

Scientific name	analyte(s)	Recommended method	References
<i>Acer campestre</i> L. <i>Acer negundo</i> L. <i>Acer saccharinum</i> L.	hypoglycins	Hypoglycins A and B: GC – MS or LC – MS/MS spectrum (Pubchem). ESI – MS/MS spectra for putative metabolite identification (Hypoglycin B)	Hunger et al., J. Veterinary Internal Medicine vol. 28 (4) 2014 p1289 – 1293 open acces PMC 8457957 Allen F. et al. (hypoglycine B)
<i>Acorus calamus</i> L.	beta-asarone	GC – FID or GC – MS	J. of essential oil composition of <i>Acorus calamus</i> 2016 issn 1041 – 2905 Wei Ji Fang, J. of Chinese Materia Medicine 1/8/14 vol. 29 p764 – 769
<i>Aesculus hippocastanum</i> L.	aescin	spectrofotometriy HPLC TLC – densitometry	Preferred method: Ph. Eur. Ed 9 USP 39: spectofotometric methode p6554 – 6558 Apers, S. et al, "Densitometric thin-layer chromatographic determination of aescin in a herbal medicinal product containing <i>Aesculus</i> and <i>Vitis</i> dry extracts", Journal of Chromatography A 2006, Vol. 1112, issue 1-2, pages 165-170,
<i>Aleurites moluccana</i> (L.) Willd.	(1) phorbol esters (2) eleostearic acid	LC-MS	(1) Vogt et al. J, Chrom A 1999, 855, 563-573. (2) Eleostearine in <i>Aleurites montana</i> : LC-MS method of analysis of the seed lipids, A. Radauz Zeitschrift of Naturforschung 1998 53c (5 and 6) 305 - 310 Lüth et al. Farm acta Helvetica 1984 59(9-10) 242 - 246
<i>Aloe africana</i> Mill. <i>Aloe arborescens</i> Mill. <i>Aloe ferox</i> Mill. <i>Aloe perryi</i> Baker <i>Aloe plicatilis</i> (L.) Mill. <i>Aloe vera</i> (L.) Burm. f.	total anthranoids (calculated as barbaloin)	Ph. Eur. Ed 9	Ph. Eur. ED 9

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<i>Annona muricata</i> L. <i>Annona reticulata</i> L. <i>Annona squamosa</i> L.	acetogenins (acetogenin, annonacine, annonapentacine)	HPLC – UV or HPLC – DLD	P. Champy et al., Quantification in <i>Annona muricata</i> linked to atypical Parkinsonism in Guadeloupe, <i>Movement disorders</i> , 2005, 20(12), 1629-1633 D. Gromek et al., Qualitative ad quantitative evaluation of annonaceous acetogenins by HPLC, <i>Phytochem Anal.</i> ,1994, 5(3), 133-140 P. Champy et al., MALDI-TOF MS profiling of Annonaceous acetogenins in <i>Annona muricata</i> products for human consumption, <i>Molecules</i> , 2009,14,5235-5246
<i>Aphanizomenon flosaquae</i> (L.) Ralfs ex Bornet & Flahault	microcystin and other marine toxins	LC-MS	J. Agricultural Food Chemistry 2015 vol. 63 (4) p10303 – 10312
<i>Artemisia abrotanum</i> L. <i>Artemisia absinthium</i> L. <i>Artemisia capillaris</i> Thunb <i>Artemisia dracunculus</i> L. <i>Artemisia frigida</i> Willd. <i>Artemisia genipi</i> Weber Ex Stechm. <i>Artemisia glacialis</i> L. <i>Artemisia judaica</i> L. <i>Artemisia pontica</i> L. <i>Artemisia umbelliformis</i> Lam. <i>Artemisia vallesiaca</i> All. <i>Artemisia verlotiorum</i> Lamotte <i>Artemisia vulgaris</i> L.	thujone	GC-MS	S. G. Walch et al. Determination of the biological active flavour substances thujone and camphor in foods and medicines containing sage, <i>Chemistry Central Journal</i>
<i>Artocarpus altilis</i> (Parkinson ex F.A.Zorn) Fosberg	lectin	reverse phase HPLC	M. A. Rahman et al., <i>Biochemical and Biophysical Research communications</i> vol. 295 (4) 2002 p1007 – 1013

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<i>Asimina triloba</i> (L.) Dunal	acetogenins (acetogenin, annonacine, annonapentacine)	HPLC – UV or HPLC – DLD	P. Champy et al., Quantification in <i>Annona muricata</i> linked to atypical Parkinsonism in Guadeloupe, <i>Movement disorders</i> , 2005, 20(12), 1629-1633 D. Gromek et al., Qualitative ad quantitative evaluation of annonaceous acetogenins by HPLC, <i>Phytochem Anal.</i> ,1994, 5(3), 133-140 P. Champy et al., MALDI-TOF MS profiling of Annonaceous acetogenins in <i>Annona muricata</i> products for human consumption, <i>Molecules</i> , 2009,14,5235-5246
<i>Baptisia tinctoria</i> (L.) Vent.	cytisine	LC-MS/MS	Simultaneous detection of 22 toxic plant alkaloids (aconitum alkaloids, solanaceous tropane alkaloids, sophora alkaloids, strychnos alkaloids and colchicine) in human urine and herbal samples using liquid chromatography–tandem mass spectrometry, <a href="https://doi.org/10.1016/j.jchromb.2013.10.020">https://doi.org/10.1016/j.jchromb.2013.10.020</a>
<i>Berberis aquifolium</i> Pursh. <i>Berberis aristata</i> D.C. <i>Berberis vulgaris</i> L.	isoquinoline alkaloids (expressed as berberine)	HPLC-DAD	EuPh USP43-NF38 (US Pharmacopoeia)
<i>Borago officinalis</i> L. <i>Borago</i> spp.	pyrrolizidine alkaloids	SPE-LC-MS/MS	Bundesinstitut fur Risikobewertung: <a href="https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids">https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids</a>
<i>Brassica oleracea</i> L.	progoitrin goitrin	UPLC-PAD	Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of <i>Isatis indigotica</i> based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, <i>Int. J. Mol. Sci.</i> 2012, 13, 9035-9050

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<i>Bursera tomentosa</i> (Jacq.) Triana & Planch.	podophyllotoxin and analogues	HPLC-ESI/MS HPLC/DAD/MS LC-ESI/MS/MS	Journal of Ethnopharmacology Volume 120, Issue 3, 8 December 2008, Pages 402-412. Selection methodology with scoring system: Application to Mexican plants producing podophyllotoxin related lignans (M.L. Villarreal et al). Determination of podophyllotoxins and related aryltetralin lignans by HPLC/DAD/MS from Lamiaceae species (B. Pastore et al). Phytochemistry Volume 70, Issue 5, March 2009, Pages 641-649. Phenolic compounds from <i>Bursera simaruba</i> Sarg. bark: Phytochemical investigation and quantitative analysis by tandem mass spectrometry. (M. Maldini et al).
<i>Camellia sinensis</i> (L.) Kuntze	tannins (expressed as epigallocatechin-3-gallate)	HPLC .	USP 39 p 6697 referred to in C91Eur. Ph
<i>Cananga odorata</i> (Lam.) Hook.f. & Thomson	safrole	GC-MS	J. Cosmet Sci 2018 145-156. Rapid method for the gas chromatographic quantitative analysis to determinate safrole in commercial essential oils (Chan SC et al).
<i>Cassia fistula</i> L.	total anthranoids (expressed as sennoside B)	Spectrophotometry (not specific)	<ul style="list-style-type: none"> <li>• Senna leaf, Eur. Ph.</li> <li>• Senna leaf dry extract standardised, Eur. Ph.</li> <li>• Senna pods, Alexandrian, Eur.Ph.</li> <li>• Senna pods, tinnevelly, Eur. Ph.</li> </ul>
<i>Ceanothus americanus</i> L.	peptide alkaloids (a.o. ceanothines, adouetines, frangulanine)	spectrophotometry	EU PH. 10e ed (identification reactions of functional groups) Sreevidya N. et al, "Spectrophotometric method for estimation of alkaloids precipitable with Dragendorff's reagent in plant materials", J AOAC Int. Nov-Dec 2003;86(6):1124-7
<i>Centranthus ruber</i> (L.) DC	valepotriates	HPLC	Max Wichtl. Herbal drugs and phytopharmaceuticals: a handbook for practice on a scientific basis. Europese Pharmacopee R. Bos et al. Journal of Chromatography A vol 967 (1) 2002 p131-146. determination of valepotriates

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<i>Ceterach officinarum</i> DC.	ptaquiloside	TLC- densitometry, HPLC, GC-MS, LC-MS	Bonadies et al 2004. Rapid communication in MS 2004 nr 18 p825 - 828.
<i>Cetraria islandica</i> (L.)	usnic acid	HPLC	Demet Cansaran Duman et al. Journal of Applied Biological Sciences 2 (3): 41-44 2008. Determination of usnic acid content in some Lichen species found in Antolia
<i>Chenopodium vulvaria</i> L.	ascaridole	GC/MS	V. Kandpal et al. Journal of essential oils bearing plants vol 19 2016. GC/MS analysis of seed essential oil of <i>Chenopodium ambrosioides</i> L. collected from Himalayan region. V. Dembitsky et al. Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. 2008 Dec152(2):209-15. Ascaridole and related peroxides from the genus <i>Chenopodium</i> .
<i>Cibotium barometz</i> (L.) J. Sm.	ptaquiloside	TLC- densitometry, HPLC, GC-MS, LC-MS	Bonadies et al 2004. Rapid communication in MS 2004 nr 18 p825 - 828.
<i>Cimicifuga racemosa</i> (L.) Nutt. (= <i>Actaea racemosa</i> L.)	triterpene glycosides (expressed as 27-deoxyactein)	UV spectrophotometry (low specificity)	Black cohosh pharmeuropa 14.2 (april 2002) p353
<i>Cinchona calisaya</i> Wedd. <i>Cinchona lancifolia</i> Mutis <i>Cinchona micrantha</i> Ruiz & Pav. <i>Cinchona nitida</i> Ruiz & Pav. <i>Cinchona officinalis</i> L. <i>Cinchona pitayensis</i> (Wedd.) Wedd. <i>Cinchona pubescens</i> Vahl	quinine	HPLC	Eur. Pharm. 10.0 monograph 01/2011:0174
<i>Citrus aurantium</i> L.	meta-synephrine para-synephrine	LC/MS LC/MS/MS	J. Santana et al. Food chemistry vol 109 (3) 2008 p675-682. Determination of para-synephrine and meta-synephrine positional isomers in bitter orange-containing dietary supplements by LC/UV and LC/MS/MS
<i>Cladonia rangiferina</i> (L.) Weber ex F.H. Wigg.	usnic acid	HPLC	Demet Cansaran Duman et al. Journal of Applied Biological Sciences 2 (3): 41-44 2008. Determination of usnic acid content in some Lichen species found in Antolia

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<i>Clematis armandii</i> Franch. <i>Clematis chinensis</i> Osb. (= <i>Clematis recta</i> L.) <i>Clematis chinensis</i> Retz. <i>Clematis hexapetala</i> L. f.(= <i>Clematis hexasepala</i> DC.) <i>Clematis hexapetala</i> Pall. (= <i>Clematis flammula</i> L.) <i>Clematis mandschurica</i> Rupr. <i>Clematis montana</i> Buch.-Ham. ex DC.	aristolochic acid	LC-MS/MS CZE	Ph. Eur. ED 9 01/2011/20821 (CZE method not in Eur. Ph.)
<i>Clitoria ternatea</i> L.	aristolochic acid	LC-MS/MS CZE	Ph. Eur. ED 9 01/2011/20821 (CZE method not in Eur. Ph.)
<i>Coptis japonica</i> (Thunb.) Makino <i>Coptis teeta</i> Wall. <i>Coptis trifolia</i> (L.) Salisb.	isoquinoline alkaloids (expressed as coptisine)	HPLC/UV LC/MS/MS	Yu Jin Kim et al. <i>Chen phar bull</i> 65 826-832 (2017). Neuroprotective effect of <i>Corydalis ternata</i> extract and its phytochemical quantitative analysis. (HPLC/UV) Guanghai Liu et al. <i>From the Journal Analytical Methods</i> issue 9 2014. The simultaneous determination of berberine, palmatine, coptisine, epiberberine and jatrorrhizine in rat plasma by LC-MS/MS and a pharmacokinetic comparison after the oral administration of <i>Rhizoma coptidis</i> and <i>Jiao-Tai-Wan</i> extract. (LC/MS/MS)
<i>Cordia myxa</i> L.	pyrrolizidine alkaloids	SPE-LC-MS/MS	Bundesinstitut für Risikobewertung: <a href="https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids">https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids</a>
<i>Corydalis solida</i> (L.) Clairv.	alkaloids	HPLC-DAD Near-IR Spectroscopy	Wu, H. et al, "Influence of Vinegar and Wine Processing on the Alkaloid Content and Composition of the Traditional Chinese Medicine <i>Corydalis Rhizoma</i> (Yanhusuo)", <i>Molecules</i> , 2014, 19, 11487-11504 Zhu, W. et al, "Rapid Quality Identification of Decoction Pieces of Crude and Processed <i>Corydalis Rhizoma</i> by Near-Infrared Spectroscopy Coupled with Chemometrics", <i>journal of analytical Methods in Chemistry</i> , 2021, Article ID 1936057, 11 pages, 2021

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<i>Cosciniium fenestratum</i> (Goetgh.) Colebr.	isoquinoline alkaloids (expressed as berberine)	TLC	French Ph, 2009
<i>Cotinus coggygia</i> Scop	ptaquiloside	TLC- densitometry, HPLC, GC-MS, LC-MS	Bonadies et al 2004. Rapid communication in MS 2004 nr 18 p825 - 828.
<i>Crataegus azarolus</i> L. <i>Crataegus curvisepala</i> Lindm. <i>Crataegus laevigata</i> (Poiret) DC. <i>Crataegus monogyna</i> Jacq. <i>Crataegus pentagyna</i> Waldst. & Kit.	(1) oligomeric procyanidins (2) flavonoids	(1) Spectrophotometry according to Eur. Ph. : - Hawthorn leaf and flower: flavonoids expressed as hyperoside - Hawthorn berries: berries contain procyanidins, expressed as cyanidine chloride, and flavonoids <i>Low specificity components, difficult to determine if combined with other plants.</i> (2) HPLC with LC-UV for leaf and powder, according to USP 39: makes the difference between C-glycosides expressed as vitexine and O-glycosides expressed as hyperoside.	(1) Eur. Ph. ED 7 volume 1 (p1147 01/2010/1432, p1148 01/2010/1865, p1149-1150 01/2011/1202) (2) USP 39 p6709
<i>Descurainia sophia</i> (L.) Webb ex Prantl	progoitrin goitrin	UPLC-PAD	Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of <i>Isatis indigotica</i> based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, Int. J. Mol. Sci. 2012, 13, 9035-9050
<i>Desmodium adscendens</i> DC.	(1) dimethyl-tryptamine derivatives (2) beta-carboline type alkaloids (harmene type)	SPE-HPLC-DAD	Santos, M.C. et al, "Determination of Tryptamines and $\beta$ -Carbolines in Ayahuasca Beverage Consumed During Brazilian Religious Ceremonies", Journal of AOAC International Vol. 100, No. 3, 2017, 820-824
<i>Dioscorea alata</i> L.	alkaloids (disocorine en dihydro-disocorine)	TLC- densitometry	Journal of Chemical and Pharmaceutical Research, 2014, 6(4):803-806

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<i>Diplotaxis tenuifolia</i> (L.) DC	progoitrin goitrin	UPLC-PAD	Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of <i>Isatis indigotica</i> based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, <i>Int. J. Mol. Sci.</i> 2012, 13, 9035-9050
<i>Drosera anglica</i> Huds. <i>Drosera peltata</i> Thunb. <i>Drosera ramentacea</i> Burch ex DC <i>Drosera rotundifolia</i> L. <i>Drosera intermedia</i> Hayne	naphthoquinons	HPLC Reversed-phase high performance liquid chromatography	Journal of Chromatography B Volume 842, Issue 1, 14 September 2006, Pages 28-35. Using of liquid chromatography coupled with diode array detector for determination of naphthoquinones in plants and for investigation of influence of pH of cultivation medium on content of plumbagin in <i>Dionaea muscipula</i> (P. Babula et al). <i>Journal of Liquid Chromatography &amp; Related Technologies</i> , Volume 21, 1998 - Issue 20 Determination of Naphthoquinones in <i>Droserae herba</i> by Reversed-Phase High Performance Liquid Chromatography (L. Krenn et al).
<i>Dysphania botrys</i> (L.) Mosyakin & Clemants	ascaridole	GC/MS	V. Kandpal et al. <i>Journal of essential oils bearing plants</i> vol 19 2016. GC/MS analysis of seed essential oil of <i>Chenopodium ambrosioides</i> L. collected from Himalayan region. V. Dembitsky et al. <i>Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub.</i> 2008 Dec152(2):209-15. Ascaridole and related peroxides from the genus <i>Chenopodium</i> .
<i>Echium plantagineum</i> L.	pyrrolizidine alkaloids	SPE-LC-MS/MS	Bundesinstitut fur Risikobewertung: <a href="https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids">https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids</a>
<i>Eruca vesicaria</i> L. Cav.	progoitrin goitrin	UPLC-PAD	Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of <i>Isatis indigotica</i> based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, <i>Int. J. Mol. Sci.</i> 2012, 13, 9035-9050



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<i>Foeniculum vulgare</i> Mill.	estragole	Determination of the quantity of essential oil (steam distillation) in the extract or powder, followed by the determination of estragole by gas chromatography on the essential oil --> Calculation of the estragole quantity in the extract or powder.	Fennel bitter, fennel sweet Eur. Ph.
<i>Frangula alnus</i> Mill.	total anthranoids (expressed as glucofrangulin A)	Spectrophotometry UV	Frangula bark, Eur. Ph.
<i>Frangula purshiana</i> Cooper	total anthranoids (expressed as cascaroside A)	Spectrophotometry UV	Cascara, Eur. Ph.
<i>Galega officinalis</i> L.	galegine peganine	galegine: LC-MS/MS peganine (vasicine): GC and MS	galegine: Oldham et al: Weed Science 59 3 2011 p349-352 Laakso et al: Journal Chromatografy A 1990 volume 505 2 p424-428. Described in P Harmala (contains next to harman alkaloids also peganine)
<i>Ginkgo biloba</i> L.	(1) flavonol glycosides (2) terpene lactones	(1) HPLC + UV detector (2) HPLC + RI detector	Ginkgo dry extract standardised, Pharmeuropa vol 11 n°2 199 333-336
<i>Glycine max</i> (L.) Merrill	isoflavones (expressed as glycoside of the main component)	HPLC + UV detection (determination of aglycones and glycosides, quick method) HPLC/UV-VIS DAD LC-MS/MS	Apers, S. Journal of chromatography A , 1038 (2004): 107-112 Song T. et al. (1998) Am. J. Clin. Nutr.68 : 1474S-9S USP-NF 2018, Powdered Soy Isoflavones Extract Klejduš, B., Vacek, J., Benešová, L. et al. Anal Bioanal Chem (2007) 389: 2277 Kanumuri S.R. Raju et al, Phytochemistry Reviews, 2015, 14 (3) 469-498
<i>Glycyrrhiza glabra</i> L. <i>Glycyrrhiza uralensis</i> Fischer ex De Candoll	glycyrrhizinic acid	HPLC + UV detection	Liquorice root , Eur. Ph.

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<i>Gossypium herbaceum</i> L. <i>Gossypium hirsutum</i> L.	gossypol	HPLC-UV	Y. Cai et al, Journal of Biosciences, March 2004, vol 29, pp 67-71; <a href="https://doi.org/10.1007/BF02702563">https://doi.org/10.1007/BF02702563</a>
<i>Harpagophytum procumbens</i> (Burch.) DC. <i>Harpagophytum zeyheri</i> Decne.	total iridoids (calculated as harpagoside)	HPLC + UV detection	Devil's claw root, Eur. Ph.
<i>Humulus lupulus</i> L.	8-prenyl-naringenine	HPLC + UV detection	Possemiers S. et al. , J. Agric. Food chem., 2005, 53, 6281-6288
<i>Hydrastis canadensis</i> L.	isoquinoline alkaloids (expressed as berberine)	HPLC according to USP	USP p 6692
<i>Hypericum perforatum</i> L.	hypericin	HPLC + UV detection	St. John's wort dry extract quantified, Pharmaeuropa vol 16 n°1, January 2004: 97-9
<i>Indigofera tinctoria</i> L.	indospicine	HPLC-UV	Extraction: D.R. Gardner, F. Riet-Correa, International Journal of Poisonous Plant Research vol 1, Fall 2011 . Determination: Pollit, S. et al, Nat toxins 1999, 7(6), 223-240
<i>Isatis tinctoria</i> L.	(1) progoitrine, goitrine (2) indirubine	(1) UPLC-PAD (2) HPLC	(1) Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of <i>Isatis indigotica</i> based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, Int. J. Mol. Sci. 2012, 13, 9035-9050 (2) Zhigang Hu et al, Rapid Identification and Verification of Indirubin-Containing Medicinal Plants, Evidence-Based Complementary and Alternative Medicine, Volume 2015 , Article ID 484670

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<i>Jateorhiza palmata</i> (Lam.) Miers	isoquinoline alkaloids (expressed as berberine)	TLC	French Ph, 2009
<i>Lawsonia inermis</i> L.	naphthoquinons	HPLC Reversed-phase high performance liquid chromatography	Journal of Chromatography B Volume 842, Issue 1, 14 September 2006, Pages 28-35. Using of liquid chromatography coupled with diode array detector for determination of naphthoquinones in plants and for investigation of influence of pH of cultivation medium on content of plumbagin in <i>Dionaea muscipula</i> (P. Babula et al). Journal of Liquid Chromatography & Related Technologies Volume 21, 1998 - Issue 20 Determination of Naphthoquinones in <i>Droserae herba</i> by Reversed-Phase High Performance Liquid Chromatography (L. Krenn et al).
<i>Lepidium meyenii</i> Walp. (= <i>Lepidium peruvianum</i> G. Chacón de Popovici)	alkaloids [lepidilines A, B, C, macaridin, MTCA = 1-methyl-tetrahydro-betacarbolin, lepidines A-F].	spectrophotometry	Gan jin et al, "Correlations between Antioxidant Activity and Alkaloids and Phenols of Maca ( <i>Lepidium meyenii</i> )", Journal of Food Quality, 2017, Article ID 3185945
<i>Ligusticum striatum</i> DC.	(1) alkaloids (2) progesterons in essential oil (recommendation Plants Committee 19-02-2019)	(1) HPLC-DAD-MS (2) UHPLC-QTOF-MS	(1) Song-Lin Li et al, <i>Planta Med</i> 2003: 69:445-451 (2) Dan Dan Yin et al, <i>Journal of Separation Science</i> 42 (19) 3043–3160 (2019)
<i>Lilium brownii</i> F.E. Br. ex Miellez	alkaloids (steroidal glycoalkaloids)	LC-MS/MS	NATURAL PRODUCTS CHEMISTRY OF LILIIUM LONGIFLORUM, Munafo, J.P. et al, Rutgers University Libraries, 2011; John P. Munafo Jr. and Thomas J. Gianfagna*, <i>J. Agric. Food Chem.</i> , 2011, 59 (3), pp 995–1004

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<i>Linaria vulgaris</i> Mill.	alkaloids	HPLC	Sing, S.E. et al, "Assessing Environmental Risks for Established Invasive Weeds: Dalmatian ( <i>Linaria dalmatica</i> ) and Yellow ( <i>L. vulgaris</i> ) Toadflax in North America", <i>Int J Environ Res Public Health</i> . 2011 Jul; 8(7): 2828–2853 Subramanya, M.D. "Simultaneous determination of vasicine and vasicinone by High-performance liquid chromatography in roots of eight <i>Sida</i> species", <i>Ayu</i> 2016 37(2): 135-139
<i>Lobaria pulmonaria</i> (L.) Hoffm.	usnic acid	HPLC	Demet Cansaran Duman et al. <i>Journal of Applied Biological Sciences</i> 2 (3): 41-44 2008. Determination of usnic acid content in some Lichen species found in Antolia
<i>Lupinus</i> spp.	total alkaloids anagyrene	Capillary GLC (1992) GC-MS	Lee 2007: <i>Journal of Agricultural and Food Chemistry</i> , vol. 55 nr 26 p10649-10655 Magdalena Crop: genetic resources in kropp resolution december 2017, vol. 64 issue 8 p1853-1860 --> 6 major alkaloids (including lupaline).
<i>Marchantia polymorpha</i> L.	lectin	Affinity Chromatography (isolation)	J. Pohleven et al, in book <i>Affinity Chromatography</i> March 2012 10,5772/36578 Determination to be decided depending on the type of lectin
<i>Matricaria recutita</i> L. (= <i>Matricaria chamomilla</i> L., <i>Chamomilla recutita</i> (L.) Rauschert)	(1) alpha-bisabolol (2) apigenine-7-glucoside	CG HPLC + UV detection	Matricaria oil, Eur. Ph. Matricaria flower, Eur. Ph.
<i>Medicago sativa</i> L.	isoflavones (expressed as glycoside of the main component)	HPLC-DAD LC-MS/MS	Apers, S. <i>Journal of chromatography A</i> , 1038 (2004): 107-112 João C.M. Barreira et al, <i>Phytochemistry</i> 116 (2015) 230–238 Kanumuri S.R. Raju et al, <i>Phytochemistry Reviews</i> , 2015, 14 (3) 469-498

Scientific name	analyte(s)	Recommended method	References
<i>Mesembryanthemum crystallinum</i> L.	mesembrine type alkaloids	HPLC-UV HPLC-UV-MS	Srinivas Patnala, Isadore Kanfer, HPLC Analysis of Mesembrine-Type Alkaloids in <i>Sceletium</i> Plant Material Used as An African Traditional Medicine J Pharm Pharmaceut Sci (www.cspCanada.org) 13(4) 558 - 570, 2010 Patnala S., & Kanfer I. (2015). Medicinal use of <i>Sceletium</i> : Characterization of Phytochemical Components of <i>Sceletium</i> Plant Species using HPLC with UV and Electrospray Ionization – Tandem Mass Spectroscopy. Journal of Pharmacy & Pharmaceutical Sciences, 18(4), 414-423.
<i>Momordica balsamina</i> L. <i>Momordica charantia</i> L.	lectin	Affinity Chromatography (isolation)	J. Pohleven et al, in book Affinity Chromatography March 2012 10,5772/36578 Determination to be decided depending on the type of lectin
<i>Mucuna pruriens</i> (L.) DC.	(1) harman alkaloids (2) levo-dopa (3) lectin (4) non proteinogenic amino acids	(1) SPE – HPLC – DAD (2) HPLC-FD (3) Affinity chromatography (4) Examples non-proteinogenic amino acids	(1) Santos, M.C. et al, "Determination of Tryptamines and $\beta$ -Carbolines in Ayahuasca Beverage Consumed During Brazilian Religious Ceremonies", Journal of AOAC International Vol. 100, No. 3, 2017, 820-824 (2) Soumyanath, AM et al, "Analysis of Levodopa Content in Commercial <i>Mucuna pruriens</i> Products Using High-Performance Liquid Chromatography with Fluorescence Detection"; THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE Volume 24, Number 2, 2018, pp. 182–186 (3) J. Pohleven et al, in book Affinity Chromatography March 2012 10,5772/36578; Determination to be decided depending on the type of lectin (4) Huang, T. et al, "Non-protein amino acids in plant defense against insect herbivores: Representative cases and opportunities for further functional analysis", Phytochemistry 72 (2011) 1531-1537
<i>Nasturtium officinale</i> R. Brown	pulegone	GC-FID	EUPh versie 9

Scientific name	analyte(s)	Recommended method	References
<i>Ocimum basilicum</i> L. <i>Ocimum gratissimum</i> L. <i>Ocimum tenuiflorum</i> L.	estragole	GC-FID	EU Ph. 9, monograph 856
<i>Ononis spinosa</i> L. <i>Ononis spinosa</i> subsp <i>hircina</i> (Jacq.) Gams	isoflavones (expressed as glycoside of the main component)	HPLC/UV-VIS DAD LC-MS/MS	Apers, S. Journal of chromatography A , 1038 (2004): 107-112 Klejduš, B., Vacek, J., Benešová, L. et al. Anal Bioanal Chem (2007) 389: 2277 Pietta, P., Journal of Chromatography 1990, 513:397-400 Kanumuri S.R. Raju et al, Phytochemistry Reviews, 2015, 14 (3) 469-498
<i>Ophioglossum vulgatum</i> L.	ptaquiloside	TLC- densitometry, HPLC, GC-MS, LC-MS	Bonadies et al 2004. Rapid communication in MS 2004 nr 18 p825 - 828.
<i>Padus avium</i> var. <i>avium</i>	hydrogen cyanide equivalents (free and bound)	ISO standardised kit method	M. Rezaul Haque, Food Chemistry Vol 77, issue 1 , 2002, pp 107-114 ; Kit according to ISO-standard (e.g. ISO 6703)
<i>Parmelia saxatilis</i> (L.) Ach.	usnic acid	HPLC	Demet Cansaran Duman et al. Journal of Applied Biological Sciences 2 (3): 41-44 2008. Determination of usnic acid content in some Lichen species found in Antolia
<i>Phellodendron amurense</i> Rupr.	isoquinoline alkaloids (expressed as berberine)	TLC	French Ph, 2009
<i>Picramnia antidesma</i> Sw.	total anthranoids (expressed as cascaroside A)	Spectrophotometry UV	Cascara, Eur. Ph.
<i>Prunus dulcis</i> (Mill.) D. A. Webb	hydrogen cyanide equivalents (free and bound)	ISO standardised kit method	M. Rezaul Haque, Food Chemistry Vol 77, issue 1 , 2002, pp 107-114 ; Kit according to ISO-standard (e.g. ISO 6703)

Scientific name	analyte(s)	Recommended method	References
<i>Pueraria montana</i> var. <i>lobata</i> (Willd.) Sanjappa & Pradeep <i>Pueraria tuberosa</i> (Willd.) DC	isoflavones (expressed as glycoside of the main component)	HPLC-DAD	EUPh 9.7
<i>Pulmonaria officinalis</i> L.	pyrrolizidine alkaloids	SPE-LC-MS/MS	Bundesinstitut für Risikobewertung <a href="https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids">https://www.bfr.bund.de/de/suche.html?search%5Bquery%5D=pyrrolizidine+alkaloids</a>
<i>Rhamnus alpina</i> L. <i>Rhamnus cathartica</i> L.	total anthranoids (expressed as glucofranguline A equivalents)	Spectrophotometry UV	Frangula bark, Eur. Ph.
<i>Rheum australe</i> D. DON	(1) total anthranoids (expressed as rhein) (2) rhaponticosides	(1) Spectrophotometry UV (2) HPLC-ESI/MS	(1) Rhubarb, Eur. Ph. (2) Eur. Ph 10.0 "Rhei Radix" (qualitative) Feng, JF et al, "Comparative analysis of the major constituents in three related polygonaceous medicinal plants using pressurized liquid extraction and HPLC-ESI/MS" Anal. Methods Vol. 8 Issue 7 pages 1557-1564
<i>Rheum x hybridum</i> Murray <i>Rheum officinale</i> Baill <i>Rheum palmatum</i> L. <i>Rheum rhabarbarum</i> L. <i>Rheum rhaponticum</i> L.	total anthranoids (expressed as rhein)	Spectrophotometry UV (low specificity, determination of some anthranoids of other origin, except c-glucosides - another hydrolysis method is needed)	Rhubarb, Eur. Ph.
<i>Roccella phycopsis</i> Ach.	usnic acid	HPLC	Demet Cansaran Duman et al. Journal of Applied Biological Sciences 2 (3): 41-44 2008. Determination of usnic acid content in some Lichen species found in Antolia

Scientific name	analyte(s)	Recommended method	References
<i>Rubia cordifolia</i> L.	lucidin	HPLC-UV/DAD	I. Boldiz'ar et al, Identification and quantification of the constituents of madder root by gas chromatography and high-performance liquid chromatography, Journal of Chromatography A Volume 1133, Issues 1–2, 10 November 2006, Pages 259-274 Zuzana Bosáková Jan Peršl Alexandr Jegorov ; Determination of Lucidin in <i>Rubia tinctorum</i> Aglycones by an HPLC Method with Isocratic Elution, Journal of High Resolution Chromatography Volume23, Issue10, 2000, Pages 600-602
<i>Rumex acetosa</i> L. <i>Rumex acetosella</i> L. <i>Rumex alpinus</i> L. <i>Rumex conglomeratus</i> Murray <i>Rumex crispus</i> L. <i>Rumex longifolius</i> DC. <i>Rumex obtusifolius</i> L. <i>Rumex patienta</i> L. <i>Rumex sanguineus</i> L.	total anthranoids (expressed as rhein)	Spectrophotometry UV	Rhubarb, Eur. Ph.
<i>Salix alba</i> L. <i>Salix caprea</i> L. <i>Salix fragilis</i> L. <i>Salix pentandra</i> L. <i>Salix purpurea</i> L.	salicin	HPLC-DAD	EuPh 9.7
<i>Sambucus nigra</i> L.	hydrogen cyanide equivalents (free and bound)	ISO standardised kit method	M. Rezaul Haque, Food Chemistry Vol 77, issue 1 , 2002, pp 107-114 ; Kit according to ISO-standard (e.g. ISO 6703)
<i>Scutellaria lateriflora</i> L.	furano neo-clerodanes	HPLC – UV or HPLC – UV/MS or HPLC – DAD	J. of Asian Nat. Prod. Research 12 2010 (10) p 859 – 864 Yao et al. Plantamedica 2011 vol. 77 (4) p 383 – 393



Scientific name	analyte(s)	Recommended method	References
<i>Senna alexandrina</i> Mill. [= <i>Cassia acutifolia</i> Delile, <i>Cassia alexandrina</i> (Garsault) Thell., <i>Cassia angustifolia</i> M.Vahl, <i>Cassia senna</i> L., <i>Senna acutifolia</i> (Delile) Batka, <i>Senna alexandrina</i> Garsault, <i>Senna angustifolia</i> (Vahl) Batka] <i>Senna italica</i> Mill. <i>Senna obtusifolia</i> (L.) H.S.Irwin & Barneby <i>Senna occidentalis</i> (L.) Link <i>Senna tora</i> (L.) Roxb.	total anthranoids (expressed as sennoside B)	Spectrophotometry (low specificity, determination of some anthranoids of other origin, except c-glucosides - another hydrolysis method is needed)	<ul style="list-style-type: none"> <li>• Senna leaf, Eur. Ph.</li> <li>• Senna leaf dry extract standardised, Eur. Ph.</li> <li>• Senna pods, Alexandrian, Eur. Ph.</li> <li>• Senna pods, tinnevelly, Eur. Ph.</li> </ul>
<i>Serenoa repens</i> (W. Bartram) Small [= <i>Serenoa serrulata</i> (Michx.) G. Nicholson; <i>Serenoa serrulata</i> (Michx.) Hook.f. ex B.D.Jacks.; <i>Sabal serrulata</i> (Michx.) Schult.f.]	fat-soluble components	GC	Saw palmetto fruit, Eur. Ph.
<i>Sisymbrium officinale</i> (L) Scop. <i>Erysimum officinale</i> L	cardiotonic steroid glycosides (a.o. helveticoside, corchoroside A)	(1) HPLC (2) LC-ESI-MS/MS	<p>info active ingredients and toxicology: Braun, S. &amp; Melzig, M.F., "Wegrauke, <i>Sisymbrium officinale</i> (L.) Scop.", <i>Zeitschrift für Phytotherapie</i> 2020; 41: 151-156.</p> <p>(1) Goda, Y. et al, "Identification and Analyses of Main Cardiac Glycosides in <i>Corchorus olitorius</i> Seeds and Their Acute Oral Toxicity to Mice", <i>Food Hygiene and Safety Science (Shokuhin Eiseigaku Zasshi)</i>, Volume 39, Issue 4, 256-265 (1998)</p> <p>(2) Grosa G. et al, "LC-ESI-MS/MS characterization of strophanthin-K", <i>Journal of Pharmaceutical and Biomedical Analysis</i> 38 (2005) 79-86</p>
<i>Sorbus domestica</i> L.	(1) cyanogene glycosiden (amygdaline) (2) parasorbic acid,	(1) ISO standardised kit method (2) GC-MS	<p>(1) M. Rezaul Haque, <i>Food Chemistry</i> Vol 77, issue 1, 2002, pp 107-114 ; Kit according to ISO-standard (e.g. ISO 6703)</p> <p>(2) Yusei Kashima et al, <i>Insecticidal Effect and Chemical Composition of the Volatile Oil from <i>Bergenia ligulata</i></i>, <i>J. Agric. Food Chem.</i> 2011, 59, 7114-7119</p>

Scientific name	analyte(s)	Recommended method	References
<i>Sorghum bicolor</i> (L.) Moench	hydrogen cyanide equivalents (free and bound)	ISO standardised kit method	M. Rezaul Haque, Food Chemistry Vol 77, issue 1 , 2002, pp 107-114 ; Kit according to ISO-standard (e.g. ISO 6703)
<i>Spatholobus suberectus</i> Dunn.	isoflavones (expressed as glycoside of the main component)	RP-HPLC LC-MS/MS LC-QTOF-MS	Apers, S. Journal of chromatography A , 1038 (2004): 107-112 Sang Hee Sim, Phytotherapy Research (2011) 25 (4) 615-618 Kanumuri S.R. Raju et al, Phytochemistry Reviews, 2015, 14 (3) 469-498 Cheng XL, J Chromatogr A. 2011 1218(34):5774-86
<i>Styphnolobium japonicum</i> (L.) Schott <i>Sophora japonica</i> L.	alkaloids (e.g. cytisin, methylcytisin)	LC-MS/MS; GC-MS	Simultaneous detection of 22 toxic plant alkaloids (aconitum alkaloids, solanaceous tropane alkaloids, sophora alkaloids, strychnos alkaloids and colchicine) in human urine and herbal samples using liquid chromatography–tandem mass spectrometry, <a href="https://doi.org/10.1016/j.jchromb.2013.10.020">https://doi.org/10.1016/j.jchromb.2013.10.020</a> ; Alkaloid variation in New Zealand kowhai, Sophora species, O. Mc Dougal et al, Phytochemistry 118 (2015) 9-16
<i>Syzygium jambos</i> (L.) Alston	hydrogen cyanide equivalents (free and bound)	ISO standardised kit method	M. Rezaul Haque, Food Chemistry Vol 77, issue 1 , 2002, pp 107-114 ; Kit according to ISO-standard (e.g. ISO 6703)
<i>Tanacetum vulgare</i> L.	thujone	GC-MS	S. G. walch et al. Determination of the biological active flavour substances thujone and camphor in foods and medicines containing sage Chem Cent J. 2011 Jul 21;5:44
<i>Thalictrum flavum</i> L.	isoquinoline alkaloids (expressed as berberine)	TLC	French Ph, 2009
<i>Thlaspi arvense</i> L.	progoitrin goitrin	UPLC-PAD	Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of <i>Isatis indigotica</i> based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, Int. J. Mol. Sci. 2012, 13, 9035-9050

Scientific name	analyte(s)	Recommended method	References
<i>Tribulus terrestris</i> L.	saponins (a.o. protodioscin, prototribestin en dioscin), expressed as dioscin	HPLC-UV	A. Ivanova et al, Method for Screening of Steroidal Saponins and Rutin as Biologically Active Compounds in Tribulus Terrestris L., Biotechnology & Biotechnological Equipment, 24:sup1, 129-133
<i>Trichilia catigua</i> A. Juss.	tropane alkaloids	HPLC-MS	Kletter C. et al, Morphological, chemical and functional analysis of Catuaba preparations, Planta Med 2004, 70: 993-1000
<i>Trichosanthes kirilowii</i> Maxim.	trichosanthine	Spectrophotometry	<u>sample preparation</u> : Chow, Lu-Ping et al, "Purification, characterization and molecular cloning of trichoanguin, a novel type I ribosome-inactivating protein from the seeds of Trichosanthes anguina" Biochem. J. (1999) 338, 211-219 <u>analysis</u> : Li, Yan Ping et al, "Effects of PEGylation on the Lowry method for the content determination of trichosanthin", African Journal of Pharmacy and Pharmacology Vol. 6(38), pp. 2724-2728, 15 October, 2012
<i>Trifolium arvense</i> L. <i>Trifolium campestre</i> Schreb. <i>Trifolium pratense</i> L. <i>Trifolium repens</i> L.	isoflavones (expressed as glycoside of the main component)	HPLC/UV-VIS DAD LC-MS/MS	Apers, S. Journal of chromatography A , 1038 (2004): 107-112 Klejduš, B., Vacek, J., Benešová, L. et al. Anal Bioanal Chem (2007) 389: 2277 USP-NF 2019, Red clover Kanumuri S.R. Raju et al, Phytochemistry Reviews, 2015, 14 (3) 469-498
<i>Tropaeolum majus</i> L. <i>Tropaeolum minus</i> L.	progoitrin goitrin	UPLC-PAD	Yan-Hong Shi et al, Quantitative and Chemical Fingerprint Analysis for the Quality Evaluation of Isatis indigotica based on Ultra-Performance Liquid Chromatography with Photodiode Array Detector Combined with Chemometric Methods, Int. J. Mol. Sci. 2012, 13, 9035-9050

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<i>Usnea barbata</i> (L.) Weber ex F.H.Wigg. <i>Usnea longissima</i> Ach. <i>Usnea plicata</i> Wiggers	usnic acid	HPLC	Demet Cansaran Duman et al. Journal of Applied Biological Sciences 2 (3): 41-44 2008. Determination of usnic acid content in some Lichen species found in Antolia
<i>Valeriana jatamansi</i> Jones [= <i>Valeriana wallichii</i> DC.] <i>Valeriana officinalis</i> L.	valepotriates	HPLC	Max Wichtl. Herbal drugs and phytopharmaceuticals: a handbook for practice on a scientific basis. Europese Pharmacopee R. Bos et al. Journal of Chromatography A vol 967 (1) 2002 p131-146. determination of valepotriates
<i>Zanthoxylum acanthopodium</i> DC. <i>Zanthoxylum americanum</i> Mill. <i>Zanthoxylum armatum</i> DC.	alkaloids	Benzophenanthridine alkaloids: HPLC – UV/ESI – MS/MS	J. BMC alternative medicine 2017 vol. 17 (1) p460