food Research International. 105:989-995.

Oliver-Bever B. (1986). Medicinal Plants in Tropical West Africa. Cambridge University Press, London.

Olivon F, Nothias LF, Dumontet V, Retailleau P, Berger S, Ferry G, Cohen W, Pfeiffer B, Boutin JA, Scalbert E, Roussi F, Litaudon M. (2018). Natural Inhibitors of the RhoA-p115 Complex from the Bark of *Meiogyne baillonii*. Journal of Natural Products. 81(7):1610-1618.

Olumese FE, Omoruyi FO, Onoagbe IO. (2019) Effects of *Uvaria chamae* Root Extracts on Blood Glucose, Inflammatory Markers, Lipid Profile, Liver and Renal Status in Streptozotocin-induced Diabetic Rats. Nigerian Journal of Physiological Sciences. 34(2):207-213.

Ong HG, Kim YD (2015). Herbal Therapies and Social-Health Policies: Indigenous Ati Negrito Women's Dilemma and Reproductive Healthcare Transitions in the Philippines. Evidence-Based Complementary and Alternative Medicine. 2015:491209.

Orchard A, van Vuuren SF, Viljoen AM, Kamatou G. (2018) The in vitro antimicrobial evaluation of commercially essential oils and their combinations against acne. International Journal of Cosmetic Science. Mar 24.

Osafo N, Obiri DD, Antwi AO, Yeboah OK. (2018) The acute anti-inflammatory action of xylopic acid isolated from Xylopia *aethiopica*. Journal of Basic Clinical Physiology & Pharmacology. 29(6):659-669.

Osanloo M, Sedaghat MM, Sanei-Dehkordi A, Amani A. (2019) Plant-Derived Essential Oils; Their Larvicidal Properties and Potential Application for Control of Mosquito-Borne Diseases. Galen Medical Journal. 8:e1532.

Osorio E, Arango GJ, Jiménez N, Alzate F, Ruiz G, Gutiérrez D, Paco MA, Giménez A, Robledo S. (2007). Antiprotozoal and cytotoxic activities in vitro of Colombian Annonaceae. Journal of Ethnopharmacology. 111:630-35

Othman M, Genapathy S, Liew PS, Ch'ng QT, Loh HS, Khoo TJ, Wiart C, Ting KN. (2011). Search for antibacterial agents from Malaysian rainforest and tropical plants. Natural Product Research 25(19):1857-64.

Ouattara ZA, Boti JB, Ahibo CA, Bekro YA, Casanova J, Tomi F, Bighelli A. (2016) Composition and Chemical Variability of Ivoirian *Polyalthia oliveri* Leaf Oil. Chemistry & Biodiversity. 13(3):293-298.

Oyeyemi AO, Oseni OA, Babatunde AO, Molehin OR. (2020) Modulatory effect of *Polyalthia longifolia* leaves against cadmium-induced oxidative stress and hepatotoxicity in rats. Journal of Complementary & Integrative Medicine. May 9:/j/jcim.ahead-of-print/jcim-2019-0038/jcim-2019-0038.xml.

Pai SA, Munshi RP, Panchal FH, Gaur IS, Juvekar AR. (2019). Chrysin ameliorates nonalcoholic fatty liver disease in rats. Naunyn Schmiedeberg's Archives of Pharmacology. 392(12):1617-1628

Panidthananon W, Chaowasku T, Sritularak B, Likhitwitayawuid K. (2018). A New Benzophenone C-Glucoside and Other Constituents of *Pseuduvaria fragrans* and Their α-Glucosidase Inhibitory Activity. Molecules. 23(7). pii: E1600.

Paragas EM, Gehle G, Krohn K, Franzblau SG, Macabeo APG (2014). Anti-Tubercular Flavonol Derivatives from *Uvaria rufa*. Research Journal of Pharmaceutical, Biological and Chemical Sciences, 5(6):856-59

Pares RB, Alves DS, Alves LFA, Godinho CC, Gobbo Neto L, Ferreira TT, Nascimento MM, Ascari J, Oliveira DF. (2021) Acaricidal Activity of Annonaceae Plants for *Dermanyssus gallinae* (Acari: Dermanyssidae) and Metabolomic Profile by HPLC-MS/MS. Neotropical Entomology. 50(4):662-672.

Parmar VS, Tyagi OD, Malhotra A, Singh SK, Bisht KS, Jain R. (1994). Novel constituents of *Uvaria* species. Natural Product Reports. 11(2):219-24

Pavela R, Maggi F, Giordani C, Cappellacci L, Petrelli R, Canale A. (2020). Insecticidal activity of two essential oils used in perfumery (ylang ylang and frankincense). Natural Product Research. Jan 22:1-7

Payakarintarungkul, K. 2005. Antioxidants from *Uvaria rufa* Bloom roots. Masters Thesis, Faculty of Science, Chulalongkorn University.

Pereira TS, Machado Esquissato GN, Costa EV, Nogueira PCL, Castro-Prado MAA. (2021) Mutagenic and cytostatic activities of the *Xylopia laevigata* essential oil in human lymphocytes. Natural Product Research. 35(10):1682-1685.

Perry LM, Metzger J. (1980). Medicinal Plants of East and Southeast Asia, MIT Press, Cambridge MA., USA.

Pfeifer Barbosa AL, Wenzel-Storjohann A, Barbosa JD, Zidorn C, Peifer C, Tasdemir D, Çiçek SS. (2019) Antimicrobial and cytotoxic effects of the *Copaifera reticulata* oleoresin and its main diterpene acids. Journal of Ethnopharmacology. 233:94-100.

Pingili RB, Pawar AK, Challa SR, Kodali T, Koppula S, Toleti V. (2019). A comprehensive review on hepatoprotective and nephroprotective activities of chrysin against various drugs and toxic agents. Chemico-Biological Interactions. 308:51-60.

Pita JC, Xavier AL, de Sousa TK, Mangueira VM, Tavares JF, de Oliveira Júnior RJ, Veras RC, Pessoa Hde L, da Silva MS, Morelli S, Ávila Vde M, da Silva TG, Diniz Mde F, Castello-Branco MV. (2012). In vitro and in

vivo antitumor effect of trachylobane-360, a diterpene from *Xylopia langsdorffiana.* Molecules. 17(8):9573-89.

Pita JC, Gomes IF, dos Santos SG, Tavares JF, da Silva MS, Diniz Mde F, Sobral MV. (2014). Matrix effect and optimization of LC-MSn determination of trachylobane-360 in mice blood. Journal of Pharmaceutical and Biomedical Analysis. 100:262-70.

Pontes de Sousa I, Ferreira AG, Miller Crotti AE, Alves Dos Santos R, Kiermaier J, Kraus B, Heilmann J, Jacometti Cardoso Furtado NA. (2020) New antifungal ent-labdane diterpenes against *Candida glabrata* produced by microbial transformation of ent-polyalthic acid. Bioorganic Chemistry. 95:103560.

Pootaeng-On Y, Charoensuksai P, Wongprayoon P, Jiajaroen S, Chainok K, Rayanil KO. (2020) Miliusins; cytotoxic neolignans from the leaves of *Miliusa sessilis*. Phytochemistry.176:112417.

Popoola TD, Awodele O, Babawale F, Oguns O, Onabanjo O, Ibanga I, Godwin H, Oyeniyi T, Fatokun AA, Akinloye O. (2019). Antioxidative, antimitotic, and DNA-damaging activities of *Garcinia kola* stem bark, *Uvaria chamae* root, and *Olax subscorpioidea* root used in the ethnotherapy of cancers. Journal of Basic & Clinical Physiology & Pharmacology. Nov 20;31(3)

Popoola TD, Awodele O, Omisanya A, Obi N, Umezinwa C, Fatokun AA. (2016). Three indigenous plants used in anti-cancer remedies, *Garcinia kola* Heckel (stem bark), *Uvaria chamae* P. Beauv. (root) and *Olax subscorpioidea* Oliv. (root) show analgesic and anti-inflammatory activities in animal models. Journal of Ethnopharmacology. 194:440-449

Popoola TD, Guetchueng ST, Ritchie KJ, Awodele O, Dempster NM, Akinloye O, Sarker SD, Fatokun AA. (2021) Potent Nrf2-inducing, antioxidant, and anti-inflammatory effects and identification of constituents validate the anti-cancer use of *Uvaria chamae* and *Olax subscorpioidea*. BMC Complementary Medicine & Therapies. 21(1):234.

Pouofo Nguiam M, Njonte Wouamba SC, Longo F, Gounoue Kamkumo R, Donji Kenne Foweda L, Dzeufiet Djomeni PD, Lenta Ndjakou B, Sewald N, Fekam Boyom F, Kouam Fogue S, Dimo T. (2021) Antibacterial and antishigellosis activity of *Xylopia staudtii* (engl. & diels), Annonaceae. Journal of Ethnopharmacology. 280:114406.

Prajit R, Sritawan N, Suwannakot K, Naewla S, Aranarochana A, Sirichoat A, Pannangrong W, Wigmore P, Welbat JU. (2020) Chrysin Protects against Memory and Hippocampal Neurogenesis Depletion in D-Galactose-Induced Aging in Rats. Nutrients. 12(4):1100.

Prawat U, Chairerk O, Phupornprasert U, Salae AW, Tuntiwachwuttikul P. (2013). Two new C-benzylated dihydrochalcone derivatives from the leaves of *Melodorum siamensis*. Planta Medica. 79(1):83-6

Promchai T, Jaidee A, Cheenpracha S, Trisuwan K, Rattanajak R, Kamchonwongpaisan S, Laphookhieo S, Pyne SG, Ritthiwigrom T. (2016). Antimalarial Oxoprotoberberine Alkaloids from the Leaves of *Miliusa cuneata*. Journal of Natural Products. 79(4):978-83.

Promgool T, Kanokmedhakul K, Tontapha S, Amornkitbamrung V, Tongpim S, Jamjan W, Kanokmedhakul S. (2019). Bioactive homogentisic acid derivatives from fruits and flowers of *Miliusa velutina*. Fitoterapia. 134:65-72.

Pumiputavon K, Chaowasku T, Saenjum C, Osathanunkul M, Wungsintaweekul B, Chawansuntati K, Lithanatudom P, Wipasa J. (2019). Cytotoxic and cytostatic effects of four Annonaceae plants on human cancer cell lines. In Vitro Cellular & Developmental Biology. Animal. 55(9):723-732.

Qian JQ, Sun P, Pan ZY, Fang ZZ. (2015). Annonaceous acetogenins reverses drug resistance of human hepatocellular carcinoma BEL-7402/5-FU and HepG2/ADM cell lines. International Journal of Clinical & Experimental Pathology. 8(9):11934-44

Queiroz JC, Antoniolli AR, Quintans-Júnior LJ, Brito RG, Barreto RS, Costa EV, da Silva TB, Prata AP, de Lucca W Jr, Almeida JR, Lima JT, Quintans JS. (2014). Evaluation of the anti-inflammatory and antinociceptive effects of the essential oil from leaves of *Xylopia laevigata* in experimental models. ScientificWorldJournal. 2014:816450.

Quevauviller A, Hamonniere M. (1977) Activité des principaux alcaloïdes de Polyalthia oliveri Engler (Annonacées) sur le système nerveux central et le systéme cardio-vasculaire [Activity of the principal alkaloids of *Polyalthia oliveri* Engler (Annonaceac) on the central nervous system and the cardiovascular system]. Comptes Rendus Acad Hebdomadaires des Seances de l'Academie des Sciences D. 284(1):93-6. [French].

Quimque MT, Notarte KI, Letada A, Fernandez RA, Pilapil DY 4th, Pueblos KR, Agbay JC, Dahse HM, Wenzel-Storjohann A, Tasdemir D, Khan A, Wei DQ, Gose Macabeo AP. (2021) Potential Cancer- and Alzheimer's Disease-Targeting Phosphodiesterase Inhibitors from *Uvaria alba*: Insights from In Vitro and Consensus Virtual Screening. ACS Omega. 6(12):8403-8417.

Quintans Jde S, Soares BM, Ferraz RP, Oliveira AC, da Silva TB, Menezes LR, Sampaio MF, Prata AP, Moraes MO, Pessoa C, Antoniolli AR, Costa EV, Bezerra DP. (2013). Chemical constituents and anticancer effects of the essential oil from leaves of *Xylopia laevigata*. Planta Medica. 79(2):123-30.

Rachakhom W, Khaw-On P, Pompimon W, Banjerdpongchai R. (2019). Dihydrochalcone Derivative Induces Breast Cancer Cell Apoptosis via Intrinsic, Extrinsic, and ER Stress Pathways but Abolishes EGFR/MAPK Pathway. BioMed Research International. 2019:7298539

Rai AK, Singh SP, Pandey AR, Ansari A, Ahmad S, Sashidhara KV, Tamrakar AK. (2021). Flavonoids from *Polyalthia longifolia* prevents advanced glycation end products formation and protein oxidation aligned with fructose-induced protein glycation. Natural Product Research. 35(17):2921-2925.

Rani N, Bharti S, Bhatia J, Nag TC, Ray R, Arya DS. (2016). Chrysin, a PPAR-γ agonist improves myocardial injury in diabetic rats through inhibiting AGE-RAGE mediated oxidative stress and inflammation. Chemico-Biological Interactions. 250:59-67

Rashid S, Nafees S, Vafa A, Afzal SM, Ali N, Rehman MU, Hasan SK, Siddiqi A, Barnwal P, Majed F, Sultana S. (2016). Inhibition of precancerous lesions development in kidneys by chrysin via regulating hyperproliferation, inflammation and apoptosis at pre clinical stage. Archives of Biochemistry and Biophysics. 606:1-9

Rashno M, Sarkaki A, Farbood Y, Rashno M, Khorsandi L, Naseri MKG, Dianat M. (2019). Therapeutic effects of chrysin in a rat model of traumatic brain injury: A behavioral, biochemical, and histological study. Life Sciences. 228:285-294.

Rayanil KO, Limpanawisut S, Tuntiwachwuttikul P. (2013). Ent-pimarane and ent-trachylobane diterpenoids from *Mitrephora alba* and their cytotoxicity against three human cancer cell lines. Phytochemistry. 89:125-30

Rayanil KO, Sutassanawichanna W, Suntornwat O, Tuntiwachwuttikul P. (2016). A new dihydrobenzofuran lignan and potential α-glucosidase inhibitory activity of isolated compounds from *Mitrephora teysmannii*. Natural Product Research. Feb 9:1-7

Rayiti RK, Munnangi SR, Bandarupalli R, Chakka V, Nimmagadda SL, Sk LS, Uppalapati S, Bolla R, Challa SR. (2020) Effect of Chrysin on Mechanical Hyperalgesia in Chronic Constriction Injury-Induced Neuropathic Pain in Rat Model. International Journal of Applied & Basic Medical Research. 10(3):189-193.

Reyes-Trejo B, Sánchez-Mendoza ME, Becerra-García AA, Cedillo-Portugal E, Castillo-Henkel C, Arrieta J. (2008) Bioassay-guided isolation of an anti-ulcer diterpenoid from *Croton reflexifolius*: Role of nitric oxide, prostaglandins and sulfhydryls. The Journal of Pharmacy & Pharmacology. 60:931–936.

Ribeiro V, Ferreres F, Macedo T, Gil-Izquierdo Á, Oliveira AP, Gomes NGM, Araújo L, Pereira DM, Andrade PB, Valentão P. (2021) Activation of caspase-3 in gastric adenocarcinoma AGS cells by *Xylopia aethiopica* (Dunal) A. Rich. fruit and characterization of its phenolic fingerprint by HPLC-DAD-ESI(Ion Trap)-MSn and UPLC-ESI-QTOF-MS2. Food Research International. 141:110121.

Rodrigues AM, De Paula JE, Degallier N, Molez JE, Espindola LS. (2006). Larvicidal activity of some Cerrado plant extracts against *Aedes aegypti*. Journal of the American Mosquto Control Association. 22(2):314-7.

Rodríguez-Landa JF, Hernández-López F, Cueto-Escobedo J, Herrera-Huerta EV, Rivadeneyra-Domínguez E, Bernal-Morales B, Romero-Avendaño E. (2019). Chrysin (5,7-dihydroxyflavone) exerts anxiolytic-like effects through GABAA receptors in a surgical menopause model in rats. Biomedicine & Pharmacotherapy. 109:2387-2395.

Rodríguez-Silverio J, Sánchez-Mendoza ME, Rocha-González HI, Reyes-García JG, Flores-Murrieta FJ, López-Lorenzo Y, Quiñonez-Bastidas GN, Arrieta J. (2021) Evaluation of the Antinociceptive, Antiallodynic, Antihyperalgesic and Anti-Inflammatory Effect of Polyalthic Acid. Molecules. 26(10):2921.

Rupachandra S, Sarada DV. (2014) Anti-proliferative and apoptotic properties of a peptide from the seeds of *Polyalthia longifolia* against human cancer cell lines. Indian Journal of Biochemistry & Biophysics. 51(2):127-34

Ryu S, Bazer FW, Lim W, Song G. (2019). Chrysin leads to cell death in endometriosis by regulation of endoplasmic reticulum stress and cytosolic calcium level. Journal of Cell Physiology. 234(3):2480-2490.

Saadawi S, Jalil J, Jasamai M, Jantan I. (2012). Inhibitory effects of acetylmelodorinol, chrysin and polycarpol from *Mitrella kentii* on prostaglandin E_2 and Thromboxane B_2 production and platelet activating factor receptor binding. Molecules. 17(5):4824-35.

Sachs J, Kadioglu O, Weber A, Mundorf V, Betz J, Efferth T, Pietruszka J, Teusch N. (2019). Selective inhibition of P-gp transporter by goniothalamin derivatives sensitizes resistant cancer cells to chemotherapy. Journal of Natural Medicine. 73(1):226-235.

Salae AW, Chairerk O, Sukkoet P, Chairat T, Prawat U, Tuntiwachwuttikul P, Chalermglin P, Ruchirawat S. (2017). Antiplasmodial dimeric chalcone derivatives from the roots of *Uvaria siamensis*. Phytochemistry. 135:135-143.

Salleh WMNHW, Khamis S, Nafiah MA, Abed SA. (2019). Chemical composition and anticholinesterase inhibitory activity of the essential oil of *Pseuduvaria macrophylla* (Oliv.) Merr. from Malaysia. Natural Product Research. Jul 11:1-6

Samarghandian S, Azimi-Nezhad M, Borji A, Hasanzadeh M, Jabbari F, Farkhondeh T, Samini M. (2016a). Inhibitory and Cytotoxic Activities of Chrysin on Human Breast Adenocarcinoma Cells by Induction of Apoptosis. Pharmacognosy Magazine. 12(Suppl 4):S436-S440.

Samarghandian S, Azimi-Nezhad M, Pourbagher Shahri AM, Farkhondeh T. (2019). Antidotal or protective effects of honey and one of its major polyphenols, chrysin, against natural and chemical toxicities. Acta Bio-Medica 90(4):533-550

Samarghandian S, Azimi-Nezhad M, Samini F, Farkhondeh T. (2016b). Chrysin treatment improves diabetes and its complications in liver, brain, and pancreas in streptozotocin-induced diabetic rats. Canadian Journal of Physiology and Pharmacology. 94(4):388-93

Sánchez-Mendoza ME, Reyes-Trejo B, De La Rosa L, Rodríguez-Silverio J, Castillo-Henkel C, Arrieta J. (2008) Polyalthic Acid Isolated from Croton reflexifolius has Relaxing Effect in Guinea Pig Tracheal Smooth Muscle. Pharmaceutical Biology. 46:800–807.

Santos RF, Martins IR, Travassos RA, Tavares JF, Silva MS, Paredes-Gamero EJ, Ferreira AT, Nouailhetas VL, Aboulafia J, Rigoni VL, da Silva BA. (2012) Ent-7α-acetoxytrachyloban-18-oic acid and ent-7α-hydroxytrachyloban-18-oic acid from *Xylopia langsdorfiana* A. St-Hil. & Tul. modulate K(+) and Ca(2+) channels to reduce cytosolic calcium concentration on guinea pig ileum. European Journal of Pharmacology 678(1-3):39-47.

Sari DP, Ninomiya M, Efdi M, Santoni A, Ibrahim S, Tanaka K, Koketsu M. Clerodane diterpenes isolated from *Polyalthia longifolia* induce apoptosis in human leukemia HL-60 cells. Journal of Oleo Science. 2013;62(10):843-8

Sarkaki A, Farbood Y, Mansouri SMT, Badavi M, Khorsandi L, Dehcheshmeh MG, Shooshtari MK. (2019). Chrysin prevents cognitive and hippocampal long-term potentiation deficits and inflammation in rat with cerebral hypoperfusion and reperfusion injury. Life Sciences. 226:202-209.

Sashidhara KV, Singh SP, Srivastava A, Puri A, Chhonker YS, Bhatta RS, Shah P, Siddiqi M.I. (2011) Discovery of a new class of HMG-CoA reductase inhibitor from *Polyalthia longifolia* as potential lipid lowering agent. European Journal of Medicinal Chemistry. 46:5206–5211. doi: 10.1016/j.ejmech.2011.08.012.

Satyanarayana K, Sravanthi K, Shaker IA, Ponnulakshmi R, Selvaraj J. (2015). Role of chrysin on expression of insulin signaling molecules. Journal of Ayurveda & Integrative Medicine. 6(4):248-58.

Sawasdee K, Chaowasku T, Lipipun V, Dufat T, Michel S, Likhitwitayawuid K. (2013). New neolignans and a lignan from *Miliusa fragrans*, and their anti-herpetic and cytotoxic activities. Tetrahedron Letters. 54(32):4259–4263

Sawasdee K, Chaowasku T, Lipipun V. (2014). Geranylated homogentisic acid derivatives and flavonols from *Miliusa umpangensis*. Biochemical Systematics and Ecology. 2014;54:179–181

Scotti L, Ishiki HM, Mendoca Junio FJB, Santos PF, Tavares JF, Silava MS, Scotti M (2014). Theoretical research into anticancer activity of diterpenes isolated from the paraiban flora. Natural Product Communications. 9(7):911-4.

Seangphakdee P, Pompimon W, Meepowpan P, Panthong A, Chiranthanut N, Banjerdpongchai R, Wudtiwai B, Nuntasaen N, Pitchuanchom S. (2013) Anti-inflammatory and anticancer activities of (–)-zeylenol from stems of *Uvaria grandiflora.* ScienceAsia 39:610–614

Semple SJ, Nobbs SF, Pyke SM, Reynolds GD, Flower RLP. (1999). Antiviral flavonoid from *Pterocaulon sphacelatum*, an Australian Aboriginal medicine. Journal of Ethnopharmacology. 68(1-3): 283–88.

Senedese JM, Rinaldi-Neto F, Furtado RA, Nicollela HD, de Souza LDR, Ribeiro AB, Ferreira LS, Magalhães GM, Carlos IZ, da Silva JJM, Tavares DC, Kenupp Bastos J. (2019) Chemopreventive role of *Copaifera reticulata* Ducke oleoresin in colon carcinogenesis. Biomedicine & Pharmacotherapy. 111:331-337.

Sesang W, Punyanitya S, Pitchuanchom S, Udomputtimekakul P, Nuntasaen N, Banjerdpongchai R, Wudtiwai B, Pompimon W. (2014) Cytotoxic aporphine alkaloids from leaves and twigs of *Pseuduvaria trimera* (Craib). Molecules. 19(7):8762-72.

Seyed MA, Jantan I, Bukhari SNA. (2014). Emerging anticancer potentials of goniothalamin and its molecular mechanisms. Biomedical Research International. 2014:536508.

Shakri NM, Salleh WMNHW, Khamis S, Mohamad Ali NA, Nadri MH. (2020) Composition of the essential oils of three Malaysian *Xylopia* species (Annonaceae). Zeitschrift für Naturforschung C. Journal of Biosciences. 75(11-12):479-484.

Shakri NM, Salleh WMNHW, Khamis S, Mohamad Ali NA. Chemical characterization of *Goniothalamus macrophyllus* and *Goniothalamus malayanus* leaves' essential oils. Zeitschrift dur Naturforschung C Journal of Biosciences. 2020 Nov 26;75(11-12):485-488.

Shams Ul Hassan S, Abbas SQ, Hassan M, Jin HZ. (2021) Computational Exploration of Anti-Cancer Potential of Guaiane Dimers from *Xylopia vielana* by Targeting B-Raf Kinase Using Chemo-Informatics, Molecular Docking and MD Simulation Studies. Anticancer Agents in Medicinal Chemistry. Oct 13

Shanmugapriya, Sasidharan S. (2020) Functional analysis of down-regulated miRNA-221-5p in HeLa cell treated with polyphenol-rich *Polyalthia longifolia* as regulators of apoptotic HeLa cell death. 3 Biotech. 10(5):206.

Shanmugapriya, Vijayarathna S, Sasidharan S. (2019) Functional Validation of DownRegulated MicroRNAs in HeLa Cells Treated with *Polyalthia longifolia* Leaf Extract Using Different Microscopic Approaches: A Morphological Alteration-Based Validation. Microscopy & Microanalysis. 25(5):1263-1272.

Sharma P, Kumari A, Gulati A, Krishnamurthy S, Hemalatha S. (2017). Chrysin isolated from *Pyrus pashia* fruit ameliorates convulsions in experimental animals. Nutritional Neuroscience. Dec 28:1-9.

Shoieb SM, Esmat A, Khalifa AE, Abdel-Naim AB. (2018). Chrysin attenuates testosterone-induced benign prostate hyperplasia in rats. Food & Chemical Toxicology. 111:650-659.

Shooshtari MK, Sarkaki A, Mansouri SMT, Badavi M, Khorsandi L, Ghasemi Dehcheshmeh M, Farbood Y. (2019). Protective effects of Chrysin against memory impairment, cerebral hyperemia and oxidative stress after cerebral hypoperfusion and reperfusion in rats. Metabolic Brain Disease. 35(2):401-412.

Sidahmed HMA, Azizan AH, Mohan S, Abdulla MA, Abdelwahab SI, Taha MM, Hadi AH, Ketuly KA, Hashim NM, Loke MF, Vadivelu J. (2013). Gastroprotective effect of desmosdumotin C isolated from *Mitrella kentii*

against ethanol-induced gastric mucosal hemorrhage in rats: possible involvement of glutathione, heat-shock protein-70, sulfhydryl compounds, nitric oxide, and anti-*Helicobacter pylori* activity. BMC Complementary and Alternative Medicine 13:183

Siddhardha B, Pandey U, Kaviyarasu K, Pala R, Syed A, Bahkali AH, Elgorban AM. (2020) Chrysin-Loaded Chitosan Nanoparticles Potentiates Antibiofilm Activity against *Staphylococcus aureus*. Pathogens. 9(2):115.

Simo MK, Nguepi MD, Sameza ML, Toghueo RK, Fekam FB, Froldi G. (2018) Cameroonian medicinal plants belonging to Annonaceae family: radical scavenging and antifungal activities. Natural Product Research. 32(17):2092-2095.

Soh D, Ernestine N, Tchana Satchet EM, Defokou UD, Schneider B, Giovanni V, Nyassé B. (2021) Antiproliferative activity of semisynthetic xylopic acid derivatives. Natural Product Research. Jan 25:1-8.

Somsrisa J, Meepowpan P, Krachodnok S, Thaisuchat H, Punyanitya S, Nantasaen N, Pompimon W. (2013). Dihydrochalcones with antiinflammatory activity from leaves and twigs of *Cyathostemma argenteum.* Molecules. 18(6):6898-907.

Son MJ, Kim HK, Huong do TT, Kim YH, Van Sung T, Cuong NM, Woo SH. (2011). Chrysosplenol C increases contraction in rat ventricular myocytes. Journal of Cardiovascular Pharmacology. 57(2):259–62.

Song HY, Sik Kim W, Kim JM, Bak DH, Moo Han J, Lim ST, Byun EB. (2019). A hydroxyethyl derivative of chrysin exhibits anti-inflammatory activity in dendritic cells and protective effects against dextran sodium salt-induced colitis in mice. International Immunopharmacology. 77:105958

Song JH, Kim YH, Lee SC, Kim MH, Lee JH. (2016). Inhibitory Effect of Chrysin (5,7-dihydroxyflavone) on Experimental Choroidal Neovascularization in Rats. Ophthalmic Research. 56(1):49-55.

Song JH, Kwon BE, Jang H, Kang H, Cho S, Park K, Ko HJ, Kim H. (2015). Antiviral Activity of Chrysin Derivatives against Coxsackievirus B3 in vitro and in vivo. Biomolecules and Therapeutics (Seoul). 23(5):465-70

Song JH, Moon KY, Lee SC, Kim SS. (2020) Inhibition of Hypoxia-Inducible Factor-1α and Vascular Endothelial Growth Factor by Chrysin in a Rat Model of Choroidal Neovascularization. International Journal of Molecular Sciences. 21(8):2842.

Soonthornchareonnon N, Wiwat C, Chuakul W. (2012). Biological Activities of Medicinal Plants from Mangrove and Beach Forest. Mahidol University Journal of Pharmaceutical Science. 39(1):9-18

Soonwera M, Phasomkusolsil S. (2015) Efficacy of Thai herbal essential oils as green repellent against mosquito vectors. Acta Tropica. 142:127-30.

Soonwera M. (2015) Efficacy of essential oil from Cananga odorata (Lamk.) Hook.f. & Thomson (Annonaceae) against three mosquito species *Aedes aegypti* (L.), *Anopheles dirus* (Peyton and Harrison), and *Culex quinquefasciatus* (Say). Parasitology Research. 114(12):4531-43

Souza IL, Correia AC, Araujo LC, Vasconcelos LH, Silva M, Costa VC, Tavares JF, Paredes-Gamero EJ, Cavalcante F, Silva B A. (2015). Essential oil from *Xylopia frutescens* Aubl. reduces cytosolic calcium levels on guinea pig ileum: mechanism underlying its spasmolytic potential. BMC Complementary & Alternative Medicine. 15: 327.

Stompor-Gorący M, Bajek-Bil A, Machaczka M. (2021) Chrysin: Perspectives on Contemporary Status and Future Possibilities as Pro-Health Agent. Nutrients. 13(6):2038.

Subrahmanya P, Ashalatha M, Prajna PS, Ashutosh Y, Rama B. (2011). Evaluation of antibacterial and antioxidant properties of *Uvaria narum* (Dunal) Wall. International Research Journal of Pharmacy (IRJP). 2(5):142-44

Suchaichit N, Kanokmedhakul K, Panthama N, Poopasit K, Moosophon P, Kanokmedhakul S. (2015) A 2H-tetrahydropyran derivative and bioactive constituents from the bark of *Goniothalamus elegants* Ast. Fitoterapia. 103:206-12.

Suffredini IB, Paciencia ML, Varella AD, Younes RN. (2007). In vitro cytotoxic activity of Brazilian plant extracts against human lung, colon and CNS solid cancers and leukemia. Fitoterapia. 78(3):223-6.

Sukkanon C, Nararak J, Bangs MJ, Chareonviriyaphap T. (2021) *Cananga odorata* (Magnoliales: Annonaceae) Essential Oil Produces Significant Avoidance Behavior in Mosquitoes. Journal of Medical Entomology. Sep 13:tjab143.

Sun L, Zhao R, Lan X, Chen R, Wang S, Du G. (2014) Goniolactone C, a styryl lactone derivative, inhibits PDGF-BB-induced vascular smooth muscle cell migration and proliferation via PDGFR/ERK signaling. Molecules. 19(12):19501-15.

Sundararajan M, Thomas PA, Teresa PA, Anbukkarasi M, Geraldine P. (2016). Regulatory effect of chrysin on expression of lenticular calcium transporters, calpains, and apoptotic-cascade components in selenite-induced cataract. Molecular Vision. 22:401-23.

Suthiphasilp V, Maneerat T, Andersen RJ, Patrick BO, Pyne SG, Laphookhieo S. (2021) α-Glucosidase inhibitory activity of compounds isolated from the twig and leaf extracts of *Desmos dumosus*. Heliyon. 7(2):e06180.

Suthiphasilp V, Maneerat T, Duangyod T, Charoensup R, Andersen RJ, Pyne SG, Laphookhieo S. (2020a) Polyoxygenated seco-cyclohexenes derivatives from flower and leaf extracts of *Desmos cochinchinensis* and their α-glucosidase inhibitory activity. Heliyon. 6(12):e05791.

Suthiphasilp V, Maneerat W, Andersen RJ, Patrick BO, Phukhatmuen P, Pyne SG, Laphookhieo S. (2019) Uvarialuridols A-C, three new polyoxygenated cyclohexenes from the twig and leaf extracts of *Uvaria lurida*. Fitoterapia. 138:104340.

Suthiphasilp V, Maneerat W, Rujanapun N, Duangyod T, Charoensup R, Deachathai S, Andersen RJ, Patrick BO, Pyne SG, Laphookhieo S. (2020b) α-Glucosidase inhibitory and nitric oxide production inhibitory activities of alkaloids isolated from a twig extract of *Polyalthia cinnamomea*. Bioorganic & Medicinal Chemistry. 28(10):115462.

Taha H, Arya A, Paydar M, Looi CY, Wong WF, Vasudeva Murthy CR, Noordin MI, Ali HM, Mustafa A, Hadi AH. (2014). Upregulation of insulin secretion and downregulation of pro-inflammatory cytokines, oxidative stress and hyperglycemia in STZ-nicotinamide-induced type 2 diabetic rats by *Pseuduvaria monticola* bark extract. Food and Chemical Toxicology. 66:295-306

Taha H, Hadi AH, Nordin N, Najmuldeen IA, Mohamad K, Shirota O, Nugroho AE, Piow WC, Kaneda T, Morita H. (2011) Pseuduvarines A and B, two new cytotoxic dioxoaporphine alkaloids from *Pseuduvaria rugosa*. Chemical & Pharmaceutical Bulletin (Tokyo). 59(7):896-7.

Taha H, Looi CY, Arya A, Wong WF, Yap LF, Hasanpourghadi M, Mohd MA, Paterson IC, Mohd Ali H. (2015). (6E,10E) Isopolycerasoidol and (6E,10E) Isopolycerasoidol Methyl Ester, Prenylated Benzopyran Derivatives from *Pseuduvaria monticola* Induce Mitochondrial-Mediated Apoptosis in Human Breast Adenocarcinoma Cells. PLoS One.10(5):e0126126

Takahashi JA, Pereira CR, Pimenta LP, Boaventura MA, Silva LG. (2006). Antibacterial activity of eight Brazilian annonaceae plants. Natural Products Research. 20(1):21-6.

Talebi M, Talebi M, Farkhondeh T, Kopustinskiene DM, Simal-Gandara J, Bernatoniene J, Samarghandian S. (2021b) An updated review on the versatile role of chrysin in neurological diseases: Chemistry, pharmacology, and drug delivery approaches. Biomedicine & Pharmacotherapy 141:111906.

Talebi M, Talebi M, Farkhondeh T, Simal-Gandara J, Kopustinskiene DM, Bernatoniene J, Samarghandian S. (2021a) Emerging cellular and molecular mechanisms underlying anticancer indications of chrysin. Cancer Cell International. 21(1):214.

Tamfu AN, Ceylan O, Kucukaydin S, Ozturk M, Duru ME, Dinica RM. (2020) Antibiofilm and Enzyme Inhibitory Potentials of Two Annonaceous Food Spices, African Pepper (*Xylopia aethiopica*) and African Nutmeg (*Monodora myristica*). Foods. Nov 29;9(12):1768.

Tan KK, Khoo TJ, Rajagopal M, Wiart C. (2015a). Antibacterial alkaloids from *Artabotrys crassifolius* Hook.f. &Thomson. Natural Product Research. 29(24):2346-9

Tan KK. (2015b). In vitro pharmacological properties of an indigenous medicinal plant, *Artabotrys crassifolius* Hook.f. & Thomson (Family: Annonaceae Juss.). PhD thesis, University of Nottingham.

Tan LTH, Lee LH, Yin WF, Chan CK, Kadir HA, Chan KC, Goh BH. (2015). Traditional Uses, Phytochemistry, and Bioactivities of *Cananga odorata* (Ylang-Ylang). Evidence-Based Complementary and Alternative Medicine. 2015:896314.

Tanabe G, Manse Y, Ogawa T, Sonoda N, Marumoto S, Ishikawa F, Ninomiya K, Chaipech S, Pongpiriyadacha Y, Muraoka O, Morikawa T. (2018). Total Synthesis of γ-Alkylidenebutenolides, Potent Melanogenesis Inhibitors from Thai Medicinal Plant *Melodorum fruticosum.* The Journal of Organic Chemistry. 83(15):8250-8264

Tanapichatsakul C, Monggoot S, Gentekaki E, Pripdeevech P. (2018). Antibacterial and Antioxidant Metabolites of *Diaporthe* spp. Isolated from Flowers of *Melodorum fruticosum*. Current Microbiology. 75(4):476-483

Tang Q, Ji F, Guo J, Wang J, Li Y, Bao Y. (2016). Directional modification of chrysin for exerting apoptosis and enhancing significantly anti-cancer effects of 10-hydroxy camptothecin. Biomedicine and Pharmacotherapy. 82:693-703

Tchoupang EN, Ateba SB, Zingue S, Zehl M, Krenn L, Njamen D. (2016) Estrogenic properties of spices of the traditional Cameroonian dish "Nkui" in ovariectomized Wistar rats. Journal of Complementary & Integrative Medicine. 13(2):151-62.

Temel Y, Kucukler S, Yıldırım S, Caglayan C, Kandemir FM. (2019). Protective effect of chrysin on cyclophosphamide-induced hepatotoxicity and nephrotoxicity via the inhibition of oxidative stress, inflammation, and apoptosis. Naunyn Schmiedeberg's Archives of Pharmacology. 393(3):325-337.

Teo SP, Bhakta S, Stapleton P, Gibbons S. (2020) Bioactive Compounds from the Bornean Endemic Plant *Goniothalamus longistipetes.* Antibiotics (Basel). 9(12):913.

Thang TD, Dai DN, Hoi TM, Isiaka A, Ogunwande IA. (2013). Essential oils from five species of Annonaceae from Vietnam. Natural Product Communications. 8(2):239-42.

Thangarajan S, Ramachandran S, Krishnamurthy P. (2016). Chrysin exerts neuroprotective effects against 3-Nitropropionic acid induced behavioral despair-Mitochondrial dysfunction and striatal apoptosis via upregulating Bcl-2 gene and downregulating Bax-Bad genes in male wistar rats. Biomedicine and Pharmacotherapy. 84:514-525

Thangnipon W, Suwanna N, Kitiyanant N, Soi-Ampornkul R, Tuchinda P, Munyoo B, Nobsathian S. (2012) Protective role of N-trans-feruloyltyramine against β-amyloid peptide-induced neurotoxicity in rat cultured cortical neurons. Neuroscience Letters. 513(2):229-32.

Thanuphol P, Asami Y, Shiomi K, Wongnoppavich A, Tuchinda P, Soonthornchareonnon N. (2018). Marcanine G, a new cytotoxic 1-azaanthraquinone from the stem bark of *Goniothalamus marcanii* Craib. Natural Product Research. 32(14):1682-1689.

Thao NP, Luyen BT, Tai BH, Cuong NM, Kim YC, Minh CV, Kim YH. (2015). Chemical constituents of *Miliusa balansae* leaves and inhibition of nitric oxide production in lipopolysaccharide-induced RAW 264.7 cells. Bioorganic and Medicinal Chemistry Letters. 25(18):3859-63.

The SN, Le Tuan A, Thu TDT, Dinh LN, Thi TT. (2021) Essential Oils of *Polyalthia suberosa* Leaf and Twig and Their Cytotoxic and Antimicrobial Activities. Chemistry & Biodiversity. 18(5):e2100020.

The Son N. (2019). Genus *Miliusa*: A Review of Phytochemistry and Pharmacology. Evidence Based Complementary & Alternative Medicine. 2019:8314693.

Thiplueang C, Punyanitya S, Banjerdpongchai R, Wudtiwai B, Udomputtimekakul P, Buayairaksa M, Nuntasaen N, Pompimon W. (2014) Sawtehtetronenin from *Goniothalamus sawtehii* and its cytotoxicity. Natural Product Communications. 9(12):1769-71.

Thiyagarajan V, Sivalingam KS, Viswanadha VP, Weng CF. (2016) 16-hydroxy-cleroda-3,13-dien-16,15-olide induced glioma cell autophagy via ROS generation and activation of p38 MAPK and ERK-1/2. Environmental Toxicology & Pharmacology. 45:202-11.

Thomas PS, Essien EE. (2020). Antiglycation, antioxidant, and cytotoxic activities of *Uvaria chamae* root and essential oil composition. Natural Product Research. 34(6):880-883.

Thuy TT, Quan TD, Anh NT, Van Sung T. (2011). A new hydrochalcone from *Miliusa sinensis*. Natural Product Research 25(14):1361-5.

Ting P, Srinuanchai W, Suttisansanee U, Tuntipopipat S, Charoenkiatkul S, Praengam K, Chantong B, Temviriyanukul P, Nuchuchua O. (2021) Development of Chrysin Loaded Oil-in-Water Nanoemulsion for Improving Bioaccessibility. Foods. 10(8):1912.

Toghueo RMK, Sahal D, Zabalgogeazcoa Í, Baker B, Boyom FF. (2018) Conditioned media and organic elicitors underpin the production of potent antiplasmodial metabolites by endophytic fungi from Cameroonian medicinal plants. Parasitology Research. 117(8):2473-2485.

Trieu QH, Mai HD, Pham VC, Litaudon M, Gueritte F, Retailleau P, Schmitz-Afonso I, Gimello O, Nguyen VH, Chau VM. (2014) Styryllactones and acetogenins from the fruits of *Goniothalamus macrocalyx*. Natural Product Communications. 9(4):495-8.

Tsai YF, Chu TC, Chang WY, Wu YC, Chang FR, Yang SC, Wu TY, Hsu YM, Chen CY, Chang SH, Hwang TL. (2017). 6-Hydroxy-5,7-dimethoxy-flavone suppresses the neutrophil respiratory burst via selective PDE4 inhibition to ameliorate acute lung injury. Free Radical Biolgy & Medicine. 106:379-392.

Uadkla O, Yodkeeree S, Buayairaksa M, Meepowpan P, Nuntasaen N, Limtrakul P, Pompimon W. (2013). Antiproliferative effect of alkaloids via cell cycle arrest from *Pseuduvaria rugosa*. Pharmaceutical Biology. 51(3):400-4.

Ueda JY, Athikomkulchai S, Miyatake R, Saiki I, Esumi H, Awale S. (2013). (+)-Grandifloracin, an antiausterity agent, induces autophagic PANC-1 pancreatic cancer cell death. Drug Design, Development & Therapy. 8:39-47.

Upadhyay N, Singh VK, Dwivedy AK, Chaudhari AK, Dubey NK. (2021) Assessment of nanoencapsulated *Cananga odorata* essential oil in chitosan nanopolymer as a green approach to boost the antifungal, antioxidant and in situ efficacy. International Journal of Biological Macromolecules. 171:480-490.

Vaithiyanathan S, Chandrasekaran K, Barik RC. (2018) Green biocide for mitigating sulfate-reducing bacteria influenced microbial corrosion. 3 Biotech. 8(12):495.

Van Beek TA, Verpoorte R, Svendsen AB, Santos AC, Olay LP. (1983). Revised structure of phaeantharine. Journal of Natural Products. 46(2):226-31.

Varghese AE, Govindan B, Madhavankutty J, Valiyaveetil AT, Karadka M, Baby S. (2018). A new antifungal benzoic acid ester from *Uvaria narum*. Natural Product Research. 32(22):2657-2662.

Vendramini-Costa DB, Francescone R, Posocco D, Hou V, Dmitrieva O, Hensley H, de Carvalho JE, Pilli RA, Grivennikov SI. (2017). Anti-inflammatory natural product goniothalamin reduces colitis-associated and sporadic colorectal tumorigenesis. Carcinogenesis. 38(1):51-63.

Vendramini-Costa DB, Monteiro KM, Iwamoto LH, Jorge MP, Tinti SV, Pilli RA4de Carvalho JE. (2014). Gastroprotective effects of goniothalamin against ethanol and indomethacin-induced gastric lesions in rats: Role of prostaglandins, nitric oxide and sulfhydryl compounds. Chemico-Biological Interactions. 224C:206-212.

Vendramini-Costa DB, Spindola HM, de Mello GC, Antunes E, Pilli RA, de Carvalho JE. (2015). Anti-inflammatory and antinociceptive effects of racemic goniothalamin, a styryl lactone. Life Sciences. 139:83-90

Venkateswararao E, Son MJ, Sharma N, Manickam M, Boggu P, Kim YH, Woo SH, Jung SH. (2015). Exploration of Pharmacophore in Chrysosplenol C as Activator in Ventricular Myocyte Contraction. ACS Medicinal Chemistry Letters. 6(7):758-63

Vera SS, Zambrano DF, Méndez-Sanchez SC, Rodríguez-Sanabria F, Stashenko EE, Duque Luna JE. (2014) Essential oils with insecticidal activity against larvae of *Aedes aegypti* (Diptera: Culicidae). Parasitology Research. 113(7):2647-54.

Vijayarathna S, Chen Y, Kanwar JR, Sasidharan S. (2017b) Standardized *Polyalthia longifolia* leaf extract (PLME) inhibits cell proliferation and promotes apoptosis: The anti-cancer study with various microscopy methods. Biomedicine & Pharmacotherapy 91:366-377.

Vijayarathna S, Oon CE, Chen Y, Kanwar JR, Sasidharan S. (2017a) *Polyalthia longifolia* Methanolic Leaf Extracts (PLME) induce apoptosis, cell cycle arrest and mitochondrial potential depolarization by possibly modulating the redox status in hela cells. Biomedicine & Pharmacotherapy. 89:499-514.

Vyry Wouatsa NA, Misra L, Venkatesh Kumar R. (2014). Antibacterial activity of essential oils of edible spices, *Ocimum canum* and *Xylopia aethiopica*. Journal of Food Science 79(5):M972-7.

Wang L, Wang Y, Lei Z. (2019).Chrysin ameliorates ANTU-induced pulmonary edema and pulmonary arterial hypertension via modulation of VEGF and eNOs. Journal of Biochemical & Molecular Toxicology. Apr 11:e22332

Wang T, Yuan Y, Wang J, Han C, Chen G. (2012) Anticancer activities of constituents from the stem of *Polyalthia rumphii*. Pakistan Journal of Pharmaceutical Sciences. 25(2):353-6.

Wang TS, Luo YP, Wang J, He MX, Zhong MG, Li Y, Song XP. (2013). (+)-rumphiin and polyalthurea, new compounds from the stems of *Polyalthia rumphii*. Natural Product Communications. 8(10):1427-9.

Wanner JKR, Dai DN, Huong LT, Hung NV, Schmidt E, Jirovetz L. (2016) Chemical Composition of Vietnamese Essential Oils of *Cinnamomum rigidifolium, Dasymaschalon longiusculum, Fissistigma maclurei and Goniothalamus albiflorus*. Natural Product Communications. 11(11):1701-1703.

Wasano N, Takemura T, Ismil R, Bakar B, Fujii Y. (2015) Transcriptomic evaluation of plant growth inhibitory activity of goniothalamin from the Malaysian medicinal plant *Goniothalamus andersonii*. . Natural Product Communications. 10(5):725-7.

Watanabe S, Hara K, Ohta K, Iino H, Miyajima M, Matsuda A, Hara M, Maehara T, Matsuura M, Matsushima E. (2013). Aroma helps to preserve information processing resources of the brain in healthy subjects but not in temporal lobe epilepsy. Seizure. 22(1):59-63

Weber A, Döhl K, Sachs J, Nordschild ACM, Schröder D, Kulik A, Fischer T, Schmitt L, Teusch N, Pietruszka J. (2017). Synthesis and cytotoxic activities of goniothalamins and derivatives. Bioorganic & Medicinal Chemistry. 25(22):6115-6125

Wen BY, Liang H, Guo HJ, Wu JH. (2019). Design, synthesis, and antitumor activity of desmosdumotin C analogues. Journal of Asian Natural Product Research. 21(7):702-715.

Wen Q, Liu YP, Yan G, Yang S, Hu S, Hua J, Yin WQ, Chen GY, Fu YH. (2020) Bioactive Eudesmane sesquiterpenes from *Artabotrys hongkongensis* Hance. Natural Product Research. 34(12):1687-1693.

Wiart C. (2007). *Goniothalamus* species: a source of drugs for the treatment of cancers and bacterial infections. eCAM 4(3):299-311

Williams CJ. (2011). Medicinal Plants in Australia Vol.2: Gums, Resins, Tannin and Essential Oils. Rosenberg Publishing, Dural.

Williams CJ. (2013). Medicinal Plants in Australia Vol.4: An Antipodean Apothecary. Rosenberg Publishing, Dural.

Woguem V, Fogang HP, Maggi F, Tapondjou LA, Womeni HM, Quassinti L, Bramucci M, Vitali LA, Petrelli D, Lupidi G, Papa F, Vittori S, Barboni L. (2014). Volatile oil from striped African pepper (*Xylopia parviflora*, Annonaceae) possesses notable chemopreventive, anti-inflammatory and antimicrobial potential. Food Chemistry. 149:183-9.

Wojnar W, Zych M, Borymski S, Kaczmarczyk-Sedlak I. (2020) Chrysin Reduces Oxidative Stress but Does Not Affect Polyol Pathway in the Lenses of Type 1 Diabetic Rats. Antioxidants (Basel). 9(2):160.

Wongsomboon P, Rattanajak R, Kamchonwongpaisan S, Pyne SG, Limtharakul T. (2021) Unique polyacetylenic ester-neolignan derivatives from *Mitrephora tomentosa* and their antimalarial activities. Phytochemistry. 183:112615.

Woode E, Alhassan A, Abaidoo CS. (2011) Effect of ethanolic fruit extract of *Xylopia aethiopica* on reproductive function of male rats. International Journal of Pharmacutical & Biomedical Research. 2:161–165

Woode E, Ameyaw EO, Abotsi WK, Boakye-Gyasi E. (2015) An isobolographic analysis of the antinociceptive effect of xylopic acid in combination with morphine or diclofenac. Journal of Basic & Clinical Pharmacy. 6(4):103-8.

Woode E, Ameyaw EO, Boakye-Gyasi E, Abotsi WK, Oppong Kyekyeku J, Adosraku R, Biney RP. (2016) Effects of an ethanol extract and the diterpene, xylopic acid, of *Xylopia aethiopica* fruits in murine models of musculoskeletal pain. Pharmaceutical Biology. 54(12):2978-2986.

Wu JH, Wang XH, Yi YH, Lee KH. (2003). Anti-AIDS agents 54. A potent anti-HIV chalcone and flavonoids from genus *Desmos*. Bioorganic & Medicinal Chemistry Letters. 13(10):1813-5.

Xi FM, Ma SG, Liu YB, Li L, Yu SS. (2016) Artaboterpenoids A and B, Bisabolene-Derived Sesquiterpenoids from *Artabotrys hexapetalus*. Organic Letters. 18(14):3374-7.

Xia B, Hong T, He X. (2018). Effect of anti-inflammatory flavonoid chrysin on osteogenesis of preosteoblast MC3T3-E1 cells]. Shanghai Kou Qiang Yi Xue. 27(3):261-264.

Xie Y, Zhong X, Xiao Y, Zhu S, Muhammad I, Yan S, Jin H, Zhang W. (2019) Vieloplains A-G, seven new guaiane-type sesquiterpenoid dimers from *Xylopia vielana*. Bioorganic Chemistry. 88:102891.

Xie YG, Wu GJ, Cheng TF, Zhu SL, Yan SK, Jin HZ, Zhang WD. (2018) Vielopsides A-E, five new guaiane-type sesquiterpenoid dimers from *Xylopia vielana*. Fitoterapia. 130:43-47

Xu M, Shi H, Liu D. (2019b). Chrysin protects against renal ischemia reperfusion induced tubular cell apoptosis and inflammation in mice. Experimental & Therapeutic Medicine. 17(3):2256-2262

Xu QQ, Zhang C, Zhang YL, Lei JL, Kong LY, Luo JG. (2021) Dimeric guaianes from leaves of *Xylopia vielana* as snail inhibitors identified by high content screening. Bioorganic Chemistry. 108:104646.

Xu X, Shi J, Gao H, Li Q. (2018). Zeylenone inhibits proliferation and promotes apoptosis in ovarian carcinoma cells via Janus kinase 2 / signal transducers and activators of transcription 3 pathways. The Journal of Obstetrics & Gynaecology Research. 44(8):1451-1457.

Xu XY, Tsang SW, Guan YF, Liu KL, Pan WH, Lam CS, Lee KM, Xia YX, Xie WJ, Wong WY, Lee MML, Tai WCS, Zhang HJ. (2019a). In Vitro and in Vivo Antitumor Effects of Plant-Derived Miliusanes and Their Induction of Cellular Senescence. Journal of Medicinal Chemistry. 62(3):1541-1561.

Yadav P, Choudhury S, Barua S, Khandelwal N, Kumar N, Shukla A, Garg SK. (2020). *Polyalthia longifolia* leaves methanolic extract targets entry and budding of viruses-an in vitro experimental study against paramyxoviruses. Journal of Ethnopharmacology. 248:112279

Yakubu MT, Fayemo HT. (2021) Anti-hyperprolactinemic activities of aqueous extract of *Uvaria chamae* (P. Beauv) roots and associated biochemical changes in chlorpromazine-induced hyperprolactinemic female Wistar rats. Journal of Ethnopharmacology. 271:113863.

Yang S, Liao Y, Li L, Xu X, Cao L. (2018a). Zeylenone Induces Mitochondrial Apoptosis and Inhibits Migration and Invasion in Gastric Cancer. Molecules. 23(9). pii: E2149

Yang S, Xiao H, Sun Y, Cao L. (2021) Zeylenone synergizes with cisplatin in osteosarcoma by enhancing DNA damage, apoptosis, and necrosis via the Hsp90/AKT/GSK3β and Fanconi anaemia pathway. Phytotherapy Research. 35(10):5899-5918.

Yang Z, Guan Y, Li J, Li L, Li Z. (2018b). Chrysin attenuates carrageenan-induced pleurisy and lung injury via activation of SIRT1/NRF2 pathway in rats. European Journal of Pharmacology. 836:83-88.

Yao J, Jiang M, Zhang Y, Liu X, Du Q, Feng G. (2016). Chrysin alleviates allergic inflammation and airway remodeling in a murine model of chronic asthma. International Immunopharmacology. 32:24-31

Yapi TA, Boti JB, Ahibo AC, Sutour S, Bighelli A, Casanova J, Tomi F. (2015) Composition and Chemical Variability of Ivoirian *Xylopia staudtii* Leaf Oil. Natural Product Communications. 10(6):1059-62.

Yapi TA, Boti JB, Ahibo CA, Bighelli A, Castola V, Casanova J, Tomi F. (2012a) Chemical variability of the leaf essential oil of *Xylopia aethiopica (*Dunal) A.Rich. from Côte d'Ivoire. Chemistry & Biodiversity. 9(12):2802-9. Doi

Yapi TA, Boti JB, Attioua BK, Ahibo AC, Bighelli A, Casanova J, Tomi F. (2012b) Three new natural compounds from the root bark essential oil from *Xylopia aethiopica*. Phytochemical Analysis. 23(6):651-6.

Yasmen N, Aziz MA, Tajmim A, Akter MI, Hazra AK, Rahman SMM. (2018) Analgesic and Anti-Inflammatory Activities of Diethyl Ether and n-Hexane Extract of *Polyalthia suberosa* Leaves. Evidence Based Complementary & Alternative Medcine. 2018:5617234.

Yeo H, Lee YH, Ahn SS, Jung E, Lim Y, Shin SY. (2021) Chrysin Inhibits TNFα-Induced TSLP Expression through Downregulation of EGR1 Expression in Keratinocytes. International Journal of Molecular Sciences. 22(9):4350.

Yeo H, Lee YH, Koh D, Lim Y, Shin SY. (2020) Chrysin Inhibits NF-κB-Dependent CCL5 Transcription by Targeting IκB Kinase in the Atopic Dermatitis-Like Inflammatory Microenvironment. International Journal of Molecular Sciences. 21(19):7348.

Zaima K, Takeyama Y, Koga I, Saito A, Tamamoto H, Azziz SS, Mukhtar MR, Awang K, Hadi AH, Morita H. (2012). Vasorelaxant effect of isoquinoline derivatives from two species of *Popowia perakensis* and *Phaeanthus crassipetalus* on rat aortic artery. Journal of Natural Medicines. 66(3):421-7.

Zeng S, Zhu B, Zeng J, Wu W, Jiang C. (2018). Zeylenone represses the progress of human prostate cancer by downregulating the Wnt/β-catenin pathway. Molecular Mediciine Reports. 18(6):5572-5578.

Zgoda JR, Freyer AJ, Killmer LB, Porter JR. (2001). Polyacetylene carboxylic acids from *Mitrephora celebica*. Journal of Natural Products. 64(10):1348-9.

Zgoda-Pols JR, Freyer AJ, Killmer LB, Porter JR. (2002). Antimicrobial diterpenes from the stem bark of *Mitrephora celebica*. Fitoterapia. 73(5):434-8.

Zhang C, Yu W, Huang C, Ding Q, Liang C, Wang L, Hou Z, Zhang Z. (2019a). Chrysin protects human osteoarthritis chondrocytes by inhibiting inflammatory mediator expression via HMGB1 suppression. Molecular Medicine Reports. 19(2):1222-1229.

Zhang J, Gao G, Chen L, Li J, Deng X, Zhao QS, Huang C. (2014) Hydrogen peroxide/ATR-Chk2 activation mediates p53 protein stabilization and anti-cancer activity of cheliensisin A in human cancer cells. Oncotarget. 5(3):841-52.

Zhang K, Ge Z, Xue Z, Huang W, Mei M, Zhang Q, Li Y, Li W, Zhang Z, Zhang Z, Zhang L, Wang H, Cai J, Yao Z, Zhang R, Da Y. (2015a). Chrysin suppresses human CD14(+) monocyte-derived dendritic cells and ameliorates experimental autoimmune encephalomyelitis. Journal of Neuroimmunology. 288:13-20

Zhang L, Huo X, Liao Y, Yang F, Gao L, Cao L. (2017). Zeylenone, a naturally occurring cyclohexene oxide, inhibits proliferation and induces apoptosis in cervical carcinoma cells via PI3K/AKT/mTOR and MAPK/ERK pathways. Scientific Reports. 7(1):1669.

Zhang L, Jin J, Zhang L, Hu R, Gao L, Huo X, Liu D, Ma X, Wang C, Han J, Li L, Sun X, Cao L. (2015b). Quantitative analysis of differential protein expression in cervical carcinoma cells after zeylenone treatment by stable isotope labeling with amino acids in cell culture. Journal of Proteomics. 126:279-87.

Zhang N, Zhang L, Feng L, Yao L. (2016a). The anxiolytic effect of essential oil of *Cananga odorata* exposure on mice and determination of its major active constituents. Phytomedicine. 23(14):1727-1734

Zhang N, Zhang L, Feng L, Yao L. (2018). *Cananga odorata* essential oil reverses the anxiety induced by 1-(3-chlorophenyl) piperazine through regulating the MAPK pathway and serotonin system in mice. Journal of Ethnopharmacology. 219:23-30.

Zhang Q, Di YT, He HP, Li SL, Hao XJ. (2010). Mitregenin, a new Annonaceous acetogenin from *Mitrephora maingayi*. Natural Product Communications. 5(11):1793-4.

Zhang R, Che X, Zhang J, Li Y, Li J, Deng X, Zhu J, Jin H, Zhao Q, Huang C. (2016b). Cheliensisin A (Chel A) induces apoptosis in human bladder cancer cells by promoting PHLPP2 protein degradation. Oncotarget. 7(41):66689-66699.

Zhang YL, Xu QQ, Zhou XW, Wu L, Wang XB, Yang MH, Luo J, Luo JG, Kong LY. (2019b). Rare dimeric guaianes from *Xylopia vielana* and their multidrug resistance reversal activity. Phytochemistry. 158:26-34

Zhao B, Li X. (2014) Altholactone induces reactive oxygen species-mediated apoptosis in bladder cancer T24 cells through mitochondrial dysfunction, MAPK-p38 activation and Akt suppression. Oncology Reports. 31(6):2769-75.

Zhao C, Li B, Liu D, Dai W, Cao L, Zhang M. (2019). Chemical components of the volatile oil from leaves of *Cananga odorata* and its anti-oxidant activity. Pakistan Journal of Pharmaceutical Sciences. 32(1):165-169.

Zheng JH, Lin SR, Tseng FJ, Tsai MJ, Lue SI, Chia YC, Woon M, Fu YS, Weng CF. (2019) Clerodane Diterpene Ameliorates Inflammatory Bowel Disease and Potentiates Cell Apoptosis of Colorectal Cancer. Biomolecules. 9(12):762.

Zhi QQ, Yan QH, Wang Q, Sun PF, Zhou HY, He ZM. (2019). Purification and characterization of two grandiuvarones from *Desmos chinensis* leaves and their antimicrobial activities. Natural Product Research. Jan 12:1-8.

Zhu L, Lu Y, Yu WG, Zhao X, Lu YH. (2016). Anti-photoageing and anti-melanogenesis activities of chrysin. Pharmaceutical Biology. 54(11):2692-2700.