

Dr. Duke's Phytochemical and Ethnobotanical Database**Biological Activities Found in *Malus domestica***

Activity	Chemical Count
11B-HSD-Inhibitor	3
5-Alpha-Reductase-Inhibitor	5
5-HT-Inhibitor	1
5-Lipoxygenase-Inhibitor	3
Acaricide	4
Acarifuge	1
ACE-Inhibitor	9
Acetylcholinergic	1
Acidulant	4
Acnegenic	1
Addictive	1
Additive	1
Adjuvant	1
Adrenergic	1
Aggregant	1
Aldehyde-Oxidase-Inhibitor	2
Aldose-Reductase-Inhibitor	15
Allelochemic	9

Activity	Chemical Count
Allelopathic	2
Allergenic	14
Alpha-Amylase-Inhibitor	1
Alpha-Glucosidase-Inhibitor	1
Alpha-Reductase-Inhibitor	1
Amphiglycemic?	1
Anabolic	1
Analgesic	13
Anaphrodisiac	1
Androgenic	3
Androgenic?	1
Anemiagenic	2
Anesthetic	3
Angiogenic	1
Angiotensin-Receptor-Blocker	3
Anhydrotic	1
Anorexic	3
Anthelmintic	1
Antiacid	1
Antiacne	7

Activity	Chemical Count
Antiacrodermatitic	1
Antiacrodynic	1
AntiADD	2
Antiadenomic	1
Antiadenoviral	1
Antiadenovirus	1
Antiadhesive	1
Antiadrenalinic	1
Antiaflatoxin	3
AntiAGE	2
Antiaggregant	17
Antiaging	7
Antiakathisic	1
Antialcoholic	6
Antialdosteronic	1
Antialkali?	1
Antialkalotic	1
Antiallergenic	2
Antiallergic	12
Antialopepic	5

Activity	Chemical Count
Antialzheimeran	9
Antiamblyopic	1
Antianaphylactic	5
Antiandrogenic	3
Antianemic	5
Antianginal	3
Antiangiogenic	6
Antianorectic	2
Antianorexic	1
Antianxiety	3
Antiaphthic	1
Antiapoplectic	1
Antiarabiflavinotic	1
Antiarrhythmic	8
Antiarteriosclerotic	2
Antiarthritic	13
Antiasthmatic	8
Antiataxic	1
Antiatherogenic	3
Antiatheromic	1

Activity	Chemical Count
Antiatherosclerotic	12
Antibackache	1
Antibacterial	40
Antiberiberi	1
Antibiotic	2
AntiBPH	1
Antibronchitic	1
Anticalculic	1
Anticancer	11
Anticancer (Breast)	2
Anticancer (Cervix)	1
Anticancer (Colon)	4
Anticancer (Esophagus)?	1
Anticancer (Forestomach)	2
Anticancer (Liver)	3
Anticancer (Lung)	2
Anticancer (Pancreas)	1
Anticancer (Skin)	2
Anticanker	3
Anticapillary-Fragility	3

Activity	Chemical Count
Anticarcinogenic	4
Anticarcinomic	4
Anticarcinomic (Breast)	1
Anticardiospasmic	1
Anticariogenic	3
Anticarpal-Tunnel	1
Anticataract	12
Anticephalagic	3
Anticervicaldysplasic	4
AntiCFS	3
Anticheilitic	3
Antichilblain	1
Anticholestatic	1
Anticirrhotic	3
Anticirrhotic?	1
Anticlastogen	3
Anticlaudificant?	1
Anticlimacteric	4
Anticoagulant	3
Anticoeliac	1

Activity	Chemical Count
Anticold	2
Anticolitic	3
Anticomplement	1
Anticomplementary	6
Anticonvulsant	8
Anticorneotic	1
Anticoronary	4
AntiCrohn's	3
AntiCTS	1
AntiCVI	1
Anticystitic	2
Antidandruff	3
Antidecubitic	4
Antideliriant	1
Antidementia	8
Antidepressant	13
Antidepressant?	1
Antidermatic	1
Antidermatitic	9
Antidermatitic?	1

Activity	Chemical Count
Antidiabetic	19
Antidiabetic?	2
Antidiarrheic	1
Antidiscotic	1
Antidote	1
Antidote (Acetaminophen)	1
Antidote (Aluminum)	2
Antidote (Cadmium)	2
Antidote (Hypoglycin-A)	1
Antidote (Lead)	3
Antidote (Mercury)	1
Antidote (Paracetamol)	1
Antidote (Paraquat)	1
Antidysgeuzic	1
Antidyskinetic	3
Antidysmenorrheic	2
Antidyspeptic	1
Antidysphagic	1
AntiEBV	4
Antieczemic	5

Activity	Chemical Count
Antiedemic	8
Antielastase	5
Antiencephalitic	2
Antiencephalopathic	7
Antiencephalopathic?	1
Antiendometriotic	2
Antienteritic	1
Antienterococcic	1
Antienterotic	1
Antienzymatic	1
Antiepileptic	5
Antierythemic	3
Antiescherichic	5
Antiestrogenic	6
Antiexudative	1
Antifatigue	7
Antifeedant	13
Antifertility	3
Antifibrinolytic	2
Antifibromyalgic	1

Activity	Chemical Count
Antifibrosarcomic	2
Antifibrotic	3
Antiflu	5
Antifuruncular	1
Antigallstone	2
Antigastric	2
Antigastritic	5
Antigastrotic	2
Antigenotoxic	1
Antigingivitic	4
Antiglaucomic	3
Antiglossitic	2
Antiglucuronidase	1
Antiglycosuric	1
Antigoiter	1
Antigonadotrophic	3
Antigonadotropic	3
Antigout	1
Antigranulocytopenic	1
Antigrey	1

Activity	Chemical Count
AntiGTF	1
Antihalitosis	1
Antihangover	5
Antiheartburn	1
Antihematuric	1
Antihemolytic	2
Antihemorrhagic	3
Antihemorrhoidal	1
Antihepatitic	4
Antihepatoadenomic	1
Antihepatocarcinogenic	1
Antihepatotoxic	1
Antihepatotoxic	14
Antiherpetic	16
Antiherpetic?	2
Antihiccup	1
Antihistaminic	12
AntiHIV	16
Antihomocystinuric	1
Antihydrophobic	1

Activity	Chemical Count
Antihyperactivity	1
Antihyperammonemic	1
Antihypercholesterolemic	3
Antihyperglycemic	2
Antihyperkeratotic	1
Antihyperkinetic	2
Antihyperlipidemic	1
Antihyperlipoproteinaemic	1
Antihypertensive	10
Antihyperthyroid	3
Antihypoglycemic	1
Antiichthyotic	1
Antiilus?	1
Antiimplantation	1
Antiimpotence	3
Antiinfarctal	1
Antiinfective	1
Antiinfertility	4
Antiinflammatory	34
Antiinflammatory?	1

Activity	Chemical Count
Antiinsomniac	5
Antiinsomniac?	1
Antiinsomnic	1
Antiischemic	4
Antikeratitic	1
Antikeshan	1
Antiketotic	3
Antiklebsielllic	1
AntiLegionella	3
Antileishmanic	4
Antilepric	2
Antileukemic	14
Antileukonychic	1
Antileukoplakic	1
Antileukorrhic	1
Antileukotriene	5
Antileukotriene-D4	3
Antilipoperoxidant	4
Antilithic	5
Antilupus	1

Activity	Chemical Count
AntiLyme	5
Antilymphocytic	1
Antilymphomic	4
Antimaculitic	6
Antimalarial	5
Antimanic	4
Antimastalgic	1
Antimastitic	1
Antimeasles	1
Antimelanogenic	3
Antimelanomic	6
AntiMeniere's	1
Antimenopausal	6
Antimenorrhagic	3
Antimetastatic	8
Antimigraine	5
Antimitotic	1
Antimitral-valve-prolapse	1
Antimorphinic	1
Antimorphinistic	1

Activity	Chemical Count
AntiMRSA	1
AntiMS	2
Antimutagenic	26
Antimyalgic	1
Antimyasthenic	1
Antimyelotoxic	1
Antimyocarditic	2
Antinauseant	1
Antineoplastic	1
Antinephritic	3
Antinephrolytic	1
Antineuralgic	3
Antineuramidase	1
Antineurasthenic	1
Antineuritic	1
Antineuropathic	4
Antineuropathic?	1
Antineurotic	1
AntiNF-kB	1
Antinitrosaminic	6

Activity	Chemical Count
Antinitrosic	1
Antinociceptive	6
Antinyctalopic	2
Antiobesity	6
Antiobesity?	1
Antionychyotic	1
Antiophidic	3
Antiophthalmic	1
Antiorchitic	1
Antiosteoarthritic	4
Antiosteoporotic	9
Antiotitic	3
Antiototic	1
Antioxidant	50
Antioxidant Synergist	3
Antioxidant?	2
Antiozenic	1
Antipancreatitic	1
Antipapillomic	1
Antiparkinsonian	9

Activity	Chemical Count
Antiparotitic	1
Antipellagic	3
Antiperiodontal	1
Antiperiodontic	2
Antiperiodontitic	5
Antiperistaltic	2
Antipermeability	1
Antiperoxidant	12
Antiperoxynitrite	1
Antipharyngitic	1
Antiphenylketonuric	2
Antiphotophobic	2
Antipityriasic	1
Antiplatelet	6
Antiplasmodial	2
Antiplatelet	1
AntiPMS	6
Antipneumonic	2
Antipodriac	2
Antipolio	4

Activity	Chemical Count
Antipoliomyelitic	2
Antipolyneuritic	1
Antiporphyrin	1
Antiprogestational	1
Antiprolactin	1
Antiproliferant	8
Antiproliferative	1
Antiprostaglandin	4
Antiprostanoid	1
Antiprostataadenomic	2
Antiprostatic	6
Antiprostatotic	1
Antiproteolytic	2
Antiprotozoal	1
Antipruritic	2
Antipseudomonic	1
Antipsoriac	4
Antipsychotic	3
Antipurpuric	2
Antipyretic	5

Activity	Chemical Count
Antiradicular	21
AntiRaynaud's	3
Antiretardation	1
Antiretinitic Optometry	1
Antiretinopathic	1
Antiretinotic	2
Antiretroviral	1
Antirheumatic	7
Antirheumatitic?	1
Antirhinitic	2
Antisalmonella	5
Antischizophrenic	1
Antisclerodermic	1
Antiscoliotic	1
Antiscorbutic	1
Antiscotomic	1
Antiseborrheic	4
Antiseptic	21
Antiserotonin	2
Antishingles	1

Activity	Chemical Count
Antisickling	5
Antisilicotic	1
Antisinusitic	1
Antispare-Tire	1
Antispasmodic	20
Antispasmophilic	1
AntiSpina-Bifida	1
Antisprue	1
Antistaphylococcic	6
Antistomatitic	2
Antistreptococcic	1
Antistress	5
Antistroke	3
Antisunburn	3
Antisyncopic	1
Antisyndrome-X	6
AntiTGF-beta	1
Antithiamin	2
Antithrombic	2
Antithrombogenic	2

Activity	Chemical Count
Antithromboxane	1
Antithyreotropic	1
Antithyroid	4
Antithyrotoxic	1
Antitic	1
Antitinnitic	1
AntiTourette's	1
Antitriglyceride	2
Antitrypanosomic	3
Antitubercular	2
Antitumor	21
Antitumor (Bladder)	2
Antitumor (brain)	3
Antitumor (Breast)	7
Antitumor (Cervix)	2
Antitumor (CNS)	1
Antitumor (Colon)	9
Antitumor (Esophagus)?	1
Antitumor (Forestomach)	2
Antitumor (Gastric)	1

Activity	Chemical Count
Antitumor (Kidney)	1
Antitumor (Liver)	2
Antitumor (Lung)	9
Antitumor (Mouth)	1
Antitumor (Ovary)	3
Antitumor (Pancreas)	2
Antitumor (Prostate)	4
Antitumor (Skin)	7
Antitumor (Stomach)	4
Antitumor (Thyroid)	1
Antitumor-Promoter	11
Antitussive	6
Antiulcer	19
Antiulcerogenic	2
Antiurease	1
Antiuremic	1
Antiuricosuric	1
AntiUTI	1
Antivaccinia	1
Antivaginitic	4

Activity	Chemical Count
Antivaricose	2
Antivertigo	1
Antiviral	29
Antiviral?	1
Antivertilgic	1
Antiwrinkle	1
Antixerophthalmic	1
Antixerotic	1
Antiyeast	1
Anxiolytic	8
AP-1-Inhibitor	1
Aphidifuge	1
Aphrodisiac	3
Apoptotic	11
Aromatase-Inhibitor	4
Artemicide	1
Arteriodilator	1
Ascaricide	1
Asthma-preventive	1
Astringent	4

Activity	Chemical Count
Ataxigenic	1
Atherogenic	1
ATPase-Inhibitor	1
Autotoxic	1
Avicide	1
Bacteristat	2
Beta-Adrenergic Receptor Blocker	6
Beta-Blocker	3
Beta-Glucuronidase-Inhibitor	5
Bitter	1
Bradycardiac	1
Bronchodilator	1
Bruchifuge	1
Bruchiphobe	1
Calcium-Antagonist	6
Calcium-Antagonist?	1
Calcium-Channel-Blocker	1
Calmodulin-Antagonist	1
cAMP-Inhibitor	1
cAMP-Phosphodiesterase-Inhibitor	4

Activity	Chemical Count
Cancer-Preventive	50
Candidicide	11
Capillarifortificant	2
Capillarigenic	3
Capillariprotective	3
Capillaritonic	1
Carcinogenic	10
Cardiac	1
Cardiomyopathogenic	1
Cardioprotective	13
Cardiotonic	7
Cardiotoxic	1
Carminative	1
Caspase-8-Inducer	1
Catabolic	3
Cataractagenic	1
Cathartic	1
Chemopreventive	8
Cholagogue	3
Choleretic	15

Activity	Chemical Count
Cholesterolytic	3
Choline-Sparing	2
Cholinergic	2
Chronotropic	1
Circulatory-Stimulant	1
Circulotonic	2
Clastogenic	2
CNS-Active	2
CNS-Depressant	8
CNS-Paralytic	1
CNS-Stimulant	4
Co-carcinogenic	1
Cold-preventive	1
Collagen-Sparing	2
Collagenase-Inhibitor	1
Collagenic	2
Collyrium	1
Colorant	5
Comedogenic	1
COMP-Inhibitor	2

Activity	Chemical Count
COMT-Inhibitor	1
Contraceptive	2
Convulsant	1
Copper-Antagonist	1
Copper-Chelator	2
Corrosive	1
Cosmetic	2
Counterirritant	1
COX-1-Inhibitor	4
COX-2-Inhibitor	10
Cyanogenic	1
Cyclooxygenase-Activator	3
Cyclooxygenase-Inhibitor	8
Cytochrome-P450-1A1-Inhibitor	1
Cytochrome-P450-1A2-Inhibitor	1
Cytoprotective	2
Cytotoxic	11
Deiodinase-Inhibitor	3
Deliriant	1
Demulcent	2

Activity	Chemical Count
Deodorant	3
Depressant	2
Dermatitigenic	4
Detoxicant	2
Detoxicant (Alcohol)	1
Diagnostic	1
Diaphoretic	1
Diaphoretic?	3
Differentiator	3
Disinfectant	1
Diuretic	25
DNA-Active	1
DNA-Binder	1
DNA-Protective	2
Dye	4
Elastase-Inhibitor	2
Embryotoxic	1
Emetic	4
Encephalopathic	1
Energizer	1

Activity	Chemical Count
Ergogenic	1
Erythrocytogenic	1
Essential	8
Estrogenic	8
Estrogenic?	1
Expectorant	5
Fatal	1
Febrifuge	1
Fibrinolytic	1
Fistula-Preventive	1
Flatugenic	1
FLavor	42
Floral-Inhibitor	1
Fungicide	17
Fungistat	2
Fungitoxic	1
GABA-nergic	1
Gastroprotective	1
Glucosuric	2
Glucosyl-Transferase-Inhibitor	1

Activity	Chemical Count
Glutathione-Depleting	1
Glutathionigenic	1
Goitrogenic	1
Gonadotrophic	2
Gram(+)icide	1
Gram(-)icide	1
Hematopoietic	1
Hemolytic	1
Hemostat	7
Hemostatic	1
Hepatocarcinogenic	2
Hepatomagenic	2
Hepatoprotective	16
Hepatotonic	3
Hepatotoxic	5
Hepatotropic	3
Herbicide	4
HIF-1alpha-Inhibitor	1
Histamine-Inhibitor	2
Histaminic	1

Activity	Chemical Count
HIV-RT-Inhibitor	2
Humectant	1
Hyaluronidase-Inhibitor	3
Hydrocholerectic	1
Hypercholesterolemic	4
Hyperglycemic	2
Hypertensive	4
Hyperthyroid	1
Hyperuricemic	1
Hypnotic	3
Hypoammonemic	1
Hypoarginanemic	1
Hypocalcemic	1
Hypocholesterolemic	21
Hypoglycemic	18
Hypolipidemic	4
Hypotensive	21
Hypothermic	3
Hypouricemic	1
ICAM-1-Inhibitor	3

Activity	Chemical Count
IKK-Inhibitor	2
Ileorelaxant	1
Immunomodulator	10
Immunostimulant	14
Immunosuppressant	3
Inflammatory	1
iNOS-Inhibitor	4
Inotropic	4
Insecticide	3
Insectifuge	10
Insectiphile	4
Insulin-Sparing	2
Insulinase-Inhibitor	2
Insulinogenic	6
Insulinotonic	2
Interferon-Synergist	1
Interferonogenic	2
Interleukin-1-alpha-Inhibitor	1
Interleukin-6-Inhibitor	1
Interleukin-6-mRNA-Inhibitor	1

Activity	Chemical Count
Iodothyronine-Deiodinase-Inhibitor	2
Irritant	16
JNK-Inhibitor	1
Juvabional	3
Keratitigenic	1
Keratolytic	2
Larvostat	4
Laxative	8
Laxative?	1
Leptingenic	1
Leucocytogenic	1
Leukotriene-Inhibitor	2
Lipotropic	3
Lipoxygenase-1-Inhibitor	1
Lipoxygenase-Inhibitor	14
Lithogenic	4
Litholytic	2
Lubricant	3
Lyase-Inhibitor	1
Lymphocytogenic	1

Activity	Chemical Count
MAO-A-Inhibitor	2
MAO-Inhibitor	3
MAPK-Inhibitor	2
Mast-Cell-Stabilizer	1
Memorigenic	1
Memory-Enhancer	1
Metal-Chelator	3
Metal-Chelator (Copper)	2
Metalloproteinase-Inhibitor	2
MMP-9-Inhibitor	3
Monoamine-Precursor	3
Monoaminergic	1
Mucogenic	2
Mucolytic	2
Mucotropic	1
Musculotropic	1
Mutagenic	8
Mycobactericide	2
Myocardiotonic	1
Myoprotective	1

Activity	Chemical Count
Myorelaxant	5
Myostimulant	1
NADH-Oxidase-Inhibitor	2
Narcotic	2
Natriuretic	2
Nematicide	4
Neoplastic	1
NEP-Inhibitor	2
Nephrotoxic	5
Neuroexcitant	1
Neuroinhibitor	1
Neurolytic	1
Neuroparalytic	2
Neuroprotective	4
Neurotoxic	2
Neurotransmitter	1
NF-kB-Inhibitor	5
NO-Genic	2
NO-Inhibitor	6
NO-Synthase-Inhibitor	2

Activity	Chemical Count
Nodulation-Signal	1
Odontolytic	1
Ornithine-Decarboxylase-Inhibitor	7
Osteogenic	1
Osteolytic	1
Oviposition-Stimulant	2
Oxidant	3
Oxidase-Inhibitor	1
P21-Inducer	1
P450-Inducer	1
P450-Inhibitor	1
PAF-Inhibitor	2
Pancreatogenic	2
Paralytic	1
Parasiticide	1
Percutaneostimulant	2
Perfumery	20
Peristaltic	1
Peroxynitrite-Scavenger	1
Pesticide	59

Activity	Chemical Count
PGE2-Inhibitor	1
Phagocytotic	4
Pheromone	1
Phospholipase-Inhibitor	1
Phytoalexin	2
Pigment	1
Piscicide	1
Pituitary-Stimulant	1
PKC-Inhibitor	1
Plasmodicide	1
Polyamine-Synthesis-Inhibitor	2
Potassium-Sparing	1
Preservative	3
Progestational	1
Progesteronigenic	1
Prolactinogenic	1
Proliferant	2
Prooxidant	5
Propepic	5
Prostaglandigenic	5

Activity	Chemical Count
Prostaglandin-Sparer	1
Prostaglandin-Synthesis-Inhibitor	4
Prostaglandin-Synthetase-Inhibitor	1
Protease-Inhibitor	1
Protein-Kinase-C-Inhibitor	4
Protisticide	5
PTK-Inhibitor	3
Purgative	1
Quinone-Reductase-Inducer	6
Radioprotective	2
Refrigerant	1
Renotoxic	1
Respirapalytic	1
Respirotoxic	1
Retinoprotectant Optometry	1
Reverse-Transcriptase-Inhibitor	1
Roborant	1
Rubefacient	1
Scabicide	1
Schizophrenigenic	1

Activity	Chemical Count
Sclerosant	1
Secretagogue	2
Sedative	9
Serotonergic	3
Soap	2
Sodium-Sparing	1
Spermicide	2
Spermigenic	2
Sprout-Inhibitor	1
Stimulant	2
Styptic	1
Succinoxidase-Inhibitor	1
Sunscreen	7
Suppository	1
Surfactant	1
Sweetener	7
Taenicide	1
Teratogenic	3
Teratologic	2
Termiticide	1

Activity	Chemical Count
Testosteronigenic	1
Thymoprotective	1
Thyrotropic	2
Tissue-Thromboplastin-Inhibitor	2
TNF-alpha-Inhibitor	6
TOPO-2-Inhibitor	1
Topoisomerase-I-Inhibitor	6
Topoisomerase-II-Inhibitor	7
Toxic	3
Tranquilizer	3
Transdermal	1
Tremorigenic	1
Tremorilytic	1
Trichomonicide	2
Triglycerigenic	1
Trypanocide	1
Trypsin-Enhancer	1
Tumor-Promoter	1
Tumorigenic	3
Tyrosinase-Inhibitor	7

Activity	Chemical Count
Tyrosine-Kinase-Inhibitor	2
Ubiquiot	7
Ulcerogenic	3
Uricogenic	1
Uricosuric	5
Urinary-Acidulant	1
Urine-Acidifier	1
Urine-Deodorant	1
Uterorelaxant	1
Uterosedative	1
Uterotrophic	3
Varroacide	2
Vasoconstrictor	2
Vasodilator	17
Vasopressor	3
VEGF-Inhibitor	4
Venotonic	1
Verrucolytic	1
Vibriocide	1
Vulnerary	10

Activity	Chemical Count
Xanthine-Oxidase-Inhibitor	11