



Safety Statement

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Product Name: ACB Pisum Sativum Peptide

Code: 16810

INCI Name: Pisum Sativum (Pea) Peptide

ACB Pisum Sativum Peptide is manufactured by first processing (mechanical grinding/milling) *Pisum sativum* (pea) plant. The plant matter is then fermented with *Lactobacillus bulgaris*, before filtration to isolate the protein fraction.

Lactobacillus is a genus of microorganisms used to produce a variety of food products. It is a type of Lactic Acid Bacteria (LAB) and converts various sugars into lactic acid. Any existing LAB in ACB Pisum Sativum Peptide is removed by filtration. Since *Lactobacillus* species are intentionally used in food, they may be classified as Generally Recognized as Safe (GRAS) according to the FDA's Federal Food, Drug and Cosmetic Act.¹

The act states:

Any substance that is intentionally added to food is a food additive, that is subject to premarket review and approval by FDA, unless the substance is generally recognized, among qualified experts, as having been adequately shown to be safe under the conditions of its intended use, or unless the use of the substance is otherwise excluded from the definition of a food additive.¹

Pisum sativum (pea) peptide is of natural origin because it is derived from the pea plant. Pea protein isolates such as, *Pisum sativum* (pea) peptide, are commonly used in food and nutritional wellness products like nutritional bars, ready-to-drink beverages, powders, pastas, batters, and breadings.² Therefore, based on the above statement, *Pisum sativum* (pea) peptide may be classified as GRAS according to the FDA's Federal Food, Drug and Cosmetic Act.¹

Various studies have also been conducted to evaluate the safety and nutritional health benefits of *Pisum sativum* and its protein isolates. A 2006 review on legume proteins stated that peas are among the richest sources of proteins and amino acids for human and animal nutrition.³ The edible portion of garden and protein *Pisum sativum* had a world crop production of 892 metric tons x 10⁻³, with the biological activity of peptides from legume grains of these seeds having multiple health promoting properties such as anti-cancer, anti-obesity, and anti-inflammatory.³

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Plants and animals contain many naturally occurring peptides, some of which specifically bind to carbohydrates. These proteins are termed lectins. A 2009 review on the function and toxicity of legume seed lectins, stated that lectin from the seeds of *Pisum sativum* at a concentration of 0.2-2g/kg had slight oral toxicity and could possibly be harmful in raw foods.⁴ Although ingesting pure lectin derived from the seeds of the pea plant is not recommended based off this review, there is no indication that topical application of *Pisum sativum* (pea) peptide is harmful.

Pisum sativum protein isolates were also investigated for use in experimental infant based formulas, as a suggested alternative to soybean formulas which commonly cause allergic reactions and intolerances.⁵ In this 2001 study, iron absorption was measured in healthy non-anemic young women. The results showed increased iron availability with *Pisum sativum* protein isolate, which suggests that infant formulas based on pea-protein may be a feasible alternative to soybean based formulas.⁵ This study demonstrated the safety of *Pisum sativum* protein isolate for use in nutritionally beneficial products such as infant based formulas.

ACB Pisum Sativum Peptide was analyzed for its effect on cell viability and metabolism. The assay concluded that it is not cytotoxic and did not inhibit cell viability.

ACB Pisum Sativum Peptide was tested using *in vitro* dermal and ocular irritation models. This product was found to be non-irritating in both models. The full report is attached for reference.

The above information supports the safety of ACB Pisum Sativum Peptide in cosmetic applications at use levels of 1.0 – 5.0%. No further testing is required at this time.

1. Federal Food, Drug and Cosmetic Act. U.S Food and Drug Administration. www.fda.gov.
2. "US pea protein market ready to explode." FoodNavigator-USA. <http://www.foodnavigator-usa.com/Markets/US-pea-protein-market-ready-to-explode>
3. Duranti M. Grain legume proteins and nutraceutical properties. *Filoterapia* 77. 2006; 67-82.
4. Nasi A, Picariello G, Ferranti P. Proteomic approaches to study structure, functions and toxicity of legume seeds lectins. Perspectives for the assessment of food quality and safety. *Journal of Proteomics* 72. 2009; 527-538
5. Davidson L, Dimitriou T, Walczyk T, Hurrell RF. Iron absorption from experimental infant formulas based on pea (*Pisum sativum*)-protein isolate: the effect of phytic acid and ascorbic acid. *Br J Nutr* 85. 2001; 59-63. <http://www.ncbi.nlm.nih.gov/pubmed/11227034>

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