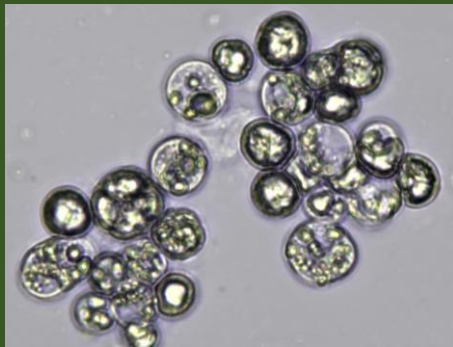


MICROALGAE PRODUCE PLANT BASED DHA

LABYRINTHULEA

Aurantiochytrium



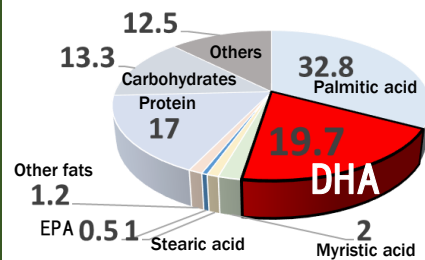
Labyrinthulea (Aurantiochytrium)

Scientific names : *Aurantiochytrium limacinum*

Labyrinthulea is a heterotroph marine microalgae with 5 to 10 micrometer in diameter. Exist various environments as torrid zone to polar region, in coast or the bottom of the sea, accumulate DHA with high concentration. In Kanehide Bio cultivate a selected strain (*Aurantiochytrium limacinum* MH2318) which has proliferation potency and DHA productivity from thousands strains of a library Professor Hayashi from Miyazaki University, agricultural has.

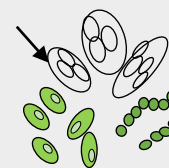
The origin of fish oil's DHA or EPA is **ALGAE**

Nutrient composition of Labyrinthulea (MH2318)



Accumulate much fat. Rich in DHA is a one of a quality.

MICROALGAE



SMALL FISH AND SHRIMPS



FISH



※What is MICROALGAE?

A tiny algae as be able to see with microscope.

Large algae : seaweed as Okinawa mozuku, kelp, wakame

Microalgae : Labyrinthulea, Nannochloropsis, chlorella etc.,

Succeed process whole algae to foods



● VEGAN SUPPLEMENTS

● PROCESSED FOODS AS LIKE BREAD

● NATURAL FOODS TO TAKE WHOLE MICROALGAE

● ADDED NUTRIENTS FOR CARE FOOD OR BABY FOOD

➤ IN HOUSE CULTIVATING UNAFFECTED BY EXTERNAL ENVIRONMENTS

➤ A NEW SUSTAINABLE FOOD SOURCE LESS ENVIRONMENTAL LOADING

VEGAN MARKET

1 ~ 3%

Of world population

Convert into population..

Estimated **78 millions**

THE MARKET GARNER ATTENTION



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■ PRODUCT SPECIFICATION(Labyrinthulea powder)

Inspection items	Standards	Analysis methods
Appearance and aspect	Beige~pale ocher colored powder, no foul smell and taste or foreign material	Sensory test
Aerobic colony count	$\leq 3.0 \times 10^3$ cfu/g	Plate count agar test
Coliforms	Negative	BGLB method
Water activity	\leq Aw 0.5	Water activity measuring instrument
DHA	\geq 5%	Gas chromatography
Type of Packing : Powder (1kg/Double bag (Outer : Aluminum Inner : Plastic)) Warranty Period : A years after manufacturing with unopened Mixing Ratio: Aurantiochytrium (33%), dextrin (33%), starch decomposition product (33%) / Silicon dioxide (1%)		
Processed Example : Hard capsule, General processed food etc., Safety : Repeated-dose toxicity study, Acute toxicity test		

■ REPORTED BIOACTIVITY ABOUT LABYRINTHULEA

ANTI-INFLAMMATORY ACTION (Labyrinthulea extract)

Decreasing the amount of expression of proinflammatory cytokine (IL-1 β and IL-6) by added ethanol extract of Labyrinthulea *Aurantiochytrium limacinum* 4W-1b containing DHA to culture medium.

S. Takahashi et al., *Biomed Res. Int.* (2019)
 "Anti-Inflammatory Effect of *Aurantiochytrium limacinum* 4W-1b Ethanol Extract on Murine Macrophage RAW264 Cells"

INCREASED DHA CONTENT IN MILK BY LABYRINTHULEA FEEDING

By Labyrinthulea feeding to dairy cow, decreased saturated fatty acid content and increased the amount of milk, ω -3 fatty acid content along with DHA content.

C.Moran et al., *J Anim Physiol Anim Nutr.*, (2018)
 "The effect of dietary supplementation with *Aurantiochytrium limacinum* on lactating dairy cows in terms of animal health, productivity and milk composition"

■ MAIN BIOACTIVITY OF DHA

The official name of DHA is "docosahexaenoic acid", one of unsaturated fatty acid that cannot be synthesized in body. Being one of polyunsaturated fatty acid and belong to n-3 fatty acid (Omega 3 fatty acid).

IMPROVING DERMATITIS

PRESSURE DECREASE

DECREASING ASTHENOPIA

IMPROVING ARTERIOSCLEROSIS

PREVENT APOPLEXY

IMPROVING DYSLIPIDEMIA

SUPPORT COGNITIVE FUNCTION

FAT BURNING

IMPROVING MOTOR FUNCTION

ANTI-ALLERGY