Safety Assessment of *Houttuynia cordata*-Derived Ingredients as Used in Cosmetics

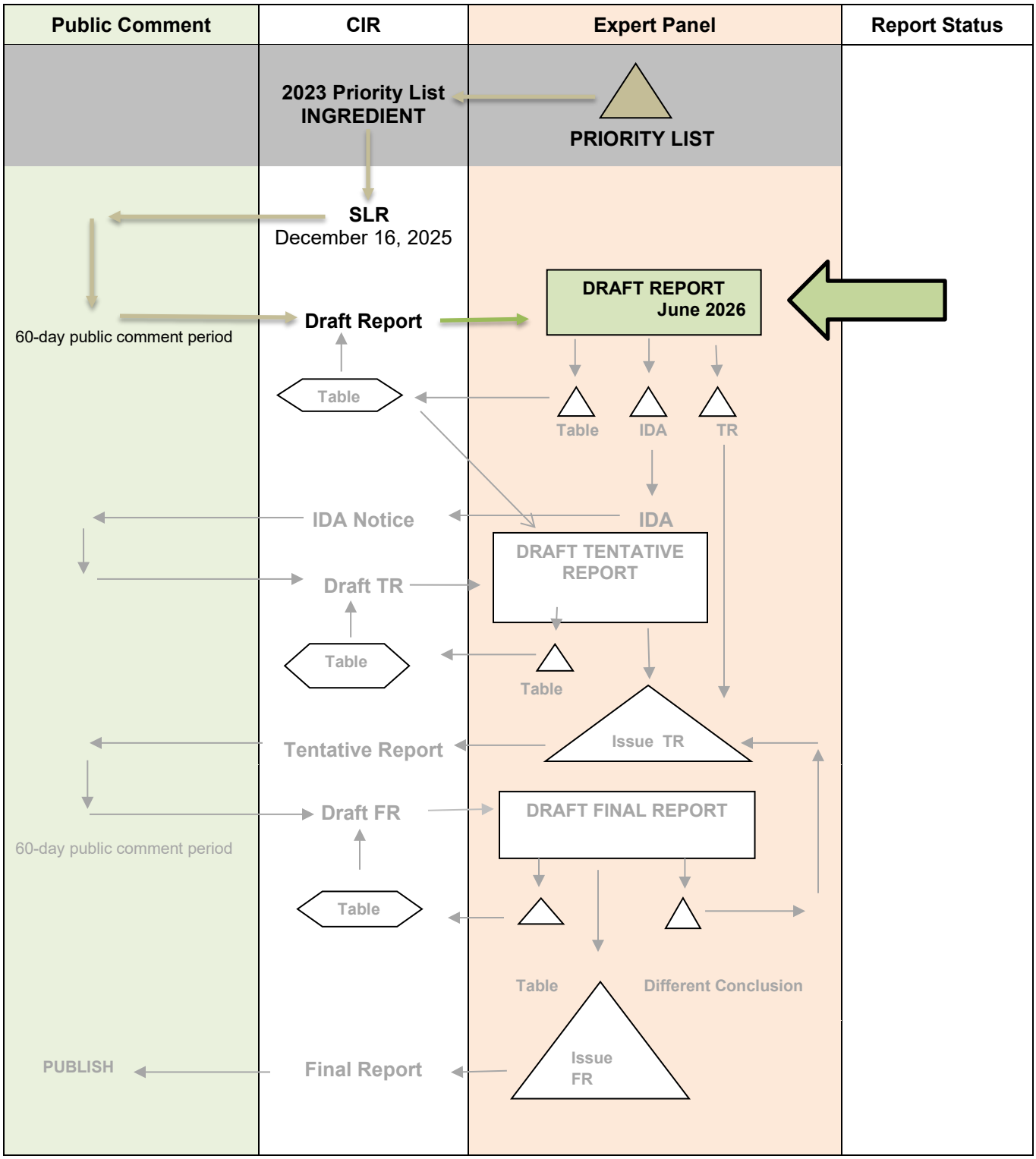
Status:	Draft Report for Panel Review
Release Date:	May 22, 2026
Panel Meeting Date:	June 15 - 16, 2026

The Expert Panel for Cosmetic Ingredient Safety members are: Chair, Wilma F. Bergfeld, M.D., F.A.C.P.; Donald V. Belsito, M.D.; Bruce A. Brod, M.D., M.H.C.I., F.A.A.D.; Samuel M. Cohen, M.D., Ph.D.; Curtis D. Klaassen, Ph.D.; Allan E. Rettie, Ph.D.; David Ross, Ph.D.; Paul W. Snyder, D.V.M., Ph.D.; and Susan C. Tilton, Ph.D. The Cosmetic Ingredient Review (CIR) Executive Director is Bart Heldreth, Ph.D., and the Senior Director is Monice Fiume, M.B.A. This safety assessment was prepared by Litta Paulson, M.P.H., Scientific Analyst/Writer, CIR.

555 13th Street, NW, Suite 300W, Washington, DC 20004
cirinfo@cir-safety.org

SAFETY ASSESSMENT FLOW CHART

INGREDIENT/FAMILY *Houttuynia cordata*-Derived Ingredients
MEETING June 2026



Cosmetic Ingredient Review

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Memorandum

To: Expert Panel for Cosmetic Ingredient Safety Members and Liaisons
From: Litta Paulson, M.P.H., Scientific Analyst/Writer, CIR
Date: May 22, 2026
Subject: Safety Assessment of *Houttuynia cordata*-Derived Ingredients

Enclosed is the Draft Report on the Safety Assessment of *Houttuynia cordata*-Derived Ingredients as Used in Cosmetics. It is identified as *report_HouttuyniaCordata_062026* in the pdf document. The SLR was announced December 16, 2025; accordingly, this is the first time the Panel is reviewing this report on the following 6 ingredients:

Houttuynia Cordata Extract	Houttuynia Cordata Leaf Water
Houttuynia Cordata Flower/Leaf/Stem Water	Houttuynia Cordata Powder
Houttuynia Cordata Leaf Extract	Houttuynia Cordata Water

In our analysis of each product reported in the RLD with a categorization of "(17) Other preparations (i.e., those preparations that do not fit another category)," several products containing Houttuynia Cordata Extract were co-categorized as "(03) Eye makeup preparations (other than children's eye makeup preparations)," "(06) Hair preparations (non-coloring)," or "(14) Skin care preparations (creams, lotions, powder, and sprays)." For a few of the remaining products, the product names thereof were useful in determining the product type. Several were eye and face patches, face masks, eye rollers, a serum, and a soothing cream. Information reported for some of the "(17) Other preparations," suggests that those submitted products might not be considered to be cosmetic products in the US. We have sent a request to our colleagues in the FDA's OCAC for clarification. One product containing Houttuynia Cordata Powder, categorized as "(17) Other preparations (i.e., those preparations that do not fit another category)" was a face mask.

Results of a 2025 concentration of use survey using FDA cosmetic product categories under MoCRA were received and incorporated (*data1_HouttuyniaCordata_062026*). In addition, since the issuing of the Scientific Literature Review (SLR), the following data were received, and have been incorporated into the report:

- HRIPT data on an emulsion containing 0.0048% Houttuynia Cordata Extract (*data2_HouttuyniaCordata_062026*)
- Summary data on Houttuynia Cordata Extract (*data3_Houttuynia Cordata_062026*)
    - Method of manufacture
    - Composition and impurities
    - In vitro phototoxicity
- Summary data on Houttuynia Cordata Extract (*data4_HouttuyniaCordata_062026*)
    - Chemical properties
    - Method of manufacture
    - Composition and impurities
    - In vitro phototoxicity
    - In vitro dermal irritation
    - HRIPT

Other information included in this packet includes:

- comments on the Scientific Literature Review (SLR) from Council (*PCPCcomments_HouttuyniaCordata_062026*)
- response to comments on the SLR (*response-PCPCcomments_HouttuyniaCordata_062026*)
- flow chart (*flow_HouttuyniaCordata_062026*)
- report history (*history_HouttuyniaCordata_062026*)
- search strategy (*search_HouttuyniaCordata_062026)*
- data profile (*dataprofile_HouttuyniaCordata_062026)*

If no further data are needed to reach a conclusion of safety, the Panel should formulate a Discussion and issue a Tentative Report. However, if additional data are required, the Panel should be prepared to identify those needs and issue an Insufficient Data Announcement.

***Houttuynia cordata*-Derived Ingredients History**

December 2025

- SLR posted

January 2026

- Comments on SLR from Council received
- HRIPT data on an emulsion containing 0.0048% Houttuynia Cordata Extract received
- Summary data on Houttuynia Cordata Extract received (method of manufacture, composition and impurities, photoreactivity)

February 2026

- Summary data on Houttuynia Cordata Extract received (chemical properties, method of manufacture, composition and impurities, phototoxicity, dermal irritation, HRIPT)

June 2026

- Panel reviews Draft Report

***Houttuynia cordata*-Derived Ingredients Data Profile* – June 2026 – Litta Paulson**																														
					Toxico-kinetics		**Acute Tox**			**Repeated Dose Tox**			**DART**		**Genotox**		**Carci**		**Dermal Irritation**			**Dermal Sensitization**				**Ocular Irritation**		**Clinical Studies**	
	Reported Use	**GRAS**	**Method of Mfg**	**Constituents/ Impurities**	**Dermal Penetration**	**ADME**	**Dermal**	**Oral**	**Inhalation**	**Dermal**	**Oral**	**Inhalation**	**Dermal**	**Oral**	**In Vitro**	**In Vivo**	**Dermal**	**Oral**	**In Vitro**	**Animal**	**Human**	**In Vitro**	**Animal**	**Human**	**Phototoxicity**	**In Vitro**	**Animal**	**Retrospective/ Multicenter**	**Case Reports**
Houttuynia Cordata Extract	**X**		**X**	X				X			X		X						X			X		X	X	X			
Houttuynia Cordata Flower/Leaf/Stem Water	**X**																													
Houttuynia Cordata Leaf Extract	**X**										X				X	X														
Houttuynia Cordata Leaf Water	**X**																													
Houttuynia Cordata Powder	**X**																													
Houttuynia Cordata Water	**X**																													

* "X" indicates that data were available in a category for the ingredient

Houttuynia cordata-Derived Ingredients

Ingredient	CAS #	PubMed	FDA	CompTox	ChemPort	NIOSH	NTIS	NTP	FEMA	EU	ECHA	SIDS	SCCS	AICIS	FAO	WHO	Web
Houttuynia Cordata Extract	164288-50-0	X		X	X					X	X						X
Houttuynia Cordata Flower/Leaf/Stem Water	164288-50-0									X							
Houttuynia Cordata Leaf Extract		X								X							
Houttuynia Cordata Leaf Water		X								X							
Houttuynia Cordata Powder	164288-50-0	X								X							
Houttuynia Cordata Water	164288-50-0	X								X							

"X" indicates data was found

Botanical and/or Fragrance Websites

Ingredient	CAS #	Dr. Duke's	Taxonomy	GRIN	Sigma-Aldrich	AHPA	AGRICOLA	IFRA	RIFM
Houttuynia Cordata Extract	164288-50-0	X	X	X			X		
Houttuynia Cordata Flower/Leaf/Stem Water	164288-50-0	X	X	X					
Houttuynia Cordata Leaf Extract		X	X	X			X		
Houttuynia Cordata Leaf Water		X	X	X					
Houttuynia Cordata Powder	164288-50-0	X	X	X					
Houttuynia Cordata Water	164288-50-0	X	X	X					

"X" indicates data was found

Search Strategy

The following search string was used in PubMed:

(((((((Houttuynia Cordata) OR (Houttuynia Cordata Flower Leaf Stem Water)) OR (Houttuynia Cordata Leaf Extract)) OR (Houttuynia Cordata Leaf Water)) OR (Houttuynia Cordata Powder)) OR (Houttuynia Cordata Water)))
[*504 hits / 18 useful*]

The following search terms were used in all links other than PubMed:

Houttuynia cordata
164288-50-0

LINKS

Search Engines

- Pubmed - https://pubmed.ncbi.nlm.nih.gov/
  - appropriate qualifiers are used as necessary
  - search results are reviewed to identify relevant documents
- CompTox: https://comptox.epa.gov/dashboard/chemical/pubmed-abstract-sifter ; https://www.epa.gov/comptox-tools/downloadable-computational-toxicology-data#LM
- eChemPortal: https://www.echemportal.org/echemportal/
- DeepDyve: https://www.deepdyve.com/
- Connected Papers - https://www.connectedpapers.com/

Pertinent Websites

- wINCI - https://incipedia.personalcarecouncil.org/winci/ingredient-custom-search/
- FDA Cosmetics page - https://www.fda.gov/cosmetics
- eCFR (Code of Federal Regulations) - https://www.ecfr.gov/
- FDA search databases: https://www.fda.gov/industry/fda-basics-industry/search-databases
- Substances Added to Food (formerly, EAFUS): https://www.fda.gov/food/food-additives-petitions/substances-added-food-formerly-eafus
- GRAS listing: https://www.fda.gov/food/food-ingredients-packaging/generally-recognized-safe-gras
- SCOGS database: https://www.fda.gov/food/generally-recognized-safe-gras/gras-substances-scogs-database
- Inventory of Food Contact Substances Listed in 21 CFR: https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=IndirectAdditives
- Drug Approvals and Database: https://www.fda.gov/drugs/development-approval-process-drugs/drug-approvals-and-databases
- FDA Orange Book: https://www.fda.gov/drugs/drug-approvals-and-databases/approved-drug-products-therapeutic-equivalence-evaluations-orange-book
- OTC Monographs - https://www.accessdata.fda.gov/scripts/cder/omuf/
- Inactive Ingredients Approved For Drugs: https://www.accessdata.fda.gov/scripts/cder/iig/
- FEMA (Flavor & Extract Manufacturers Association) GRAS: https://www.femaflavor.org/fema-gras
- NIOSH (National Institute for Occupational Safety and Health) - http://www.cdc.gov/niosh/
- NTIS (National Technical Information Service) technical reports search page: https://ntrl.ntis.gov/NTRL/
- NTP (National Toxicology Program) - http://ntp.niehs.nih.gov/
- EUR-Lex - https://eur-lex.europa.eu/homepage.html
- Scientific Committees (SCCS, etc) opinions: https://health.ec.europa.eu/scientific-committees/scientific-committee-consumer-safety-sccs_en
  - Mandates: https://health.ec.europa.eu/scientific-committees/scientific-committee-consumer-safety-sccs/sccs-mandates_en
- ECHA (European Chemicals Agency – REACH dossiers) – https://chem.echa.europa.eu/
- CosIng - https://ec.europa.eu/growth/tools-databases/cosing/
- European Medicines Agency (EMA) - http://www.ema.europa.eu/ema/
- OECD SIDS (Organisation for Economic Co-operation and Development Screening Info Data Sets)- http://webnet.oecd.org/hpv/ui/Search.aspx
- EFSA (European Food Safety Authority) - https://www.efsa.europa.eu/en
- ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals) - http://www.ecetoc.org
- AICIS (Australian Industrial Chemicals Introduction Scheme)- https://www.industrialchemicals.gov.au/
- International Programme on Chemical Safety http://www.inchem.org/
- Office of Dietary Supplements https://ods.od.nih.gov/
- FAO (Food and Agriculture Organization of the United Nations) - http://www.fao.org/food/food-safety-quality/scientific-advice/jecfa/jecfa-additives/en/
- WHO (World Health Organization) IRIS library - https://apps.who.int/iris/
- a general Google and Google Scholar search should be performed for additional background information, to identify references that are available, and for other general information - www.google.com https://scholar.google.com/

Botanical Websites, if applicable to the report

- Dr. Duke's - https://phytochem.nal.usda.gov/
- Taxonomy database - http://www.ncbi.nlm.nih.gov/taxonomy
- GRIN (U.S. National Plant Germplasm System) - https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysimple.aspx
- Sigma Aldrich plant profiler- http://www.sigmaaldrich.com/life-science/nutrition-research/learning-center/plant-profiler.html
- American Herbal Products Association Botanical Safety Handbook (2nd Edition; 2013) - http://abc.herbalgram.org/site/DocServer/AHPABotanicalSafety_FMexcerpt.pdf?docID=4601
- National Agricultural Library NAL Catalog (AGRICOLA) https://agricola.nal.usda.gov/

Fragrance Websites, if applicable

- IFRA (International Fragrance Association) – https://ifrafragrance.org/
- Research Institute for Fragrance Materials (RIFM) - https://www.rifm.org/#gsc.tab=0 http://fragrancematerialsafetyresource.elsevier.com/

Personal Care Products Council
Committed to Safety, Quality & Innovation

Memorandum

TO: Bart Heldreth, Ph.D.
Executive Director - Cosmetic Ingredient Review

FROM: Jaap Venema, Ph.D.
Industry Liaison to the CIR Expert Panel

DATE: January 13, 2026

SUBJECT: Scientific Literature Review: Safety Assessment of *Houttuynia cordata*-Derived Ingredients as Used in Cosmetics (release date December 16, 2025)

The Personal Care Products Council respectfully submits the following comments on the scientific literature review, Safety Assessment of *Houttuynia cordata*-Derived Ingredients as Used in Cosmetics.

Composition and Impurities – At only 0.05% of the total plant composition, it does not make sense to call volatile oils "the main chemical ingredient".

Please consider adding the following paper (attached) concerning the oxalate content of Chinese medicinal herbs (including *Houttuynia cordata*).

Huang J, Huang C, Liebman M. 2015. Oxalate contents of commonly used Chinese medicinal herbs. J Tradit Chin Med 35(5): 594-599.

Cosmetic Use; Summary – Please make it clear that the RLD is the frequency of use data that came from FDA. The 2025 information is a separate concentration of use survey completed by PCPC. For example, the Summary in the SLR states: "According to RLD submitted in 2024 and 2025 concentration of use data…"

Cosmetic Use – In the Cosmetic Use section, it would be helpful to also state that the other *Houttuynia cordata*-derived ingredients had 20 or fewer uses reported to the FDA.

Non-Cosmetic – Although a reference may have called *Houttuynia cordata* "essential" for the treatment of SARS and COVID-19, it is not an approved drug, and for the CIR report it may be better to say that in China it is considered an important treatment (although apparently SFDA has taken some action against some formulations).

Acute, Table 4 – Since there was only one dose used in the acute oral rat study described in reference 16, it is not necessary to include "/group" (only 12/sex were treated with 2000 mg/kg).

Short-Term and Subchronic; Table 5 – It should be noted that for the 28-day study described in reference 16, the authors stated that males were more susceptible than females. This is opposite the 13-week feeding study (reference 18) in which the NOAEL was 350 mg/kg/day for female rats and 999 mg/kg/day for male rats. Did either study discuss why there were sex differences in the responses? For the dietary study (reference 18) it would be helpful to link the NOAEL doses associated with the stated dietary concentrations.

Developmental and Reproductive Toxicity – It would also be helpful to include the results of the network pharmacology analysis included in reference 19. This analysis suggested that the following components may be the main actives contributing to developmental effects: oleanolic acid, luteolin and aristolactam AII.

Cytotoxicity – Please see Figure 9 of reference 27 regarding the hemolysis study. It indicates that the concentrations tested were 0.625-10 volume fraction %. Rather that "no hemolysis", the hemolysis observed was not considered significant.

Effect on Hair Follicles – If available, please also include the concentration of minoxidil used as the positive control.

Table 2 – For the amounts, please clarify what the values represent, e.g., % of what, g of dried leaves, ml of what.

Houttuynia cordata-Derived Ingredients – June 2026 – Litta Paulson	
Comment Submitter: Personal Care Products Council **Date of Submission: May 22, 2026**	
Comment	**Response/Action**
Composition and Impurities – At only 0.05% of the total plant composition, it does not make sense to call volatile oils "the main chemical ingredient".	addressed
Please consider adding the following paper (attached) concerning the oxalate content of Chinese medicinal herbs (including Houttuynia cordata). Huang J, Huang C, Liebman M. 2015. Oxalate contents of commonly used Chinese medicinal herbs. J Tradit Chin Med 35(5): 594-599.	addressed
Cosmetic Use; Summary – Please make it clear that the RLD is the frequency of use data that came from FDA. The 2025 information is a separate concentration of use survey completed by PCPC. For example, the Summary in the SLR states: "According to RLD submitted in 2024 and 2025 concentration of use data…"	addressed
Cosmetic Use – In the Cosmetic Use section, it would be helpful to also state that the other Houttuynia cordata-derived ingredients had 20 or fewer uses reported to the FDA.	addressed
Non-Cosmetic – Although a reference may have called Houttuynia cordata "essential" for the treatment of SARS and COVID-19, it is not an approved drug, and for the CIR report it may be better to say that in China it is considered an important treatment (although apparently SFDA has taken some action against some formulations).	addressed
Acute, Table 4 – Since there was only one dose used in the acute oral rat study described in reference 16, it is not necessary to include "/group" (only 12/sex were treated with 2000 mg/kg).	addressed
Short-Term and Subchronic; Table 5 – It should be noted that for the 28-day study described in reference 16, the authors stated that males were more susceptible than females. This is opposite the 13-week feeding study (reference 18) in which the NOAEL was 350 mg/kg/day for female rats and 999 mg/kg/day for male rats. Did either study discuss why there were sex differences in the responses? For the dietary study (reference 18) it would be helpful to link the NOAEL doses associated with the stated dietary concentrations.	Reasoning for sex differences was not discussed by either study. All other points addressed
Developmental and Reproductive Toxicity – It would also be helpful to include the results of the network pharmacology analysis included in reference 19. This analysis suggested that the following components may be the main actives contributing to developmental effects: oleanolic acid, luteolin and aristolactam AII.	addressed
Cytotoxicity – Please see Figure 9 of reference 27 regarding the hemolysis study. It indicates that the concentrations tested were 0.625-10 volume fraction %. Rather that "no hemolysis", the hemolysis observed was not considered significant.	addressed
Effect on Hair Follicles – If available, please also include the concentration of minoxidil used as the positive control.	addressed

***Houttuynia cordata*-Derived Ingredients – June 2026 – Litta Paulson**	
Comment Submitter: Personal Care Products Council **Date of Submission: May 22, 2026**	
Comment	**Response/Action**
Table 2 – For the amounts, please clarify what the values represent, e.g., % of what, g of dried leaves, ml of what.	addressed

Safety Assessment of *Houttuynia cordata*-Derived Ingredients as Used in Cosmetics

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555 13th Street, NW, Suite 300W, Washington, DC 20004
cirinfo@cir-safety.org

ABBREVIATIONS

ALT	alanine transaminase
AST	aspartate transaminase
BrdU	bromodeoxyuridine
BUN	blood urea nitrogen
CIR	Cosmetic Ingredient Review
Council	Personal Care Products Council
Dictionary	*International Cosmetic Ingredient Dictionary*
DMSO	dimethyl sulfoxide
ELISA	enzyme-linked immunosorbent assay
FDA	Food and Drug Administration
HET-CAM	hen's egg test on the chorioallantoic membrane
HRIPT	human repeated insult patch test
hiPSCs	human-induced pluripotent stem cells
hpf	hours post-fertilization
IFN-γ	interferon-gamma
IFRA	International Fragrance Association
IL	interleukin
iNOS	inducible nitric oxide synthase
JSQI	Japanese Standards of Quasi-drug Ingredients
LC_{50}	median lethal dose
l.o.	leave-on
LPS	lipopolysaccharide
LTS	lipoteichoic acid
MNV-1	murine norovirus-1
MoCRA	Modernization of Cosmetics Regulation Act of 2022
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide
NOAEL	no-observed-adverse-effect-level
NR	not reported
NRU	neutral red uptake
OECD	Organisation for Economic Co-operation and Development
Panel	Expert Panel for Cosmetic Ingredient Safety
RIFM	Research Institute for Fragrance Materials
RLD	Registration and Listing Data
r.o.	rinse-off
ROS	reactive oxygen species
SARS	severe acute respiratory syndrome
SFDA	China's State Food and Drug Administration
TG	test guideline
TNF-α	tumor necrosis factor-α
US	United States

INTRODUCTION

This assessment reviews the safety of the following 6 *Houttuynia cordata*-derived ingredients as used in cosmetic formulations:

Houttuynia Cordata Extract
Houttuynia Cordata Flower/Leaf/Stem Water
Houttuynia Cordata Leaf Extract
Houttuynia Cordata Leaf Water
Houttuynia Cordata Powder
Houttuynia Cordata Water

According to the *International Cosmetic Ingredient Dictionary* (*Dictionary*), the majority of these ingredients are reported to function in cosmetics as skin-conditioning; additional functions are also reported (Table 1).[1]

The Expert Panel for Cosmetic Ingredient Safety (Panel) does not typically review ingredients that function only as fragrance ingredients, because, as fragrances, the evaluation of the safety of these ingredients is the purview of the Research Institute for Fragrance Materials (RIFM). Houttuynia Cordata Water is reported to function only as a fragrance ingredient in cosmetics, according to the *Dictionary* (see Table 1). However, it is unknown when the safety assessment of this ingredient will be prepared, and therefore, the Panel is reviewing the safety of this ingredient.

In several countries, some of the ingredients reviewed in this safety assessment may be consumed as food, and daily exposure from food use would result in much larger systemic exposures than those from use in cosmetic products. The primary focus of the safety assessment of these ingredients as used in cosmetics is on the potential for effects from topical exposure.

Botanicals, such as *Houttuynia cordata*-derived ingredients, may contain hundreds of constituents. In this assessment, the Panel is evaluating the potential toxicity of each of the *Houttuynia cordata*-derived ingredients as a whole, complex substance; toxicity from single components may not predict the potential toxicity of botanical ingredients.

This safety assessment includes relevant published and unpublished data that are available for each endpoint that is evaluated. Published data are identified by conducting an extensive search of the world's literature; a search was last conducted in May 2026. A listing of the search engines and websites that are used and the sources that are typically explored, as well as the endpoints that the Panel typically evaluates, is provided on the Cosmetic Ingredient Review (CIR) website (https://www.cir-safety.org/supplementaldoc/preliminary-search-engines-and-websites; https://www.cir-safety.org/supplementaldoc/cir-report-format-outline). Unpublished data are provided by the cosmetics industry, as well as by other interested parties.

The cosmetic ingredient names, according to the *Dictionary*, are written as listed above, without italics and without abbreviations. When referring to the plant from which these ingredients are derived, the standard scientific practice of using italics will be followed (i.e., *Houttuynia cordata*). If it is not known whether the substance being discussed is equivalent to the cosmetic ingredient, the test substance will be identified by the name used in the publication that is being cited (e.g., *Houttuynia cordata* extract). However, if it is known that the substance is a cosmetic ingredient, the *Dictionary* nomenclature (e.g., Houttuynia Cordata Extract) will be used.

CHEMISTRY

Definition and Plant Identification

The definitions of the ingredients included in this review are provided in Table 1. Most of the ingredients are obtained from either the aerial parts or leaves, and several share the generic CAS No. 164288-50-0.[1]

Houttuynia cordata is a perennial herb from the family Saururaceae, that is native to China, Japan, Korea, and South East Asia, usually growing in humid and shaded areas like roadsides and slopes.[2,3] The plant has slender, cylindrical stems that grow to be 15 - 50 cm in height, with green, heart-shaped leaves that have palmate veins and a fishy odor. *Houttuynia cordata* flowers are simple, made up of four white bracts and a yellow-green, spike-like inflorescence in the center. The plant has underground rhizomes that are white, cylindrical, and can grow up to 30 cm in length. Primary and lateral roots extend radially from the nodes which are found on the rhizomes. *Houttuynia cordata* is also known as fish wort, chameleon plant, heartleaf, Chinese lizard tail, dokudami, and Yu Xing Cao.[3,4]

Chemical Properties

Houttuynia Cordata Extract

According to an industry submission, a 1,3-butylene glycolic Houttuynia Cordata Extract is described as a brown, transparent liquid.[5] The liquid is also reported to have a slightly "characteristic" odor (not further described).

Method of Manufacture

Houttuynia Cordata Extract

An industry submission stated that an ethanolic Houttuynia Cordata Extract was prepared with dried raw material that was extracted with an ethanolic solution, then filtered, concentrated, adjusted, sedimented, filtered, adjusted, and packaged.[6] A powdered ethanolic Houttuynia Cordata Extract was prepared with dried raw material that was extracted with an ethanolic solution, then filtered and concentrated. Anhydrous sodium sulfate was added as the vehicle, then the product

was packaged. A butylene glycolic Houttuynia Cordata Extract was prepared with dried raw material that was extracted with a 1,3-butylene glycolic solution, then filtered, sedimented, filtered, adjusted, and packaged.

According to another industry submission, Houttuynia Cordata Extract was prepared by extracting the aerial parts of *Houttuynia cordata* (in blooming season) with 1,3-butylene glycol solution, then allowing it to stand in a cold place, and filtering to obtain the final product, after quality standardization.[5] Synthetic reagents, preservatives, and chemical modifications were not used, and residual solvent levels met general cosmetic ingredient quality guidelines and International Fragrance Association (IFRA) specifications.

Composition and Impurities

Houttuynia cordata is made up of phytochemical constituents such as volatile oils, organic acids, flavonoids, alkaloids, polysaccharides, and polyphenols (Table 2).[3] Some other components like proteins, tannins, salts, starches, and various vitamins are found within the plant parts. The plant contains high levels of total and soluble oxalates (3204 and 2146 mg/ 100 g dry weight, respectively).[7] *Houttuynia cordata* is also highly prone to accumulating heavy metals such as lead and cadmium, based on the soil and environment in which it is grown.[8]

Volatile oils compose about 0.05% of the total plant composition of *Houttuynia cordata*.[3,9] Oil content is based on growth conditions, harvest time, and area of extraction, as different parts of the plant contain different amounts of oil (leaves and stems contain 66.83 and 94.55% of volatile oil, respectively). Decanoyl acetaldehyde gives *Houttuynia cordata* leaves their distinctive fishy odor.[8] *Houttuynia cordata* is made up of more than 30 flavonoids (flavanols and flavanol-type polyphenols) found in simple or polymeric forms, comprising of about 0.1% of the total plant composition.[3] Quercetin, isoquercitrin, and rutin are the most common flavonoids found in *Houttuynia cordata* and the extract compositions of these compounds are 0.4, 5.4, and 5.4 μg/ml respectively. Studies have reported flavonoid content of stems and leaves to be 39.97 and 24.68 μg/ml respectively.

Alkaloids are present in the aerial parts of *Houttuynia cordata,* and 71 different ones have been identified in the plant; these include aporphine alkaloids (27 compounds), aristololactam alkaloids (12 compounds), amide alkaloids (15 compounds), pyridine alkaloids and other alkaloids (11 compounds).[3] Polysaccharides are abundant in *Houttuynia cordata* and the most common ones are arabinose, galactose, glucose, rhamnose, galacturonic acid, glucuronic acid, mannose, xylose, and fucose.[3,8] An aqueous extract of *Houttuynia cordata* was found to contain 7.28% acidic pectic polysaccharides.

Organic acids are mostly present in *Houttuynia cordata* leaves, and acidic content is higher in alcohol extracts as compared to water extracts, with *p*-coumaric acid being the most abundant of the organic acids.[3] A total of 16 polyphenols have also been identified in *Houttuynia cordata,* and content amount varies based on plant part (e.g., stems and leaves contain 9.4 and 8.2 mg/g respectively).

Houttuynia Cordata Extract

According to an industry submission, Houttuynia Cordata Extracts (using ethanol or 1,3-butylene glycol) contained tannins, flavonoids, heavy metals (not more than 20 ppm), and arsenic (not more than 2 ppm).[6] A powdered ethanolic Houttuynia Cordata Extract comprised tannins, heavy metals (not more than 10 ppm), and arsenic (not more than 2 ppm).

Another industry submission stated that the main phytochemical constituents of a 1,3-butylene glycolic Houttuynia Cordata Extract were tannins and flavonoids, as identified by qualitative reaction.[5] This ingredient mixture is supplied as butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%), and does not include any synthetic additives or preservatives. Heavy metals and arsenic levels are <20 and <2 ppm, respectively, and the values comply with Japanese Standards of Quasi-drug Ingredients (JSQI) standards.

USE

Cosmetic

The safety of the cosmetic ingredients addressed in this assessment is evaluated based on data received from the US Food and Drug Administration (FDA) and the cosmetics industry on the expected use of *Houttuynia cordata*-derived ingredients in cosmetics. Registration and Listing Data (RLD) obtained from the FDA report frequency of use, and responses to a survey conducted by the Personal Care Products Council (Council) indicate maximum reported concentrations of use; it is these values that define the present practices of use and concentration that are assessed by the Panel. Since 2024, as a result of the Modernization of Cosmetics Regulation Act of 2022 (MoCRA), manufacturers and processors are required to register facilities and list their products (and ingredients therein) with the FDA (i.e., RLD). An exception is made for small businesses (average gross annual sales in the US of cosmetic products for the previous 3-yr period is less than $1,000,000, adjusted for inflation), which are exempt from MoCRA reporting for most cosmetic product categories. Eye area products, injected products, internal use products, or products that alter appearance for more than 24 h, and the facilities that manufacture these products, are not included in this exemption.[10] Another change resulting from MoCRA is the addition of tattoo preparations (permanent tattoo inks, temporary tattoo inks, and other tattoo products) to the product categories for which companies need to list their products with FDA. However, evaluating the safety of ingredients as used in tattoo preparations is not within the purview of the Panel; accordingly, such use is not included as part of the present practices of use that are assessed by the Panel.

According to RLD obtained from the FDA in 2025 and concentration of use data submitted in 2025 in response to the Council survey, Houttuynia Cordata Extract has the highest frequency and concentration of use; it is reported to be used in 2285 formulations at up to 1.5% in leave-on face and neck products (Table 3).[11-13] The other 5 ingredients had 39 or fewer uses reported, and did not have any concentration of use reported.

Some of these ingredients may be incidentally ingested as they are used in products used near the mouth (e.g., Houttuynia Cordata Extract is used in lipsticks and lip glosses; concentration not reported). In addition, these ingredients may be used near the eye area (e.g., Houttuynia Cordata Extract is used in eye lotion at up to 0.0027%) or result in mucous membrane exposure (e.g., Houttuynia Cordata Extract is used bath oils, tablets and salts at 0.004%). Lastly, these ingredients are reported to be used in baby products (e.g., Houttuynia Cordata Extract is used in baby lotions/oils/powders/creams; concentration not reported).

Cosmetic products containing *Houttuynia cordata*-derived ingredients may be incidentally inhaled as they are used in spray and powder formulations (e.g., Houttuynia Cordata Extract is used in hair sprays and face powders; concentrations not reported). In practice, as stated in the Panel's respiratory exposure resource document (https://www.cir-safety.org/cir-findings), most droplets/particles incidentally inhaled from cosmetic sprays would be deposited in the nasopharyngeal and tracheobronchial regions and would not be respirable (i.e., they would not enter the lungs) to any appreciable amount. Additionally, Houttuynia Cordata Extract is used in underarm deodorant sprays (concentrations not reported), and there is some evidence indicating that deodorant spray products can release substantially larger fractions of particulates having aerodynamic equivalent diameters in the range considered to be respirable. However, the information is not sufficient to determine whether significantly greater lung exposures result from the use of deodorant sprays, compared to other cosmetic sprays. Conservative estimates of inhalation exposures to respirable particles during the use of loose powder cosmetic products are 400-fold to 1000-fold less than protective regulatory and guidance limits for inert airborne respirable particles in the workplace.

It is possible that some products containing *Houttuynia cordata*-derived ingredients may be marketed for use with airbrush delivery systems. With the advent of MoCRA and the current product categories outlined therein, it is now mandatory that cosmetic products used in airbrush delivery systems be reported as such for some, but not all, product categories in the RLD. In other words, a reliable source of frequency of use data regarding the use of cosmetic ingredients in conjunction with airbrush delivery systems is now available, in some instances. None of the reported product categories for these ingredients as listed in the RLD include a designation using airbrush application, so it is possible that these ingredients are used with airbrush delivery systems, but not reported as such. Additionally, the concentration of use surveys are conducted based on product categories as stated in the RLD, but airbrush use was not reported in response to the survey. No consumer habits and practices data or particle size data are publicly available to evaluate the exposure associated with airbrush technology, thereby preempting the ability to evaluate risk or safety. Without information regarding the consumer habits and practices data or product particle size data (or other relevant particle data, e.g., diameter) related to this use technology, the data profile is incomplete, and the Panel is not able to determine safety for use in airbrush formulations. If these ingredients were to be used in airbrush formulations, the data are insufficient to evaluate the exposure resulting from cosmetics applied in such a manner.

The *Houttuynia cordata*-derived ingredients named in this report are not restricted from use in any way under the rules governing cosmetic products in the European Union.[14]

Non-Cosmetic

Houttuynia cordata has been consumed as part of a daily diet for centuries in many Asian countries.[8,15] The aerial parts of the plant are eaten raw or cooked, and sometimes used as an herb to season dishes; all parts of the plant are edible, including the underground rhizomes. In traditional medicine, concoctions of herbal tea, soup, and fermented wine are made from various parts of the plant for purposes such as weight loss, smoking cessation, fever reduction, constipation, and more. Fermented drinks are also consumed as dietary supplements for reported immunomodulatory effects.[3] In traditional Chinese medicine, the entire *Houttuynia cordata* plant is utilized for treating respiratory infections, skin diseases, wounds, swelling, and other ailments.[16,17] It has also been incorporated into traditional hair loss treatments.[18] *Houttuynia cordata* injections have been used in China to treat infectious disease, due to its reported anti-inflammatory and anti-viral properties, and was also a treatment for severe acute respiratory syndrome (SARS) and COVID-19.[8,19] However, several formulations of the injection have been suspended from use by China's State Food and Drug Administration (SFDA) due to a rise in adverse effects (e.g., respiratory symptoms, rash, anaphylactic shock, and death).[19]

TOXICOKINETIC STUDIES

No relevant toxicokinetic studies on *Houttuynia cordata*-derived ingredients were found in the published literature, and unpublished data were not submitted. In general, toxicokinetic data are not expected to be found on botanical ingredients because each botanical ingredient is a complex mixture of constituents.

TOXICOLOGICAL STUDIES

Acute Toxicity Studies

Details regarding the acute oral toxicity studies summarized herein may be found in Table 4. An acute toxicity assay performed using Sprague–Dawley rats treated with an ethanolic extract of *Houttuynia cordata* (2000 mg/kg) reported no mortality or signs of toxicity.[20] An exploratory study conducted on 4 rats (strain not stated) administered an ethanolic extract of *Houttuynia cordata* found no mortality at a maximum dose of 50,000 mg/kg bw.[21] This dose of extract was used in an acute oral toxicity assay also performed in rats (strain not stated), which resulted in a few immediate symptoms but no mortality or other significant changes.

Short-Term and Subchronic Toxicity Studies

Details regarding the repeated-dose oral toxicity studies summarized herein may be found in Table 5. A 28-d toxicity study conducted in Sprague-Dawley rats treated with an ethanolic extract of *Houttuynia cordata* (250 - 1000 mg/kg/d) resulted in some mortality and several signs of liver and kidney toxicity in the higher dose groups.[20] The no-observed-adverse-effect-level (NOAEL) was concluded to be 250 mg/kg/d. A short-term toxicity study conducted in rabbits (strain not stated) given an ethanolic extract of *Houttuynia cordata* (up to 1500 mg/kg bw/d) for 28 d reported no significant changes or signs of toxicity in the test groups.[21] A 2-wk preliminary feeding study performed on F344/DuCrj rats, testing doses of an ethanolic extract of *Houttuynia cordata* leaves (0.5 - 5.0%), found no significant changes or mortality in any of the treated groups.[22] A subsequent 13-wk feeding study conducted in F344/DuCrj rats given the same doses of an ethanolic extract of *Houttuynia cordata* leaves (0.5 - 5.0%) resulted in several signs of kidney toxicity in the higher dose groups. The NOAEL was determined to be 350 mg/kg/d for female rats and 999 mg/kg/d for male rats.

DEVELOPMENTAL AND REPRODUCTIVE TOXICITY STUDIES

In Vitro

Houttuynia Cordata Extract

Embryoid bodies were generated from human-induced pluripotent stem cells (hiPSCs) and placed in aqueous *Houttuynia cordata* extract concentrations of 0, 150, 250, and 350 µg/ml, and cultures were observed for 4 d (mifepristone used as positive control; replicated 3 times).[23] At all extract concentrations, embryoid bodies were significantly smaller in diameter than the control, and at 350 µg/ml, embryoid body formation was inhibited, indicating embryotoxicity of aqueous *Houttuynia cordata* extract.

Animal

Zebrafish Embryo Model

Houttuynia Cordata Extract

An embryotoxicity assay was conducted with AB feral type zebrafish embryos (30/group) to test the effects of an aqueous *Houttuynia cordata* extract in accordance with the Organisation for Economic Co-operation and Development (OECD) test guideline (TG) 236.[23] Embryos were treated with 0, 2000, 2500, 3000, 3500, or 4000 µg/ml of the test substance (replicated 3 times) at 0 h post-fertilization (hpf) and were observed at 24, 48, 72, 96, and 120 hpf, including assessment of hatching rates at 72 hpf . The embryos exhibited signs of dose-dependent mortality. All embryos treated with 3500 and 4000 µg//ml of a *Houttuynia cordata* extract died and had curved spines at 96 and 120 hpf. All embryos treated with 3000 µg/ml *Houttuynia cordata* extract died at 120 hpf. The median lethal concentration (LC_{50}) was found to be 2052 µg/ml at 120 hpf. Exposure to 2000 µg/ml of a *Houttuynia cordata* extract significantly decreased zebrafish embryo hatching rate. The cardiovascular system showed greatest toxicity with some indirect toxicity on the liver and intestine.

Computational Analyses

Houttuynia cordata

A network pharmacology analysis was conducted to investigate the mechanism of embryotoxicity of *Houttuynia cordata*.[23] Based on the results, the study authors suggested that the main active agents contributing to embryotoxicity were oleanolic acid, luteolin, and aristolactam AII; the PI3K-Akt signaling pathway may be the main mechanism of embryotoxicity.

GENOTOXICITY STUDIES

Details regarding the genotoxicity studies summarized herein may be found in Table 6. A methanolic *Houttuynia cordata* leaf extract did not produce genetic mutations; a reverse mutation assay performed with the extract (up to 5000 µg/plate) in dimethyl sulfoxide (DMSO)), with and without metabolic activation, gave non-mutagenic results.[24] The ability to induce chromosomal damage was evaluated in vitro and in vivo. A chromosomal aberration assay conducted with Chinese hamster ovarian cells treated with a methanolic leaf extract of *Houttuynia cordata* (up to 5 µg/ml; in DMSO), did not result in genotoxicity, but did show a significant dose-dependent elevation in anticlastogenic effect, with and without metabolic activation. No genotoxicity was observed in a bone marrow micronucleus test conducted with ICR mice injected intraperitoneally with a methanolic leaf extract of *Houttuynia cordata* (up to 2 g/kg; in DMSO).

CARCINOGENICITY STUDIES

No relevant carcinogenicity studies on *Houttuynia cordata*-derived ingredients were found in the published literature, and unpublished data were not submitted.

OTHER RELEVANT STUDIES

Cytotoxicity

Houttuynia Cordata Extract

No cytotoxicity was observed in a cell viability assay conducted with human vaginal epithelial cells that were treated with an aqueous extract of *Houttuynia cordata* (0.025 - 0.2 mg/ml).[25] Using a 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay, concentrations of an aqueous *Houttuynia cordata* extract (62.5 - 1000 mg/ml) and an ethanolic *Houttuynia cordata* extract (25 - 400 mg/ml) were tested for cytotoxicity in mouse macrophage cells (RAW 264.7) and human skin cells (HaCaT and NHDF).[26] The aqueous extract showed slight cytotoxicity for all cell types in a dose-dependent manner, while the ethanolic extract showed none.

Several studies were conducted using ethanolic extracts of *Houttuynia cordata*, examining the effects on breast cancer cells (MCF-7, MDA-MB-231, MCF-10A; extract concentrations of 0.05 – 0.5 mg/ml), prostate cancer cells (LNCaP and PCai1; extract concentrations of 0.05 – 0.2 mg/ml), and melanoma cells (A375; extract concentrations of 0.025 – 0.2 mg/ml).[27-30] Cytotoxic effects, such as reduced cell viability and increased apoptosis, were reported.

An assay was conducted in which rabbit erythrocytes (strain not stated) were treated with an aqueous extract of *Houttuynia cordata* (0.625 - 10 volume fraction %).[31] No significant hemolysis was observed.

Immunomodulatory Effects

Houttuynia Cordata Extract

Several studies performed enzyme-linked immunosorbent assay (ELISA) to quantify interleukin (IL)-6, IL-8, inducible nitric oxide synthase (iNOS), and tumor necrosis factor-α (TNF-α) in HaCaT keratinocytes (lipopolysaccharide (LPS)-stimulated) and RT-7 oral keratinocytes (*Porphyromonas gingivalis* LPS-stimulated and *Staphylococcus aureus* lipoteichoic acid (LTA)-stimulated), following treatment with aqueous and ethanolic extracts of *Houttuynia cordata*.[31,32] Results showed significant inhibition of and decreases in expression of all inflammatory factors. A multiplexed immunoassay was performed on human vaginal epithelial cells treated with an aqueous extract of *Houttuynia cordata* (0, 0.05, 0.1, 0.2 mg/ml) to measure levels of IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10, interferon-gamma (IFN-γ), and TNF-α.[25] Secreted levels of IL-2 and IL-6 increased significantly in cells treated with the test substance (IL-2 increased in the 0.05 and 0.2 mg/ml groups; IL-6 increased in the 0.1 and 0.2 mg/ml groups), when compared to the untreated controls.

Anti-Microbial Activity

Houttuynia Cordata Extract

A biofilm formation assay conducted with an aqueous solution of *Houttuynia cordata* ethanolic extract (1, 5, and 10%) and multiple strains of bacteria, resulted in dose-dependent antibiofilm activity.[32] Aqueous and ethanolic extracts of *Houttuynia cordata* (0.33 and 11.54 mg/ml; in DMSO) were studied in an anti-microbial activity assay with *Cutibacterium acnes, Staphylococcus aureus*, and *Staphylococcus epidermidis*, with both extracts showing inhibitory effects against *C. acnes.*[26] A plaque assay conducted with aqueous and ethanolic extracts of *Houttuynia cordata* (0.1, 0.25, and 0.5 mg/ml) and murine norovirus-1 (MNV-1), indicated dose- and time-dependent antiviral activity (reduction in titers), with stronger effects seen in aqueous *Houttuynia cordata* extract.[33]

Effect on Hair Follicles

Houttuynia Cordata Extract

A 50% aqueous ethanolic extract of *Houttuynia cordata* (0, 0.001, 0.01, 0.02, and 0.05 mg/ml; minoxidil (0.1 μM) used as positive control) was tested with human dermal papilla cells (3000 cells/well) in a cell proliferation assay using bromo-deoxyuridine (BrdU).[18] Results showed a cell proliferation increase to be dose-dependent (0.02 and 0.05 mg/ml groups had significant increases when compared to untreated control; comparable with minoxidil group results). Within the same study, a hair cycle scoring test was conducted with anagen human hair follicles (20/group) cultured for 9 d in a 50% aqueous ethanolic extract of *Houttuynia cordata* (0, 0.002, 0.02, and 0.05 mg/ml; minoxidil (50 μM) used as positive control). Results showed that a higher percentage of hair follicles in *Houttuynia cordata* extract-treated groups remained in anagen stage in a dose-dependent manner, when compared to controls (results comparable with minoxidil group).

DERMAL IRRITATION AND SENSITIZATION STUDIES

Irritation and Sensitization

Details regarding the dermal irritation and sensitization studies summarized herein may be found in Table 7. An in vitro skin irritation assay performed on reconstructed human epidermis treated with an undiluted mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%) showed that the test substance is not classified as a

skin irritant.[5] A human repeated insult patch test (HRIPT) performed using an emulsion containing 0.0048% Houttuynia Cordata Extract (about 0.05 ml/cm^2 of product applied) on 55 subjects (13 males, 42 females) also gave non-irritating and non-sensitizing results.[34] No irritation or sensitization was observed in an HRIPT conducted on 55 subjects using an undiluted mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%).[5]

Phototoxicity

Details regarding the phototoxicity studies summarized herein may be found in Table 7. A reactive oxygen species (ROS) assay for photoreactivity performed with Houttuynia Cordata Extract (1,3-butylene glycol extract; concentration of 50 µg/ml) gave negative results.[6] In a 3T3 neutral red uptake (NRU) phototoxicity assay, an undiluted mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8) was found to be non-phototoxic.[5]

OCULAR IRRITATION STUDIES

In Vitro

Houttuynia Cordata Extract

A hen's egg test on the chorioallantoic membrane (HET-CAM) was conducted to test the ocular irritation effects of an aqueous extract (1:100) of *Houttuynia cordata*.[31] A sample of *Houttuynia cordata* extract (dosing concentration not stated) was added to the blood vessels. After the 3-h observation period, no hemorrhage or coagulation of blood vessels was reported, indicating an absence of irritation.

SUMMARY

The safety of 6 *Houttuynia cordata*-derived ingredients is reviewed in this safety assessment. According to the *Dictionary*, the majority of these ingredients are reported to function as skin-conditioning agents in cosmetics, though additional functions are listed for the individual ingredients.

According to RLD obtained from FDA in 2025 and concentration of use data submitted in 2025, Houttuynia Cordata Extract has the highest frequency and concentration of use. This ingredient is reported to be used in 2285 formulations at up to 1.5% in leave-on face and neck products.

An oral toxicity assay performed in rats treated with an ethanolic extract of *Houttuynia cordata* (2000 mg/kg) showed no mortality or observable toxicity. A dose-range study also conducted using rats treated with an ethanolic extract of *Houttuynia cordata* found no mortality at a maximum dose of 50,000 mg/kg bw, and this dose was subsequently used in a formal acute toxicity assay in which no mortality or significant signs of toxicity were observed.

A 28-d study performed on rats treated with an ethanolic extract of *Houttuynia cordata* (250 - 1000 mg/kg/d) resulted in a few mortalities and signs of toxicity, establishing a NOAEL of 250 mg/kg/d. No mortalities or significant changes were observed in a 28-d study performed on rabbits treated with an ethanolic extract of *Houttuynia cordata* (up to 1500 mg/kg bw/d). A preliminary feeding study performed using rats given an ethanolic extract of *Houttuynia cordata* (0.5 - 5.0%) for 2 wk did not result in any mortality or signs of toxicity. However, the subsequent 13-wk study also performed on rats at the same concentrations of the test substance, resulted in toxicological changes, with NOAEL values determined to be 350 mg/kg/d for females and 999 mg/kg/d for males.

An assay conducted using hiPSC embryoid bodies placed in aqueous *Houttuynia cordata* extract (150 - 350 µg/ml) resulted in embryotoxicity. Dose-dependent embryotoxicity was observed in an assay performed using zebrafish embryos and an aqueous extract of *Houttuynia cordata* (2000 - 4000 µg/ml). Decreased hatching rate and cardiovascular toxicity were observed.

A reverse mutation assay performed using a methanolic *Houttuynia cordata* leaf extract (up to 5000 µg/plate), with and without metabolic activation, gave non-mutagenic results. A chromosomal aberration assay conducted with Chinese hamster ovarian cells treated with a methanolic leaf extract of *Houttuynia cordata* (up to 5 µg/ml), with and without metabolic activation, gave non-genotoxic results. A bone marrow micronucleus test conducted in mice injected with a methanolic leaf extract of *Houttuynia cordata* (up to 2 g/kg) was also found to be non-genotoxic.

Several studies found that ethanolic extracts of *Houttuynia cordata* were non-cytotoxic to human and mouse cells, whereas an aqueous extract exhibited a slight, dose-dependent cytotoxicity. In contrast, ethanolic extracts of *Houttuynia cordata* were found by multiple studies to be cytotoxic to various cancer cell lines (breast, prostate, and skin cancers). No significant hemolysis was observed when rabbit erythrocytes were treated with an aqueous extract of *Houttuynia cordata.*

Both aqueous and ethanolic extracts of *Houttuynia cordata* showed inhibition of inflammatory markers (IL-6, IL-8, iNOS, and TNF-α) when tested in LPS- and LTA-stimulated keratinocytes. However, IL-2 and IL-6 secretion levels increased, when compared to controls, in an assay conducted using vaginal epithelial cells treated with an aqueous *Houttuynia cordata* extract.

Aqueous and ethanolic *Houttuynia cordata* extracts have exhibited dose-dependent antibiofilm and antibacterial activity against multiple bacterial strains. A plaque assay conducted with aqueous and ethanolic *Houttuynia cordata* extracts showed dose- and time-dependent antiviral activity against MNV-1.

An aqueous ethanolic extract of *Houttuynia cordata* promoted dose-dependent proliferation of human dermal papilla cells and maintained cultured human hair follicles in the anagen stage. Effects seen at higher concentrations were comparable to minoxidil results.

An undiluted mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%) was not classified as a skin irritant in an assay conducted on reconstructed human epidermis. An HRIPT was performed on 55 subjects using an emulsion containing 0.0048% Houttuynia Cordata Extract; the test substance was determined to be non-irritating and non-sensitizing. No irritation or sensitization was observed in another HRIPT performed on 55 subjects using an undiluted mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%).

A ROS assay performed to test the photoreactivity of Houttuynia Cordata Extract (1,3-butylene glycol extract; concentration of 50 µg/ml) gave negative results. A 3T3 NRU assay gave non-phototoxic results when tested with an undiluted mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%).

A HET-CAM assay using an aqueous extract of *Houttuynia cordata* (dose concentrations not stated) showed no signs of hemorrhage or coagulation in blood vessels. These results indicate the extract did not cause ocular irritation under the tested conditions.

DISCUSSION

To be developed.

CONCLUSION

To be determined.

TABLES

Table 1. Definitions and reported function[1]

Ingredient/CAS No.	Definition	Function(s)
Houttuynia Cordata Extract (164288-50-0)	Houttuynia Cordata Extract is the extract of the aerial parts of the herb, *Houttuynia cordata.*	Skin-Conditioning Agent - Miscellaneous
Houttuynia Cordata Flower/Leaf/ Stem Water (164288-50-0)	Houttuynia Cordata Flower/Leaf/Stem Water is an aqueous solution of the steam distillate obtained from the flowers, leaves and stems of *Houttuynia cordata.*	Antimicrobial Agent Antioxidant Fragrance Ingredient Skin-Conditioning Agent - Miscellaneous
Houttuynia Cordata Leaf Extract	Houttuynia Cordata Leaf Extract is the extract of the leaves of *Houttuynia cordata*.	Antiacne Agent Antioxidant Hair Conditioning Agent Humectant Skin Protectant Skin-Conditioning Agent - Emollient Skin-Conditioning Agent - Humectant Skin-Conditioning Agent - Miscellaneous
Houttuynia Cordata Leaf Water	Houttuynia Cordata Leaf Water is an aqueous solution of the steam distillate obtained from the leaves of *Houttuynia cordata.*	Skin-Conditioning Agent - Humectant Skin-Conditioning Agent - Miscellaneous
Houttuynia Cordata Powder (164288-50-0)	Houttuynia Cordata Powder is the powder obtained from the aerial parts of *Houttuynia cordata.*	Skin-Conditioning Agent - Miscellaneous
Houttuynia Cordata Water (164288-50-0)	Houttuynia Cordata Water is the aqueous solution of the steam distillate of the whole plant, *Houttuynia cordata*.	Fragrance Ingredient

Table 2. Commonly found chemical constituents of *Houttuynia cordata*[3,8,9]

Constituent Group	Constituent	Found in Plant Part (amount)
volatile oils	decanoyl acetaldehyde, methyl nonyl ketone, laurl aldehyde, decanal, α-pinene, camphene, β-pinene, β-cinnamene, lobenyl acetate, limonene, geranyl, 4-pinoresinol, nonyl alcohol, geranyl oxide	leaves (66.83% volatile oil), stems (94.55% volatile oil)
organic acids	gallic acid, *p*-hydroxybenzoic acid, vanillic acid, butyric acid, *p*-coumaric acid, chlorogenic acid, ferulic acid, palmitic acid, oleic acid, stearic acid, ursolic acid, caprylic acid, saponins, tannins, steroidal compounds	leaves (NR)
polyphenols	protocatechuic acid, chlorogenic acid, methyl *p*-hydroxybenzoate, vanillin, methyl vanillate, *trans*-methyl ferulate, procyanidin B, catechin, quinic acid, and houttuynamide A	leaves (8.2 mg/g), stems (9.4 mg/g)
flavonoids	quercitrin, isoquercitrin, hyperoside, rutin, hyperin, vitexin, afzelin, narirutin, kaempferitrin, kaempferol, chrysosplenol-D, 5-hydroxy-3,3,4,7-tetramethoxyflavone, kaempferol-3,7,4-trimethyl ether	leaves (24.68 μg/ml), stems (39.97 μg/ml)
alkaloids	cepharanone B, piperolactam A, aristolactam A, 4,5-dioxodehydroasimilobine, norcepharadione B, cepharadione B, aurantiamide benzoate, aurantiamide acetate, *N*-transferuloyltyramine, aurantiamide, *N*-phenethylbenzamide	aerial parts (NR)
polysaccharides	arabinose, galactose, glucose, rhamnose, galacturonic acid, glucuronic acid, mannose, xylose, fucose	aerial parts (NR)

NR = not reported

Table 3. Frequency and concentration of use according to likely duration and exposure and by product category[11-13]

	# of Uses	Max Conc of Use	# of Uses	Max Conc of Use	# of Uses	Max Conc of Use
	RLD (2025)	% (2025)	RLD (2025)	% (2025)	RLD (2025)	% (2025)
	Houttuynia Cordata Extract		Houttuynia Cordata Flower/Leaf/Stem Water		Houttuynia Cordata Leaf Extract	
Totals*	**2285**	**0.000001 – 1.5**	**22**	**NR**	**2**	**NR**
summarized by likely duration and exposure**						
Duration of Use						
Leave-On	*1823*	*0.00008 – 1.5*	*18*	*NR*	*1*	*NR*
Rinse-Off	*835*	*0.000001*	*5*	*NR*	*NR*	*NR*
Diluted for (Bath) Use	*4*	*0.004*	*NR*	*NR*	*1*	*NR*
Unknown	*50*	*NR*	*NR*	*NR*	*NR*	*NR*
Exposure Type						
Baby Products	25	NR	NR	NR	NR	NR
Children's Makeup	1	NR	NR	NR	NR	NR
Eye Area	54	0.0008 – 0.0027	NR	NR	NR	NR
Incidental Ingestion	47	NR	NR	NR	NR	NR
Mucous Membrane	122	0.004	NR	NR	1	NR
Incidental Inhalation-Spray	10; 678[a]; 1144[b]	NR	5[a]; 16[b]	NR	1[a]	NR
Incidental Inhalation-Airbrush	NR	NR	NR	NR	NR	NR
Incidental Inhalation-Powder	6; 1144[b]; 18[c]	0.00008 – 1.5[c]	16[b]	NR	NR	NR
Dermal Contact	2287	0.000001 – 1.5	23	NR	2	NR
Deodorant (underarm)	1 (not spray); 2 (spray)	NR	NR	NR	NR	NR
Hair - Non-Coloring	278	NR	NR	NR	NR	NR
Hair-Coloring	35	NR	NR	NR	NR	NR
Nail	5	NR	NR	NR	NR	NR
Other Preparations (Unknown Exposure Type)	50	NR	NR	NR	NR	NR
as reported by product category						
Baby Products						
Baby Shampoos	4	NR				
Baby Lotions/Oils/Powders/Creams	18	NR				
Other Baby Products	3 (r.o.)	NR				
Bath Preparations (diluted for use)						
Bath Oils, Tablets, and Salts	NR	0.004				
Other Bath Preparations	4	NR			1	NR
Eye Makeup Preparations (not children's)						
Eye Lotion	16	0.0008 – 0.0027				
Eye Makeup Remover	6	NR				
False Eyelashes	2	NR				
Mascara	12	NR				
Eyelash and Eyebrow Adhesives/Glues/Sealants	3	NR				
Eyelash and Eyebrow Preparations (primers, conditioners, serums, fortifiers)	10	NR				
Eyelash Cleansers	1	NR				
Other Eye Makeup Preparations	4	NR				
Fragrance Preparations						
Cologne and Toilet Water	1	NR				
Perfumes	4	NR				
Other Fragrance Preparation	1	NR				
Hair Preparations (non-coloring)						
Hair Conditioners	8 (l.o.); 47 (r.o.)	NR				

Table 3. Frequency and concentration of use according to likely duration and exposure and by product category[11-13]

	# of Uses RLD (2025)	Max Conc of Use % (2025)	# of Uses RLD (2025)	Max Conc of Use % (2025)	# of Uses RLD (2025)	Max Conc of Use % (2025)
Hair Sprays (aerosol fixatives)	4	NR				
Hair Straighteners	2	NR				
Rinses (non-coloring)	8	NR				
Shampoos (non-coloring)	1 (l.o.); 116 (r.o.)	NR				
Tonics, Dressings, Other Hair Grooming Aids	32	NR				
Other Hair Preparations	34 (l.o.); 22 (r.o.)	NR				
Hair Coloring Preparations						
Hair Dyes and Colors (all types requiring caution statements and patch tests)	28	NR				
Hair Rinses (coloring)	1 (r.o.)	NR				
Hair Shampoos (coloring)	2 (r.o.)	NR				
Hair Bleaches	1	NR				
Other Hair Coloring Preparation	3 (r.o.)	NR				
Makeup Preparations (not eye or children's)						
Face Powders	6					
Foundations	5 (traditional application)	0.00008 (traditional application)				
Lipsticks and Lip Glosses	42	NR				
Makeup Bases	14 (traditional application)	NR				
Makeup Fixatives	11	NR				
Other Makeup Preparations	6 (traditional application)	NR				
Makeup Preparations for Children (not eye)						
Children's Lipsticks and Lip Glosses	1	NR				
Manicuring Preparations						
Nail Creams and Lotions	4	NR				
Nail Polish and Enamel Removers	1	NR				
Oral Hygiene Products						
Dentifrices	4	NR				
Personal Cleanliness						
Bath Soaps and Body Washes	29	NR				
Deodorants (underarm)	1 (not spray); 2 (spray)	NR				
Douches	6	NR				
Other Personal Cleanliness Products	6 (l.o.); 30 (r.o.)	NR				
Shaving Preparations						
Aftershave Lotions	2	NR				
Shaving Cream (aerosol, brushless, lather)	1	NR				
Skin Care Preparations						
Cleansing	293	NR	2	NR		
Depilatories	4	0.000001				
Face and Neck (excluding shaving preps)	885 (l.o.); 100 (r.o.)	0.00008 – 1.5 (l.o.; not spray)	14 (l.o.)	NR		
Body and Hand (excluding shaving preps)	70 (l.o.); 11 (r.o.)	0.056 (l.o.; not spray)				
Foot Powders and Sprays	2	NR				
Moisturizing	425	0.0008 – 0.0027 (not spray)	2	NR	1	NR
Night	13	NR				

Table 3. Frequency and concentration of use according to likely duration and exposure and by product category[11-13]

	# of Uses	Max Conc of Use	# of Uses	Max Conc of Use	# of Uses	Max Conc of Use
	RLD (2025)	% (2025)	RLD (2025)	% (2025)	RLD (2025)	% (2025)
Paste Masks (mud packs)	79	NR				
Skin Fresheners	40	NR				
Other Skin Care Preparations	117 (l.o.); 43 (r.o.)	NR	2 (l.o.); 3 (r.o.)	NR		
Suntan Preparations						
Suntan Gels, Creams, and Liquids	21	NR				
Other Preparations (i.e., those that do not fit another category)	50	NR				
	Houttuynia Cordata Leaf Water		**Houttuynia Cordata Powder**		**Houttuynia Cordata Water**	
Totals*	**7**	**NR**	**39**	**NR**	**15**	**NR**
summarized by likely duration and exposure**						
Duration of Use						
Leave-On	*6*	*NR*	*12*	*NR*	*17*	*NR*
Rinse-Off	*4*	*NR*	*36*	*NR*	*2*	*NR*
Diluted for (Bath) Use	*NR*	*NR*	*NR*	*NR*	*NR*	*NR*
Unknown	*NR*	*NR*	*1*	*NR*	*NR*	*NR*
Exposure Type						
Baby Products	NR	NR	4	NR	NR	NR
Children's Makeup	NR	NR	NR	NR	NR	NR
Eye Area	NR	NR	NR	NR	NR	NR
Incidental Ingestion	NR	NR	NR	NR	NR	NR
Mucous Membrane	NR	NR	4	NR	NR	NR
Incidental Inhalation-Spray	6[a]; 2[b]	NR	17[a]; 4[b]	NR	1[a]; 10[b]	NR
Incidental Inhalation-Airbrush	NR	NR	NR	NR	NR	NR
Incidental Inhalation-Powder	2[b]	NR	4[b]; 4[c]	NR	10[b]	NR
Dermal Contact	10	NR	48	NR	19	NR
Deodorant (underarm)	NR	NR	NR	NR	NR	NR
Hair - Non-Coloring	NR	NR	NR	NR	NR	NR
Hair-Coloring	NR	NR	NR	NR	NR	NR
Nail	NR	NR	NR	NR	NR	NR
Other Preparations (Unknown Exposure Type)	NR	NR	1	NR	NR	NR
as reported by product category						
Baby Products						
Baby Shampoos						
Baby Lotions/Oils/Powders/Creams			4	NR		
Other Baby Products						
Bath Preparations (diluted for use)						
Bath Oils, Tablets, and Salts						
Other Bath Preparations						
Eye Makeup Preparations (not children's)						
Eye Lotion						
Eye Makeup Remover						
False Eyelashes						
Mascara						
Eyelash and Eyebrow Adhesives/Glues/Sealants						
Eyelash and Eyebrow Preparations (primers, conditioners, serums, fortifiers)						
Eyelash Cleansers						
Other Eye Makeup Preparations						

Table 3. Frequency and concentration of use according to likely duration and exposure and by product category[11-13]

	# of Uses RLD (2025)	Max Conc of Use % (2025)	# of Uses RLD (2025)	Max Conc of Use % (2025)	# of Uses RLD (2025)	Max Conc of Use % (2025)
Fragrance Preparations						
Cologne and Toilet Water						
Perfumes						
Other Fragrance Preparation						
Hair Preparations (non-coloring)						
Hair Conditioners						
Hair Sprays (aerosol fixatives)						
Hair Straighteners						
Rinses (non-coloring)						
Shampoos (non-coloring)						
Tonics, Dressings, Other Hair Grooming Aids						
Other Hair Preparations						
Hair Coloring Preparations						
Hair Dyes and Colors (all types requiring caution statements and patch tests)						
Hair Rinses (coloring)						
Hair Shampoos (coloring)						
Hair Bleaches						
Other Hair Coloring Preparation						
Makeup Preparations (not eye or children's)						
Face Powders						
Foundations					3 (traditional application)	NR
Lipsticks and Lip Glosses						
Makeup Bases					3 (traditional application)	NR
Makeup Fixatives						
Other Makeup Preparations						
Makeup Preparations for Children (not eye)						
Children's Lipsticks and Lip Glosses						
Manicuring Preparations						
Nail Creams and Lotions						
Nail Polish and Enamel Removers						
Oral Hygiene Products						
Dentifrices						
Personal Cleanliness						
Bath Soaps and Body Washes			2	NR		
Deodorants (underarm)						
Douches						
Other Personal Cleanliness Products			1 (l.o.); 1 (r.o.)	NR		
Shaving Preparations						
Aftershave Lotions						
Shaving Cream (aerosol, brushless, lather)						
Skin Care Preparations						
Cleansing	2	NR	12	NR	2	NR
Depilatories						
Face and Neck (excluding shaving preps)	2 (l.o.); 1 (r.o.)	NR	4 (l.o.); 7 (r.o.)	NR	8 (l.o.)	NR
Body and Hand (excluding shaving preps)						
Foot Powders and Sprays						

Table 3. Frequency and concentration of use according to likely duration and exposure and by product category[11-13]

	# of Uses	Max Conc of Use	# of Uses	Max Conc of Use	# of Uses	Max Conc of Use
	RLD (2025)	% (2025)	RLD (2025)	% (2025)	RLD (2025)	% (2025)
Moisturizing	4	NR	3	NR	1	NR
Night						
Paste Masks (mud packs)			7	NR		
Skin Fresheners						
Other Skin Care Preparations	1	NR	7 (r.o.)	NR	2 (l.o.)	NR
Suntan Preparations						
Suntan Gels, Creams, and Liquids						
Other Preparations (i.e., those that do not fit another category)			1	NR		

NR – not reported
l.o. – leave-on; r.o. – rinse-off
*The sum of the counts given for duration of use and by exposure type, and the sum of the frequency reported by product category, may not equal the sum of total uses because each ingredient may be used in cosmetic formulations that are reported under more than one product category.
**Likely duration and exposure are derived from survey data based on product category (see Use Categorization https://www.cir-safety.org/cir-findings)
[a] It is possible these products are sprays, but it is not specified whether the reported uses are sprays.
[b] Not specified whether a spray or a powder, but it is possible the use can be as a spray or a powder, therefore the information is captured in both categories
[c] It is possible these products are powders, but it is not specified whether the reported uses are powders.

Table 4. Acute oral toxicity studies

Test Article	Vehicle	Animals/Group	Concentration/Dose	Protocol	Results	Reference
a *Houttuynia cordata* extract (95% ethanol)	deionized water	Sprague-Dawley rats (12/sex)	2000 mg/kg	OECD TG 423; treatment administered by gavage; control group treated with water	No mortality or toxicity observed; no significant difference between test and control groups	[20]
a *Houttuynia cordata* extract (70% ethanol)	none stated	Rats (strain not stated; 4 total)	50,000 mg/kg bw	Exploratory assay; treatment administered by gavage; observed for 72 h	No mortality observed	[21]
a *Houttuynia cordata* extract (70% ethanol)	none stated	Rats (strain not stated; 6/sex/group)	0 and 50,000 mg/kg bw	Treatment administered by gavage; observed for 14 d	Mild agitation, fear, fatigue, increased abdominal muscle contractions in first 30 min; no mortality or significant weight changes between test and control groups	[21]

OECD = Organisation for Economic Co-operation and Development; TG = test guideline

Table 5. Repeated-dose oral toxicity studies

Test Article	Vehicle	Animals/Group	Study Duration	Dose/ Concentration	Protocol	Results	Reference
a *Houttuynia cordata* extract (95% ethanol)	deionized water	Sprague-Dawley rats (6/sex/group)	28 d	250, 500 and 1000 mg/kg/d	OECD TG 407; treatment administered by gavage; control group treated with water	No significant changes during first week of treatment; test groups exhibited piloerection and decreased activity in second week; mortalities observed were 2 males in 500 mg/kg/d group, 2 males and 1 female in 1000 mg/kg/d group; relative liver weight of male rats in 1000 mg/kg/d group was significantly higher than the control; all rats in the 1000 mg/kg/d group had significant increase in ALT and AST; liver vacuolar degeneration, infiltration of the inflammatory cells in the liver, and focal necrosis of renal epithelial cells were observed in the 1000 mg/kg/d group; male rats were more susceptible to toxicity than females; NOAEL was concluded to be 250 mg/kg/d	[20]
a *Houttuynia cordata* extract (70% ethanol)	none stated	Rabbits (strain not stated; 6/group)	28 d	300 and 1500 mg/kg bw/d	Treatment administered once daily; control group treated with water	No significant changes observed between test and control groups	[21]
a *Houttuynia cordata* leaf extract (50% ethanol)	none stated	F344/DuCrj rats (6/sex/group)	2 wk	0, 0.5, 1.5 and 5.0%	Preliminary feeding study; treatment was mixed into diet and administered orally	No significant changes observed in any of the groups	[22]
a *Houttuynia cordata* leaf extract (50% ethanol)	none stated	F344/DuCrj rats (10/sex/group)	13 wk	0, 0.5, 1.5 and 5.0%	Feeding study; treatment was mixed into diet and administered orally	No mortality observed for any groups; serum BUN levels increased significantly in the 5.0% female group; significant change in kidney weight in 5.0% male and female groups; significant mineralization at the cortico-medullary junction of the kidneys of females in 1.5 and 5.0% groups, and males in the 5.0% group, when compared to control; NOAEL was calculated to be 350 mg/kg/d (0.5 %) for females and 999 mg/kg/d (1.5 %) for males	[22]

ALT = alanine transaminase; AST = aspartate transaminase; BUN = blood urea nitrogen; NOAEL = no-observed-adverse-effect-level; OECD = Organisation for Economic Co-operation and Development; TG = test guideline

Table 6. Genotoxicity studies

Test Article	Vehicle	Concentration/Dose	Test System	Protocol	Results	Reference
IN VITRO						
Gene Mutation						
a *Houttuynia cordata* leaf extract (80% methanol)	DMSO	312.5, 625, 1250, 2500, and 5000 µg/plate	*Salmonella typhimurium* TA98, TA100, TA1535, and TA1537 and *Escherichia coli* WP2urvA$^-$	Reverse mutation assay; performed with and without metabolic activation; appropriate positive and negative controls used	Non-mutagenic	[24]
Chromosomal Damage						
a *Houttuynia cordata* leaf extract (80% methanol)	DMSO	1.25, 2.5, and 5 µg/ml	Chinese hamster ovary cells	Chromosomal aberration assay; performed with and without metabolic activation; appropriate positive and negative controls used	Non-genotoxic; anticlastogenic effects observed in treatment groups with and without metabolic activation	[24]
IN VIVO						
Chromosomal Damage						
a *Houttuynia cordata* leaf extract (80% methanol)	DMSO	0.5, 1, and 2 g/kg	Male ICR mice (5/group)	Bone marrow micronucleus assay; mice injected intraperitoneally with test substance; appropriate positive and negative controls used	Non-genotoxic	[24]

DMSO = dimethyl sulfoxide

Table 7. Dermal irritation and sensitization studies

Test Article	Vehicle	Concentration/Dose	Test Population/System	Protocol	Results	Reference
IRRITATION						
IN VITRO						
ingredient mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%)	none	100%	reconstructed human epidermis (no other details provided)	OECD TG 439; in vitro skin irritation reconstructed human epidermis assay	Test substance is not classified as a skin irritant	[5]
SENSITIZATION						
HUMAN						
an emulsion containing 0.0048% Houttuynia Cordata Extract	NR	about 0.05 ml/cm^2	55 subjects (13 males, 42 females)	HRIPT; no other details provided	Non-irritating and non-sensitizing; no dermal reactions observed	[34]
ingredient mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%))	none	100%	55 subjects (no other details provided)	HRIPT; no other details provided	Non-irritating and non-sensitizing; no evidence of induced allergic contact dermatitis	[5]
PHOTOXICITY						
IN VITRO						
Houttuynia Cordata Extract (1,3-butylene glycol extract)	NR	50 µg/ml	NR	OECD TG 495; ROS assay for photoreactivity	Negative	[6]
ingredient mixture comprising butylene glycol (49.6%), water (49.6%), and Houttuynia Cordata Extract (0.8%)	none	100%	NR	OECD TG 432; 3T3 NRU phototoxicity assay	Non-phototoxic	[5]

HRIPT = human repeated insult patch test; NR = not reported; NRU = neutral red uptake; OECD = Organisation for Economic Co-operation and Development; ROS = reactive oxygen species; TG = test guideline

REFERENCES

1. Personal Care Products Council. 2026. *International Cosmetic Ingredient Dictionary*. https://incipedia.personalcarecouncil.org/winci/. Date Accessed: February 27, 2026.

2. Gao S, Wang W, Li J, Wang Y, Shan Y, Tan H. Unveiling polysaccharides of *Houttuynia cordata* Thunb.: extraction, purification, structure, bioactivities, and structure-activity relationships. *Phytomedicine*. 2025;138:156436.

3. Wei P, Luo Q, Hou Y, Zhao F, Li F, Meng Q. *Houttuynia cordata* Thunb.: a comprehensive review of traditional applications, phytochemistry, pharmacology and safety. *Phytomedicine*. 2024;123:155195.

4. U.S. Department of Agriculture. Dr. Duke's Phytochemical and Ethnobotanical Databases - *Houttuynia cordata* (Saururaceae). https://phytochem.nal.usda.gov/plant-houttuynia-cordata . Date Accessed: November 13, 2025.

5. Anonymous. 2026. Summary Information: Houttuynia Cordata Extract. February 2026. [Unpublished data submitted by Personal Care Products Council on February 10, 2026].

6. Anonymous. 2026. Summary Information: Houttuynia Cordata Extract. [Unpublished data submitted by Personal Care Products Council on January 13, 2026].

7. Huang J, Huang C, Liebman M. Oxalate contents of commonly used Chinese medicinal herbs. *Journal of Traditional Chinese Medicine*. 2015;35(5):594–599.

8. Huang X, Yu P, Luo Y, et al. The nutritional value, application status and challenges of *Houttuynia cordata* Thunb (*H. cordata*). *Phytochem Rev*. 2025;24(6):5463–5485.

9. Yang Z, Ji P, Li C, et al. Research progress on the chemical constituents and pharmacological effects of *Houttuynia cordata* Thunb and a predictive analysis of quality markers. *Current Issues in Molecular Biology*. 2025;47(1):18.

10. United States Food and Drug Administration. Federal Food, Drug, and Cosmetic Act Section 612 Title 21.

11. Hicks J., Eisenmann C., Nikitakis J., Kim D., Flores W. 2025. Personal Care Products Council (PCPC) RLD Mapping Project Report. Washington, DC. [Analysis results provided as a courtesy to CIR].

12. Personal Care Products Council. 2025. Concentration of use by FDA product category - *Houttuynia cordata*-derived ingredients. [Unpublished data submitted by Personal Care Products Council on December 12, 2025].

13. US Food and Drug Administration (FDA) Office of Colors & Cosmetics (OCAC). 2025. Data from: Registration and Listing of Cosmetic Product Facilities and Products. College Park, MD [Obtained under the Freedom of Information Act].

14. EUR-Lex. 2022. Commission implementing decision (EU) 2022/677 of 31 March 2022 laying down rules for the application of Regulation (EC) no 1223/2009 of the European Parliament and of the Council as regards the glossary of common ingredient names for use in the labelling of cosmetic products (text with EEA relevance). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022D0677. Date Accessed: Dec 12, 2025.

15. Pradhan S, Rituparna S, Dehury H, Dhall M, Singh YD. Nutritional profile and pharmacological aspect of *Houttuynia cordata* Thnub. and their therapeutic applications. *Pharmacological Research-Modern Chinese Medicine*. 2023;9:10031.

16. Kumar M, Prasad S, Hemalatha S. A current update on the phytopharmacological aspects of *Houttuynia cordata* Thunb. *Pharmacognosy Reviews*. 2014;8(15):22–35.

17. Wu Z, Deng X, Hu Q, et al. *Houttuynia cordata* Thunb: an ethnopharmacological review. *Front Pharmacol*. 2021;12:714694.

18. Kim J, Shin JY, Choi Y, et al. Hair growth promoting effect of *Hottuynia cordata* extract in cultured human hair follicle dermal papilla cells. *Biological and Pharmaceutical Bulletin*. 2019;42(10):1665–1673.

19. Wang L, Cui X, Cheng L, et al. Adverse events to *Houttuynia* injection: a systematic review. *Journal of Evidence-Based Medicine*. 2010;3(3):168–176.

20. Chen H, Sha X, Luo Y, et al. Acute and subacute toxicity evaluation of *Houttuynia cordata* ethanol extract and plasma metabolic profiling analysis in both male and female rats. *J Appl Toxicol*. 2021;41(12):2068–2082.

21. Hung TV, Thang PNT, Phuong NTT, Hien HM, Pham DT, Huynh DTM. Extractions, standardizations, and in-vivo toxicological investigations of the Vietnamese fish mint (*Houttuynia cordata* Thunb.). *Tropical Journal of Natural Product Research*. 2023;7(10):4215–4225.

22. Yoshino H, Imai N, Nabae K, et al. Thirteen-week oral toxicology study of dokudami extract (*Houttuynia cordata* Thunb.) in F344/DuCrj rats. *Journal of Toxicologic Pathology*. 2005;18(4):175–182.

23. Liu Y, Yang G, Yang C, et al. The mechanism of *Houttuynia cordata* embryotoxicity was explored in combination with an experimental model and network pharmacology. *Toxins (Basel)*. 2023;15(1):73.

24. Kang CK, Hah DS, Kim CH, Kim. E., Kim. J. S. Evaluation of genotoxicity of extracts of *Houttuynia cordata* Thunb. *American Journal of Chinese Medicine*. 2012;40(5):1019–1932.

25. Satthakarn S, Hladik F, Promsong A, Nittayananta W. Vaginal innate immune mediators are modulated by a water extract of *Houttuynia cordata* Thunb. *BMC Complementary and Alternative Medicine*. 2015;15(1):183.

26. Phosri S, Kiattisin K, Intharuksa A, Janon R, Na Nongkhai T, Theansungnoen T. Anti-aging, anti-acne, and cytotoxic activities of *Houttuynia cordata* extracts and phytochemicals analysis by LC-MS/MS. *Cosmetics*. 2022;9(6):136.

27. Inthi P, Pandith H, Kongtawelert P, Banjerdpongchai R. Anti-cancer effect and active phytochemicals of *Houttuynia cordata* Thunb. against human breast cancer cells. *Asian Pac J Cancer Prev*. 2023;24(4):1265–1274.

28. Subhawa S, Chewonarin T, Banjerdpongchai R. The effects of *Houttuynia cordata* Thunb and *Piper ribesioides* wall extracts on breast carcinoma cell proliferation, migration, invasion and apoptosis. *Molecules*. 2020;25(5):1196.

29. Subhawa S, Naiki-Ito A, Kato H, et al. Suppressive effect and molecular mechanism of *Houttuynia cordata* Thunb. extract against prostate carcinogenesis and castration-resistant prostate cancer. *Cancers (Basel)*. 2021;13(14):3403.

30. Yanarojana M, Nararatwanchai T, Thairat S, Tancharoen S. Antiproliferative activity and induction of apoptosis in human melanoma cells by *Houttuynia cordata* Thunb extract. *Anticancer Res*. 2017;37(12):6619–6628.

31. Song Z, Fang J, Wang D, et al. Inhibition of LPS-induced skin inflammatory response and barrier damage via MAPK/NF-κB signaling pathway by *Houttuynia cordata* Thunb fermentation broth. *Foods*. 2024;13(10):1470.

32. Sekita Y, Murakami K, Yumoto H, et al. Preventive effects of *Houttuynia cordata* extract for oral infectious diseases. *BioMed Research Intl*. 2016;2016(1):2581876.

33. Cheng D, Sun L, Zou S, et al. Antiviral effects of *Houttuynia cordata* polysaccharide extract on murine norovirus-1 (MNV-1)-a human norovirus surrogate. *Molecules*. 2019;24(9):1835.

34. Anonymous. 2003. Summary Information: HRIPT data for the serum containing 0.0048% Houttuynia Cordata Extract. [Unpublished data submitted by Personal Care Products Council on January 8, 2026].

Concentration of Use by FDA Product Category[1] - *Houttuynia cordata*-Derived Ingredients*

Houttuynia Cordata Callus Extracellular Vesicles
Houttuynia Cordata Extract
Houttuynia Cordata Flower/Leaf Extract
Houttuynia Cordata Flower/Leaf/Stem Extract
Houttuynia Cordata Flower/Leaf/Stem Water
Houttuynia Cordata Leaf Extract
Houttuynia Cordata Leaf Vesicles
Houttuynia Cordata Leaf Water
Houttuynia Cordata Leaf/Stem Extract
Houttuynia Cordata Powder
Houttuynia Cordata Protein Extract
Houttuynia Cordata Vesicles
Houttuynia Cordata Water

Ingredient	Product Category	Maximum Concentration of Use
Houttuynia Cordata Extract	Bath oils, tablets and salts	0.004%
Houttuynia Cordata Extract	Eye lotions	0.0008-0.0027%
Houttuynia Cordata Extract	Foundations Traditional	0.00008%
Houttuynia Cordata Extract	Depilatories	0.000001%
Houttuynia Cordata Extract	Face and neck products (not spray) Leave-on	0.00008-1.5%
Houttuynia Cordata Extract	Body and hand products (not spray) Leave-on	0.056%
Houttuynia Cordata Extract	Moisturizing products (not spray)	0.0008-0.0027%

*Ingredients included in the title of the table but not found in the table were included in the concentration of use survey, but no uses were reported.

Information collected in 2025
Table prepared: September 24, 2025

[1] The FDA cosmetic product categories under MoCRA were used for this survey.

Personal Care Products Council
Committed to Safety, Quality & Innovation

Memorandum

TO: Bart Heldreth, Ph.D.
Executive Director - Cosmetic Ingredient Review

FROM: Carol Eisenmann, Ph.D.
Personal Care Products Council

DATE: January 8, 2026

SUBJECT: Houttuynia Cordata Extract

Anonymous. 2003. Summary Information: HRIPT data for the serum containing 0.0048% Houttuynia Cordata Extract.

Summary Information

HRIPT data for the serum containing 0.0048% Houttuynia Cordata Extract

Test procedure:	Human repeated insult patch test
Date of final report:	March 21, 2003
Test article:	Emulsion containing 0.0048% Houttuynia Cordata Extract
Amount of product applied:	Approximately 0.05 mL/cm^2
Test subject：	55 subjects (13 males and 42 females)

Results: All 55 subjects did not exhibit any dermal reactions throughout the course of the entire study and had scores of "0".

The following Dermal Scoring System was used:

0 = No evidence of any effect
+ = Barely perceptible (Minimal, faint, uniform or spotty erythema)
1 = Mild (Pink, uniform erythema covering most of the contact site)
2 = Moderate (Pink-red erythema uniform in the entire contact site)
3 = Marked (Bright red erythema with/without petechiae or papules)
4 = Severe (Deep red erythema with/without vesiculation or weeping)

Conclusion: The test material did not demonstrate a potential for eliciting dermal irritation or inducing sensitization.

Personal Care Products Council
Committed to Safety, Quality & Innovation

Memorandum

TO: Bart Heldreth, Ph.D.
Executive Director - Cosmetic Ingredient Review

FROM: Carol Eisenmann, Ph.D.
Personal Care Products Council

DATE: January 13, 2026

SUBJECT: Houttuynia Cordata Extract

Anonymous. 2026. Summary Information: Houttuynia Cordata Extract.

January 2026

Summary Information: Houttuynia Cordata Extract

Method of Manufacture

INCI Name	The method of manufacture
Houttuynia Cordata Extract (ethanol)	Dried raw material⇒extract with ethanolic solution⇒filtration⇒ concentration⇒adjustment⇒sedimentation⇒filtration⇒adjustment ⇒packaging
Houttuynia Cordata Extract (ethanol/powder)	Dried raw material⇒extract with ethanolic solution⇒filtration⇒ concentration⇒add anhydrous sodium sulfate as vehicle⇒packaging
Houttuynia Cordata Extract (butylene glycol)	Dried raw material⇒extract with 1,3-butylene glycolic solution⇒ filtration⇒sedimentation⇒filtration⇒adjustment⇒packaging

Composition

INCI name	Composition
Houttuynia Cordata Extract (ethanol and butylene glycol extracts)	Tannins and Flavonoids Heavy metals：not more than 20 ppm Arsenic：not more than 2 ppm
Houttuynia Cordata Extract (ethanol/powder)	Tannins Heavy metals：not more than 10ppm Arsenic：not more than 2 ppm

Photoreactivity

INCI Name	Test Item	Concentration of test solution	Result	Method
Houttuynia Cordata Extract (butylene glycol extract described above)	Photosafety	50μg/mL	Negative	ROS (Reactive Oxygen Species) Assay for Photoreactivity （OECD TG495）

Personal Care Products Council
Committed to Safety, Quality & Innovation

Memorandum

TO: Bart Heldreth, Ph.D.
Executive Director - Cosmetic Ingredient Review

FROM: Carol Eisenmann, Ph.D.
Personal Care Products Council

DATE: February 10, 2026

SUBJECT: Houttuynia Cordata Extract

Anonymous. 2026. Summary Information: Houttuynia Cordata Extract. February 2026.

February 2026

Summary Information: Houttuynia Cordata Extract

1. Chemical properties and method of manufacturing

This product is a brown transparent liquid. It has slightly characteristic odor.

The ingredient contains tannins and flavonoids as its characteristic phytochemical constituents. They are identified by Qualitative reaction.

Method of manufacture: Add 1,3-butylene glycol solution to the aerial parts in the blooming season of *Houttuynia cordata* Thunb. (Saururaceae), extract, allow it to stand in a cold place, and filter after quality standardization to obtain the final product.

No synthetic reagents, preservatives, or chemical modifications are used. Residual solvent levels meet the specifications described in IFRA and general cosmetic ingredient quality guidelines.

2. Further composition and impurities

The ingredient mixture as sold to the cosmetics industry is composed of Butylene Glycol : Water : Houttuynia Cordata Extract (49.6 : 49.6 : 0.8).

Heavy metals comply with cosmetic ingredient standards (Heavy metals <20 ppm, Arsenic <2 ppm). (JSQI) No synthetic additives or preservatives are present.

3. Phototoxicity

Performed the test under the OECD guideline 432 In Vitro 3T3 NRU Phototoxicity Test.

The trade name mixture (described above) was tested neat (undiluted).

The sample can be assigned as non phototoxic.

4. Dermal irritation and sensitization

Performed the test under the OECD guideline 439 In Vitro Skin Irritation Reconstructed Human Epidermis Test Method.

The trade name mixture (described above) was tested neat (undiluted).

The sample must not be classified.

Human Repeated Insult Patch Test.

The study included 55 subjects, and the trade name mixture (described above) was tested neat (undiluted).

The sample did not induce skin irritation and did not show any evidence of induced allergic contact dermatitis.