

## A Method for Vitamin D Production

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## Overview

A sustainable method to produce vegan Vitamin D using the microalga *Emiliana huxleyi*. This approach enables efficient production of both Vitamin D2 and Vitamin D3, along with additional nutritional values, in a dry biomass form suitable for nutritional supplements. By optimizing cultivation conditions and utilizing a two-phase cultivating system with bacteria, this method offers an eco-friendly, animal-free alternative to traditional Vitamin D sources.

## Applications

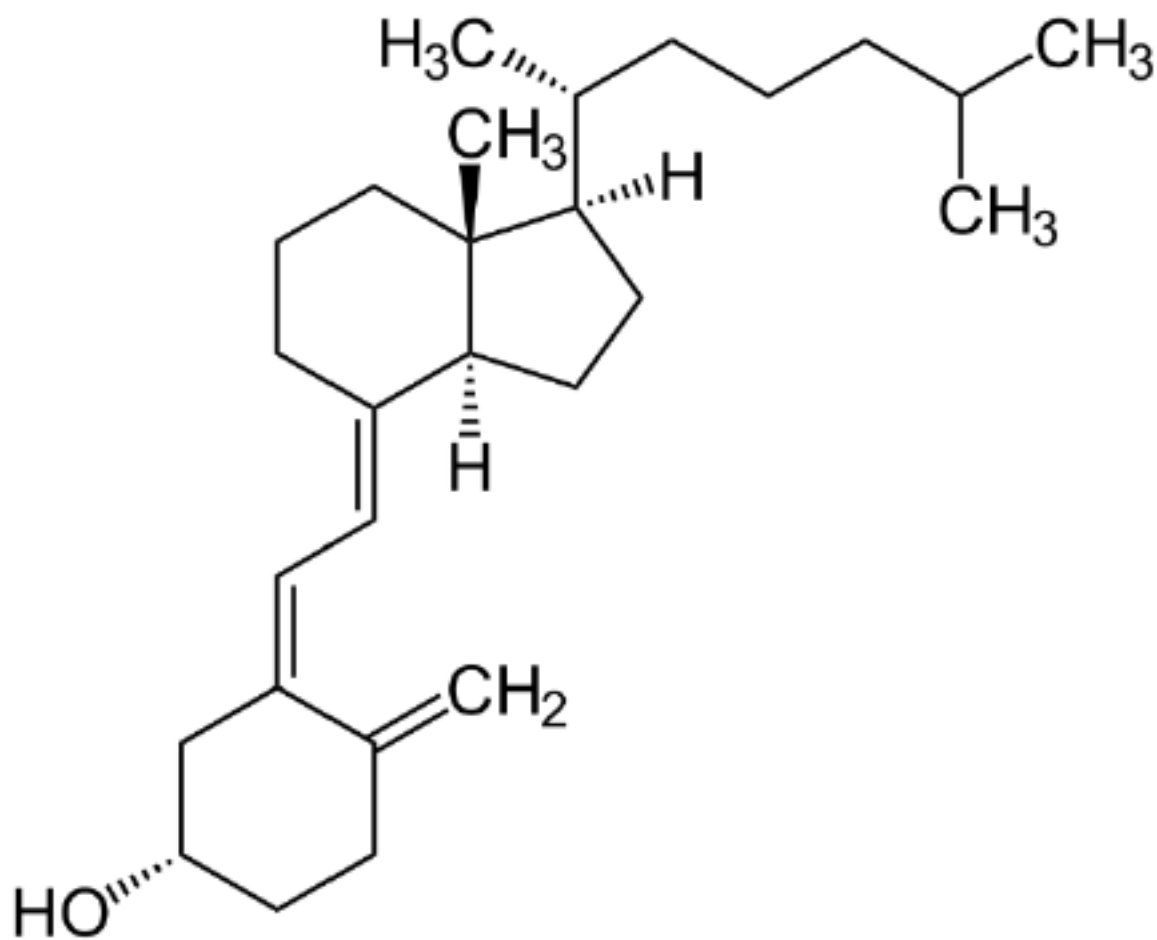
- **Nutritional Supplements:** Provides a plant-based, vegan-friendly source of Vitamin D2 and D3 and additional nutritional benefits (e.g., calcium and other sterols) for humans and animals.
- **Food Fortification:** Enables fortification of foods with Vitamin D and calcium derived from a sustainable and natural source.

## Advantages

- **Vegan and Sustainable:** Provides Vitamin D3 from a non-animal source, ideal for vegan consumers and sustainability-conscious markets.
- **Enhanced Production Efficiency:** The two-phase cultivation system maximizes Vitamin D yields through optimized interaction with bacteria without compromising purity.

## Stage of Development

The team has successfully identified the biological pathways and optimal cultivation conditions for Vitamin D production in *E. huxleyi*. They have developed a scalable, two-phase cultivation system and demonstrated the production of a dry biomass containing Vitamin D and calcium. Further studies are underway to validate the method for commercial use and explore additional applications.



## Vitamin D3

### Patent Status

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