# Nooey® Nutritional supporting document

Our carefully chosen ingredients come with benefits, but you don't have to take our word for it. On this page, we have summarised some of the most relevant recently published research papers, articles and book chapters to do the talking for us.

**We are not making any of these claims directly for our product, but showcasing why we have chosen these specific ingredients.*

1. *"Lupin: an important protein and nutrient source"* - by M. van de Noort (chapter 10)[1]

The chapter emphasises that Lupin has very good nutritional properties with one of the highest protein levels among legumes and an excellent amino acid profile.

Lupin also contains high levels of dietary fibre (nondigestible carbohydrates), which enables it to be used in a variety of food applications including baking and replacing animal proteins such as meat, eggs and cheese.

The author also states that consuming Lupin can provide many health benefits including lowering of low-density lipoprotein, improving bowel functions and boosting satiety.

It's good for the planet too! In this chapter, the author outlines the benefits of Lupin in terms of its contribution to sustainable agriculture. For example, Lupin can fix nitrogen and absorb phosphates from the soil - it only requires the addition of potassium, which makes it a very sustainable crop.

*Nooey claims supported by this article: Nutrition Content Claims - high in protein; excellent source of dietary fibre; General Level Health Claim (Dietary fibre) - "Contributes to regular laxation"; protein - "Necessary for tissue building and repair"; "contributes to the growth of muscle mass"; "contributes to the maintenance of muscle mass"; "contributes to the maintenance of normal bones".*

2. The Health Benefits of Lupin - webpage summary[2]

Lupin is one of the highest sources of plant proteins and dietary fibre available (40% & 37% respectively).

Lupins contain three times more protein than quinoa, three times more dietary fibre than oats, three times more antioxidants than berries, three times more potassium than bananas and three times more iron than kale.

Australian sweet lupins also: reduce the glycaemic load of carb-based foods; reduce blood pressure; improve glucose metabolism; improve bowel health; are prebiotic and suppress appetite.

"Compared with other legumes, lupins are:

- Lower in calories but higher in nutrients, including thiamine, riboflavin, vitamin C, calcium, potassium, phosphorus, magnesium, iron and zinc
- One of the richest sources of plant protein and fibre (at least twice as much as other legumes, contributing to their hunger-busting effect)
- Much lower in carbs, with a lower glycaemic index
- A significant source of polyphenols and zeaxanthin, which include beneficial antioxidants and cholesterol-lowering phytosterols

[1] Chapter 10: Lupin: an important protein and nutrient source - abstract available here - https://doi.org/10.1016/B978-0-12-802778-3.00010-X from the book "Sustainable protein sources", edited by Sudarshan R Nadathur, Janitha P.D Wanasundara and Laurie Scanlin, Elsevier 2016

[2] https://www.healthyfood.com/healthy-shopping/the-health-benefits-of-lupin-the-powerhouse-legume/

- A good source of all nine essential amino acids, including arginine, which lowers blood pressure
- A source of the novel protein gamma conglutin, which may help to regulate blood glucose and insulin levels, as shown in a La Trobe University study on lupin biscuits (Skinnybik)"[3]

*Nooey claims supported by this article: Nutrition Content Claims - high in protein; excellent source of dietary fibre; General Level Health Claim (Dietary fibre) - "Contributes to regular laxation"*

3. *"The health benefits of lupin in cardiovascular prevention: ten years of successful investigations"* - by Anna Arnoldi et al[4]

This paper summarised 10 years of research literature in the area of dyslipidemia and hypertension prevention and provides some data on the mechanism of action.

The paper contends that by adding lupin protein isolates to the diet of different animal models of hypercholesterolemia, significant decreases of total and non-HDL cholesterol were observed.

These results were confirmed by clinical trials and suggest that lupin may become an ingredient of innovative functional foods for cardiovascular protection.

Nooey claims supported by this article: potential for a "Low Cholesterol" nutrition claim - if cholesterol level of product is less than 20mg/100g.

4. *"Extra Virgin Olive Oil and Cardiovascular Diseases: Benefits for Human Health"* - by Cristina Nocella et al[5]

This paper demonstrated the cardioprotective properties of the Mediterranean Diet - supporting numerous studies over the past few decades which pointed out the close relationship between the Mediterranean Diet and cardiovascular diseases.

The study concluded that EVOO is relevant in lowering the incidence of cardiovascular events, including myocardial infarction and stroke.

98-99% of the total weight of EVOO is represented by fatty acids, especially monounsaturated fatty acids such as oleic acid. These, together with the remaining 1-2% of tocopherols and polyphenols were thought to potentially contribute to "health maintenance" on the part of EVOO.

EVOO was found to have a role as an anti-inflammatory, antioxidant and vasodilatory nutrient that may contribute to lowering the atherosclerotic burden.

Nooey claims supported by this paper: 82% of the fat content of the product comes from unsaturated fats (mono & poly).

5. *"Chemical Composition and Health Benefits of Flaxseed"* - Roberta Bernacchia et al[6]

This article outlines that scientific evidence supports consumption of flaxseed for the high content in omega-3, omega-6 rich oil, α-linolenic acid, lignans, high quality proteins and fibre.

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[3] Skalkos S & Moschonis G et al. 2020. Effect of Lupin-Enriched Biscuits as Substitute Mid-Meal Snacks on Post-Prandial Interstitial Glucose Excursions in Post-Surgical Hospital Patients with Type 2 Diabetes. Nutr. 12(5): 1239. https://www.mdpi.com/2072-6643/12/5/1239

[4] "The health benefits of lupin in cardiovascular prevention: ten years of successful investigations", Arnoldi, A et al. Department of Pharmaceutical Sciences, University of Milan, Paper delivered to the XIV International Lupin Conference, Milan, Italy, 21-26June 2015. Source link: https://www.cabdirect.org/cabdirect/abstract/20193044307

[5] "Extra Virgin Olive Oil and Cardiovascular Diseases: Benefits for Human Health" - Nocella, C et al. Endocrine, Metabolic & Immune Disorders-Drug Targets, Volume 18, Issue 1, 2018, pp 4-13. Access link: https://www.eurekaselect.com/157144/article

[6] Bernacchia R, Preti R and Vinci G. Chemical Composition and Health Benefits of Flaxseed. Austin J Nutri Food Sci. 2014;2(8): 1045. Accessed via link: https://zellavie.ch/wp-content/uploads/2019/01/fulltext_ajnfs-v2-id1045.pdf

These compounds are biologically active in the prevention of some chronic diseases such as many types of cancer, diabetes, cardiovascular diseases and cerebrovascular stroke.

Nooey claims supported by this paper: possibly the Omega 3 content; also contributes to the protein and fibre claims - high in protein; excellent source of dietary fibre.