

## ELDERBERRY EXTRACT, OIL SOLUBLE PRESERVATIVE

*Suitable for beauty and personal care applications.*

**INCI:** Sambucus Nigra (Elderberry) Fruit Extract

**Extraction:** Lipophilic Fraction Isolation by Maceration, Demulsification and Filtration

**Shelf Life:** 1 Year

**Origin:** USA

### Background:

Elderberries are small, dark purple berries that grow on leafy shrubs. The shrubs produce small, white, fragrant flowers that develop into the deeply colored berries. Elderberries have been traditionally used in herbal medicine and as natural flavorings for jams, cordials and other foods and beverages.

Elderberries are rich in phenolics, anthocyanins, and flavonols that exhibit natural broad-spectrum antimicrobial properties. They are particularly effective against fungal microorganisms such as *C. albicans* and *A. brasiliensis*.

As the media continues to focus its attention on the risks of parabens, formaldehyde releasers, and other synthesized preservatives, product formulators and manufacturers are facing the growing challenge of procuring natural alternatives that provide suitable broad spectrum protection.

Praan Naturals is pleased to offer manufacturers and formulators a range of premium quality natural preservatives, including Elderberry Extract.

Elderberry Extract helps to resist microbial contamination and control microbial growth while simultaneously offering antioxidant and conditioning benefits to the skin.

### Properties:

- Product Form: Liquid
- Solubility: Oil
- Color: Clear, Slightly Hazy
- Odor: Faint, Slightly Bitter, Characteristic Aroma
- Viscosity: Medium
- Skin Conditioning
- Antimicrobial (Antibacterial and Antifungal)
- Microorganisms Tested:
  - *E. coli*
  - *P. aeruginosa*
  - *S. aureus*
  - *C. albicans*
  - *A. brasiliensis*



### Uses:

Elderberry Extract is well suited for use as a natural antimicrobial in the production of skin care, hair care and cosmetic formulations. It is particularly effective against fungal microorganisms. In addition to its application as a natural antimicrobial, it also helps to condition and protect the skin.

Elderberry Extract is oil soluble and can be incorporated into anhydrous or oil-based formulations. It is stable and efficacious at temperatures up to 167 degrees F (75 degrees C) and within a pH range of 3-8.

**Recommended Usage Rate:** 1 - 5%

*All formulations should be challenge tested by a qualified laboratory to ensure that each batch is properly preserved. The method of production, the specific components of the formulation, the environment in which the batch is formulated and the method of packaging all play a crucial role in the resulting shelf life of a batch. Therefore, we cannot guarantee your results when incorporating natural preservatives into your formulations. Only lab challenge testing can determine how and if a preservative is achieving the desired results.*

### Storage Information:

Mix well before use. Store in a cool, dry location. The ideal storage temperature range is 73-78 degrees Fahrenheit (23-25 degrees Celsius). Do not freeze.

**For more information regarding Praan Naturals Elderberry Extract and our range of preservatives and other natural ingredients, visit [PRAANnaturals.com](http://PRAANnaturals.com) or call our Customer Care department at (800) 340-0080 or (203) 702-2500.**





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#### Test Results

A modified Minimum Inhibitory Concentration (MIC) test was performed to evaluate the antifungal benefits of Elderberry Extract. The results demonstrate that concentrations between 1% and 5% are capable of inhibiting the growth of the test organisms.

	Time	1.0%	5.0%	+ Control	-Control
<b>A. brasiliensis</b>	24 Hours	G	G	G	NG
	48 Hours	G	G	G	NG
	5 Days	G	NG	G	NG
	7 Days	NG	NG	G	NG
<b>C. albicans</b>	24 Hours	G	G	G	NG
	48 Hours	NG	NG	G	NG
	5 Days	NG	NG	G	NG
	7 Days	NG	NG	G	NG

Table 1: Minimal Inhibitory Concentrations (MIC) for Elderberry Extract. G=Growth, NG=No Growth

A Double Challenge Test against Gram(+) and Gram(-) bacteria, as well as yeast and mold was completed to further elucidate the broad antimicrobial efficacy of Elderberry Extract.

	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>S. aureus</i>	<i>A. brasiliensis</i>	<i>C. albicans</i>
<b>Inoculum (Initial)</b>	7.5x10 <sup>5</sup>	2.7x10 <sup>5</sup>	7.2x10 <sup>5</sup>	2.1x10 <sup>5</sup>	2.4x10 <sup>5</sup>
<b>Day 0</b>	>99.999%	99.997%	>99.999%	99.996%	99.996%
<b>Day 7</b>	>99.999%	99.997%	>99.999%	99.996%	99.996%
<b>Day 14</b>	>99.999%	99.997%	>99.999%	99.996%	99.996%
<b>Day 21</b>	>99.999%	99.997%	>99.999%	99.996%	99.996%
<b>Day 28</b>	>99.999%	99.997%	>99.999%	99.996%	99.996%
<b>Inoculum (Reinoculated)</b>	8.3x10 <sup>5</sup>	5.2x10 <sup>5</sup>	6.8x10 <sup>5</sup>	2.4x10 <sup>5</sup>	2.3x10 <sup>5</sup>
<b>Day 7</b>	>99.999%	99.998%	>99.999%	99.996%	99.996%
<b>Day 14</b>	>99.999%	99.998%	>99.999%	99.996%	99.996%
<b>Day 21</b>	>99.999%	99.998%	>99.999%	99.996%	99.996%
<b>Day 28</b>	>99.999%	99.998%	>99.999%	99.996%	99.996%

Table 2: Percent reduction in viable microorganism concentration.

The data presented within this document is offered in good faith, and is based on information believed to be reliable. It is offered for informational and evaluation purposes only. Praan Naturals, LLC provides this product with the understanding that the purchaser will initiate their own testing to determine the suitability of this product for their intended purpose. Praan Naturals assumes no liability or responsibility for any damage to person or property resulting from the use of this product or the incorporation of this product into any final formulation or product. Statements concerning the use of this product are not to be construed as a recommendation, suggestion or inducement to use the product in any way or within any formulation that is unlawful to create or sell, that violates any applicable regulations or that infringes upon any patent. No liability arising out of such a use is assumed.

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