CORI DOG RESEARCH NOTE 03

Preservation is a finished-product system

Why ingredient choice, manufacture, packaging, testing and ordinary use must be assessed together

EVIDENCE STATUS

Organization-authored structured evidence map. No statistical pooling was performed because the retained evidence units were heterogeneous or non-quantitative. This is not a meta-analysis, systematic review or peer-reviewed paper.

PREPARED BY

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SUGGESTED CITATION

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SCOPE BOUNDARY

Educational evidence synthesis only. Not veterinary advice, legal advice, a product recommendation, a safety verdict or a Cori formula disclosure.

Accessible canonical HTML: https://coridog.com/journal/research-notes/preservation-system-dog-grooming-formulas

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Related Journal guide: https://coridog.com/journal/dog-shampoo-ingredients-explained

The short answer

BOTTOM LINE

A preservative name on a label does not prove that a product is adequately protected. Preservation is a lifecycle system involving formulation risk, raw materials, manufacture, finished-product microbial quality, challenge testing, packaging, storage and foreseeable use. Different standards answer different questions, so one result cannot substitute for the whole evidence package.

Why this matters

A water-containing product can encounter microorganisms before filling, during storage or through ordinary use. Formula composition, pH, water activity, packaging and instructions affect which routes matter.

The most useful evidence separates prevention and control steps instead of treating one ingredient or one test as a certificate. Human-cosmetics standards offer a method framework, but they are not canine approval or a statement of pet-grooming law.

Four takeaways

01 A preservative ingredient is not a preserved product

CosIng records can identify reported preservative or chelating roles. They do not show concentration, pH, water activity, manufacturing hygiene, packaging exposure or test results for the finished formula.

Sources 8, 9, 10, 11.

02 Risk, limits and challenge tests answer different questions

ISO 29621 addresses low-risk assessment, ISO 17516 addresses microbiological quality limits, and ISO 11930 addresses antimicrobial protection of a finished cosmetic formulation. Passing one does not answer the others.

Sources 3, 4, 1, 2.

03 Packaging and ordinary use are part of the formula's exposure

A pump, open jar, repeated wet-hand contact, dilution and water ingress create different contamination opportunities. Evidence should match the marketed pack and instructions.

Sources 6, 7.

04 Standards have versions and must be checked

ISO 11930:2019 has Amendment 1:2022 and is marked for revision. ISO 17516:2014 remains current but is expected to be replaced by a Final Draft International Standard. Formal work must verify the current edition.

Sources 2, 4, 5.

Key terms and a worked example

Technical vocabulary is useful only when readers can see what each term adds to the question. These definitions are intentionally narrow.

Bioburden	Microorganisms present in a raw material, bulk product, environment or finished product at a particular point in the process.
Water activity	A measure related to how much water is available for microbial growth. It is not the same as the percentage of water in a formula.
Microbiological-limits test	A test of the microbial quality of a sample at the time tested. It does not by itself show how well the formula resists later contamination.
Challenge test	A defined test in which selected microorganisms are introduced to a finished formulation and their change over time is assessed against criteria.
Low-risk assessment	A product-specific assessment of whether formula and manufacturing characteristics make routine microbiological testing or protection needs different. It is not a label shortcut.

Example: pump bottle versus open jar

Two fictional water-containing grooming products use the same named preservative system. One is dispensed from a pump; the other is taken from a wide-mouth jar with wet hands.

1. The ingredient list is similar, but the contamination routes are not. The jar has repeated direct contact and a greater opportunity for water ingress during ordinary use.

2. That does not prove the pump is adequately protected or the jar is not. It changes the risk questions, packaging evaluation and in-use conditions that the evidence package should address.

BOUNDARY

A preservative name, pack format or single laboratory result cannot establish shelf life without product-specific stability and microbiology evidence.

Sources 3, 1, 6, 7.

Deeper analysis

This section connects the sources without treating different study designs, standards or regulatory documents as interchangeable.

Preservation starts before the finished product is tested

Raw-material quality, water quality, equipment cleaning, environmental controls and filling practices influence the microorganisms entering the system. A finished-product preservative should not be expected to compensate for uncontrolled manufacture.

Product risk also depends on formulation features such as pH and water activity. A label does not reveal these values or the interaction between preservatives, chelators, surfactants and other ingredients.

Sources 3, 6, 7.

Three methods answer three different questions

A low-risk assessment asks whether the product's characteristics make microbial growth or testing needs different. A microbiological-limits test asks about the microbial quality of the tested sample. A challenge test asks how a finished formulation responds after defined microorganisms are introduced.

These layers are related but not interchangeable. A satisfactory limits result today does not show resistance to contamination tomorrow. A challenge-test result does not replace manufacturing controls or long-term stability. A low-risk decision needs documented product-specific reasoning.

Sources 3, 4, 1, 2.

Packaging and foreseeable use change contamination routes

A sealed pump, flip-top bottle, open jar and refill pouch expose a formula differently. Use with wet hands, storage in a warm bathroom, dilution in another container and accidental water ingress can add routes that a pristine laboratory sample does not represent.

Evidence should therefore describe the marketed pack, instructions and any in-use study or simulation. If consumers are told to dilute a concentrate, the quality of the dilution water, container and holding time become part of the practical system.

Sources 6, 7.

Shelf life needs more than antimicrobial protection

Microbiological protection is one part of stability. Physical separation, viscosity, colour, odour, packaging compatibility and chemical change may also affect whether a product remains fit for its intended use.

A shelf-life or after-opening statement therefore needs evidence tied to the formula, pack and storage conditions. An ingredient list cannot provide that evidence, and one successful challenge test should not be presented as a complete shelf-life programme.

Sources 6, 7, 1.

Current edition checks are part of technical accuracy

ISO records change. ISO 11930:2019 has Amendment 1:2022 and is marked for revision. ISO 17516:2014 remains current at this review date but an FDIS replacement is in approval.

This note uses those records to explain method categories, not to reproduce proprietary standard content. Anyone conducting formal work must obtain and verify the current complete edition and applicable legal context.

Sources 1, 2, 4, 5.

Evidence map

Rows keep each source's useful contribution beside the conclusion it cannot support. Citation numbers refer to the source register.

SOURCE	DESIGN / SCOPE	WHAT IT CONTRIBUTES	IMPORTANT LIMIT
ISO 29621:2017 Source 3.	Risk assessment for microbiologically low-risk cosmetics	Provides a framework for deciding whether product characteristics support a low-risk classification.	Classification depends on product-specific information and does not prove shelf life or canine suitability.
ISO 17516:2014 Sources 4, 5.	Microbiological limits	Addresses microbiological quality of a tested cosmetic-product sample.	A snapshot limits result does not show how the product resists future contamination; replacement standard is under development.
ISO 11930:2019 and Amendment 1:2022 Sources 1, 2.	Finished-formulation antimicrobial protection	Provides a framework for evaluating antimicrobial protection of a finished cosmetic formulation.	Human-cosmetics standard; results remain method- and formula-specific and are not canine approval.
EU Cosmetics Regulation Annex I Source 6.	Human-cosmetics safety-report context	Places microbiological quality, preservation challenge-test information, stability and packaging within a wider product assessment.	Regulatory context does not automatically apply to dog-grooming products.
SCCS Notes of Guidance Source 7.	Human-cosmetics testing and safety-evaluation guidance	Supports product-specific interpretation of exposure, formulation and test information.	Guidance for human-cosmetics safety evaluation, not a pet-product compliance opinion.
CosIng ingredient records Sources 8, 9, 10, 11.	Sodium Benzoate, Phenoxyethanol, Potassium Sorbate and Disodium EDTA	Reports preservative, antimicrobial or chelating functions for named materials.	Presence of any name does not validate the full preservation system.

INTERPRETATION RULE

Terminology or mechanism evidence can generate a question. A defined finished-product claim needs evidence from the relevant finished product and conditions of use. None of those evidence units becomes a diagnosis.

Method and review question

REVIEW QUESTION

Which evidence layers are needed before a water-containing grooming formula can be described as adequately protected?

SEARCH SCOPE

Official human-cosmetics standards and regulatory guidance were mapped to the narrow formulation-method question. Direct CosIng records were included only to identify reported ingredient roles. Current amendment and replacement status was checked on 27 August 2026.

Recorded discovery routes

- Official standards: ISO 11930, ISO 11930 Amendment 1, ISO 29621 and ISO 17516
- EU official sources: Regulation 1223/2009 Annex I and SCCS Notes of Guidance
- CosIng records: Sodium Benzoate, Phenoxyethanol, Potassium Sorbate and Disodium EDTA

Search recorded 27 August 2026. The source register reports 11 retained sources. Exact candidate and exclusion counts are not claimed because a public screening log was not maintained.

Exclusion boundary

Preservative rankings, recipes, supplier concentration advice and sources that implied human-cosmetics standards were pet-product approvals were excluded.

Synthesis decision

Lifecycle evidence map organised by product risk, incoming controls, current microbial quality, finished-formulation antimicrobial protection, stability, packaging and foreseeable use. No efficacy meta-analysis applies to normative standards and regulatory documents.

REPORTING REGIME

This is a targeted, single-organization evidence map. Search routes, retained sources, source links beside each takeaway, the worked example, every evidence row and each deeper-analysis section, and limitations are disclosed. The note does not claim exhaustive searching, duplicate screening or full systematic-review compliance.

Questions for evidence users

Use these questions to test whether a conclusion is proportionate to the product, population, method and endpoint that were actually studied.

1	Was the complete marketed formula evaluated rather than one preservative ingredient?
2	Which product-specific microbial risks were identified before testing?
3	Which question did each method answer: low-risk classification, current quality or challenge protection?
4	Did testing reflect finished pH, packaging, dilution and foreseeable use?
5	Are manufacturing controls, stability and raw-material quality documented separately?
6	Were current method editions and the applicable pet-product legal context verified?

What stronger claims would need

- An adequately protected claim needs finished-product evidence with defined methods, acceptance criteria and marketed-pack context.

- A shelf-life claim needs microbiological, physical and chemical stability evidence for the formula, pack and storage conditions.

- A low-risk classification needs a documented product-specific assessment; it cannot be inferred from a marketing phrase or ingredient list.

Limitations and sources

Limitations

- This document maps human-cosmetics methodology and does not state pet-grooming law.

- Standards are copyrighted and may be revised; this note uses public scope and lifecycle records, not the full normative text.

- No proprietary formula, concentration, manufacturing, packaging or stability data were assessed.

- One organization performed the targeted map without independent duplicate review.

- No meta-analysis applies to standards, regulatory documents and terminology records.

Source register

1. ISO 11930:2019
Evaluation of antimicrobial protection of a cosmetic product; current base edition at review date. Open source

2. ISO 11930:2019/Amd 1:2022
Published amendment to ISO 11930:2019; official ISO lifecycle record. Open source

3. ISO 29621:2017
Risk assessment for microbiologically low-risk cosmetic products. Open source

4. ISO 17516:2014
Microbiological limits for cosmetics; remains current but is expected to be replaced. Open source

5. ISO/FDIS 17516
Edition 2 Final Draft International Standard in approval at the review date; not yet the published replacement. Supplemental boundary source. Open source

6. Regulation (EC) No 1223/2009
EU human-cosmetics framework and Annex I safety-report context. Open source

7. SCCS Notes of Guidance, 12th revision
Human-cosmetics testing and safety-evaluation context. Open source

8. CosIng record: Sodium Benzoate
Reported preservative, anticorrosive and fragrance functions. Open source

9. CosIng record: Phenoxyethanol
Reported antimicrobial and preservative functions. Open source

10. CosIng record: Potassium Sorbate
Reported preservative function. Open source

11. CosIng record: Disodium EDTA
Reported chelating and viscosity-controlling functions. Open source

CORRECTIONS AND UPDATES

This is version 1.1 of a living research note. Material source additions, corrections or scope changes produce a new version and review date. The accessible HTML page is the canonical source of truth.

Correction policy: Cori Dog editorial method