Vitashine

Vegan & Vegetarian Vitamin D3 Ingredients

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Vitashine is a special oily extract of Lichen. It is naturally rich in Vitamin D3 (Cholecalciferol) and fatty acids.

The wonderful world of lichens
Lichens are small unique plant species consisting of a symbiotic association of a fungus with an alga. This gives them unique attributes such as surviving in extreme climates and having the ability to grow and accumulate meaningful levels of useful nutrients, including Cholecalciferol. There are many different species of Lichen, and we work with a carefully selected strain following extensive research and development into natural sources of Vitamin D3.

Vitashine Ingredients

Vitashine is available in oil and spray-dried powder formats, making it easy to incorporate into liquids, tablets and capsules.

Vitashine Lichen Extract Oil	Oil extract supplied in Fractionated Coconut Oil (MCT) containing 1,000,000iu/g Vitamin D3
Vitashine Lichen Extract Powder	Spray-dried powder containing 100,000iu/g Vitamin D3

Vitashine: the world's only Vegan Society and Vegetarian Society registered Vitamin D3

Until Vitashine ingredients were launched, the only Vegan and Vegetarian source of Vitamin D was the inferior analogue of Ergocalciferol (Vitamin D2).

Prior to launch we presented our full research to the scientific committee at the Vegan Society, which includes widely respected Dr Stephen Walsh and also world-renowned Jack Norris RD of Vegan Outreach in USA.

Vitashine ingredients are registered with the Vegan Society and Vegetarian Society and we are very proud to display their logos.

Vitashine: Research & Development

Vitashine ingredients are the result of an extensive research project, investigating a large number of lichens grown at different locations all over the world. We worked with the University of Stirling and RSSL to identify and characterise a large number of candidates, and we continue to work with these expert laboratories to evaluate Vitashine ingredients.

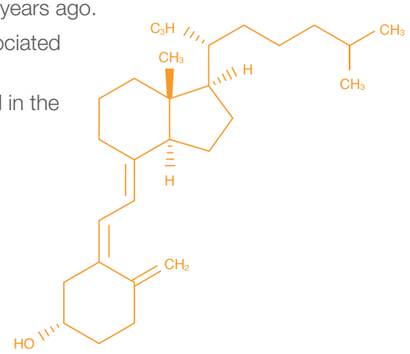
Plant Source Vitamin D3

We use lichen not sheep's wool!

- ✔ No sheep (or their wool) required.
- ✔ Plant source.

What is Vitamin D3?

- Vitamin D3 is a fat Soluble vitamin, discovered over 100 years ago.
- Vitamin D is essential for good health and has been associated with many health benefits.
- Vitamin D is absorbed from the diet or can be produced in the skin as vitamin D3 when exposed to sufficient sunlight.



Who benefits from taking Vitamin D3?

- Everybody irrespective of age, gender or lifestyle needs vitamin D for good health.
- Deficiency in Vitamin D can lead to Rickets, problems with bone health and weakened immunity.
- Vitamin D has been studied for benefits with cancer, cardiovascular disease and even prolonged lifespan.
- Studies have shown over 50% of the general population are deficient in Vitamin D, it can be even higher in specific demographic groups.

Vitamin D Levels and Sunlight

- To produce Vitamin D3 in the skin, it is necessary to expose the skin to sunlight.
- Individuals with darker skin or those living at higher latitudes where sunlight intensity is low do not get sufficient sun exposure.
- Without adequate sun light exposure, supplementation may be required to increase vitamin D levels.

Vitamin D & Darker Skin Tones

- Darker skin tones such as Asian and Africans naturally filter ultraviolet rays from sunlight, however this also reduces the ability of the synthesis vitamin D3 in the skin.
- Religious and lifestyle clothing which covers much of the skin reduces light exposure further.
- Asians and Africans living in Northern Temperate regions have the greatest problem with very low light intensity for much of the year.

Vitashine: Responsible and Sustainable Sourcing

A key part of our research was to ensure responsible and sustainable growing. Lichens grow incredibly slowly so we did of course need to consider scalability and feasibility.

Our lichen has existing and ongoing use for a variety of applications including foods, drinks and decorations. As a result we have been able to secure and manage a suitable source to ensure sustainability as well as quality and purity.

- No pesticides.
- Organic growing conditions.
- Sustainable growing sites.

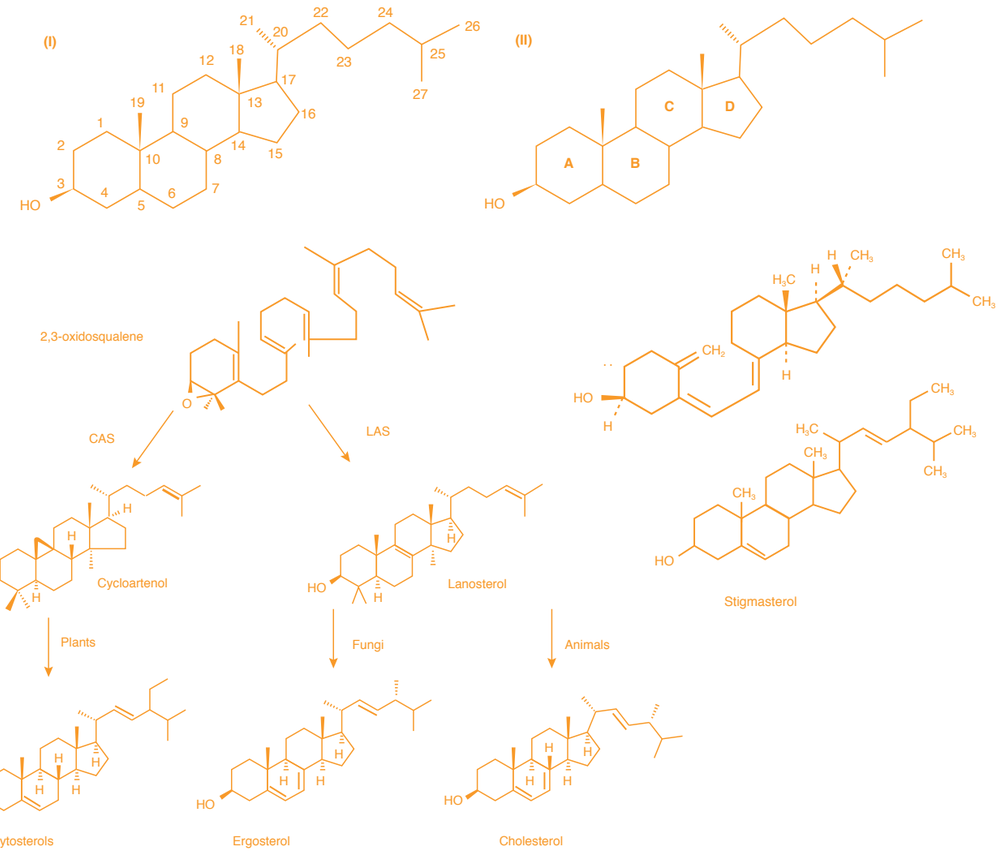
What is the biological role of Vitamin D3 in plants?

The biological function of vitamin D3 and its metabolites in plants remains unclear.

The theory is that vitamin D or vitamin D-like substances act as plant growth substances mediated by changes in calcium fluxes.

Studies have shown Vitamin D2 and vitamin D3 enhance the number of adventitious roots in Populus tremula L., Populus nigras L. (Buchala and Schmid, 1979), Phaseolus vulgaris L. (Buchala and Schmid, 1979;Talmon et al., 1989) and in Phaseolus aureus Roxb. (Jarvis and Booth, 1981).

Of the metabolites of vitamin D3, only 1,25(OH)2D3 promotes adventitious rooting, but to a smaller extent than vitamin D3 (Pythoud et al., 1986).



To understand how vitamin D3 synthesis takes place in plants we need to understand how its sterol precursors are formed.

The sterols are built through a complex biosynthesis from the common C5 isoprene units isopentyl diphosphate (IPP) and its isomer dimethylallyl diphosphate (DMAPP).
Plant Sterols have very similar structures to Vitamin D molecules. UV light and enzymes have been shown to catalyse the conversion of precursors to Vitamin D3

Vitashine Certification & Accreditation

Vitashine is registered and certified by a variety of different bodies and organisations:

The Vegan Society

Vegetarian Society

Kosher

Indian Vegetarian Mark

Non-GMO Project

Vitashine uses & applications

Vitashine is available in oil and spray-dried powder formats. This makes it perfect for:

- ✔ Vitamin tablets and capsules
- ✔ Liquid supplements including sprays & droppers
- ✔ Infant formula
- ✔ Children's fortified confectionery
- ✔ Fortified foods & drinks
- ✔ Pet foods

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