



# Natural Plant-Based Algae DHA and ARA

Linyi Youkang Biology Co., LTD



# ABOUT US

Linyi Youkang Biology Co., Ltd., established in 1998, is one of the trailblazer in the DHA algae oil industry. We specialize in the research, production, and application of products of DHA algae oil and Arachidonic acid Oil. With over two decades of expertise, we have been providing services to clients across global industries, including infant formula, health food, and dietary supplements.

With two facilities, our comprehensive production capabilities encompass fermentation, extraction, refining, freeze-drying, and spray drying. We also have our own state-of-the-art inspection center to ensure the highest quality standards.



**100+**  
professional  
technical staff



**15+**  
professional  
Q&C staff



**15+**  
professional  
R&D staff



# OUR STRENGTHS

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## Experience:

For over two decades, we have been one of pioneers on a global-scale producing algae DHA oil. We have evolved from fermentation to establishing a comprehensive product system through continuous innovation.

## Products:

We offer a premium portfolio, including Algae DHA oil, ARA oil, and powder products. These ingredients are widely utilized in infant formula, health food and dietary supplements.

## Quality:

We uphold stringent quality control, investing in ongoing R&D to meet customer's growing demands and to maintain as a certified industry leader.

## Global Reach:

Successfully expanding into domestic and international markets, we serve a diverse clientele with smooth delivery experience.

## Environmental Commitment:

Dedicated to environmental preservation, we prioritize energy efficiency through process upgrades and advocate for clean and sustainable bioenergy sources.





# PRODUCTION CAPABILITIES

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Our cutting-edge facilities include the largest DHA fermentation tanks in China (2\*150 cubic meters) and ARA fermentation tanks (4\*260 cubic meters+2\*260 cubic meters).



**Fermentation**



**Refine**



**Spray Drying**



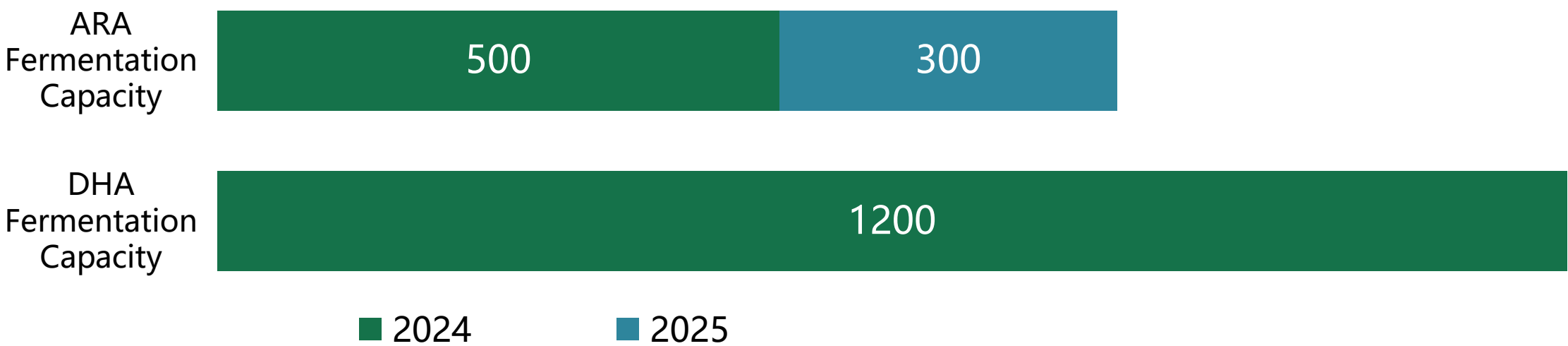
**Freeze Drying**



# OUR DHA & ARA CAPACITY

Our cutting-edge production facilities are capable of fermentation, refining, freeze drying and spray drying, including the nation's largest single fermentation tank and state-of-the-art freeze drying and spray drying facilities.

In the year 2024, our annual production capacity for DHA oil is set at 1200 tons, with an additional ARA oil production capacity of 500 tons, and DHA & ARA powder capacity of 800T. Following the completion of our expansion project in end of 2025, the annual ARA production capacity is slated to reach 800 tons





# OUR TESTING CAPABILITIES



Within our facility, we maintain dedicated analytical laboratories and a well-equipped research and development center. Our instrumental resources encompass gas chromatography-mass spectrometry, liquid chromatography, atomic absorption spectrophotometry, and pilot-scale spray drying equipment. We perform in-house Microbiology Testing in a class 100,000 Clean room.

## Analytical Parameters

Routine Chemical Analysis Parameters  
Fatty Acid Analysis  
Residual Solvents  
Vitamin Content  
Arsenic and Lead Content  
Plasticizer Content  
Total Colony Count  
Escherichia Coli  
Salmonella



# QUALITY CONTROL

In accordance with global regulatory standards and requirements, as well as meeting the criteria of our quality and food safety systems, we routinely monitor the routine indicators and potential risk factors of DHA and ARA oils. We consistently update our monitoring plans in real-time to align with the latest regulations and research findings recognized by global institutions. This ongoing effort aims to reduce the application risks faced by our clients.



***REGULATORY & COMPLIANCE  
MANAGEMENT IS THE KEY TO  
SUCCESSFUL AUDITS***





# PRODUCT CERTIFICATIONS

YouKang Biology has obtained approvals for its DHA and ARA products for infant and toddler food in China, Novel Food in Europe, US FDA GRAS and NIFI Canada, and regulatory check in countries/regions worldwide. We have established and acquired certifications for ISO9001, ISO14001, FSSC22000, Halal, and Kosher food systems.





# FUTURE R&D

Youkang Biology has established long-term partnerships with several renowned research universities, including Nanchang University, Central South University, and Henan University of Technology. Additionally, collaborations extend to globally recognized testing institutions such as Eurofins and SGS Laboratories.





# Key Advantages of YouKang DHA & ARA

## Price

Rising water temperatures have created challenges for many fisheries around the world, driving up the cost of fish oil. However, our algal solution offers premium quality at a price point tied to our ability to innovate, rather than being tied to environmental factors, which are beyond the control of producers.

## Supply Chain

While it can take up to 24 months to source fish oil, algal oil can be cultivated, grown and fully refined into a pristine nutritional oil within 20 days. By cutting down supply chain time, you get the purest, freshest and most potent omega-3, without the wait. Plus, unlike fish oil, algal oil starts pure, eliminating the need for extensive investments in purification. Your journey to optimal health is limitless and swift.

## Sustainability

Make a difference with your choice. Our extensive DHA products have a lower environmental impact compared to their fish-based alternatives. By opting for algal omega-3, you actively participate in preserving marine ecosystems and reducing your environmental footprint.

## Quality

Not all omega-3s are created equal. Our algal omega-3 is naturally twice as potent as standard fish oil. It's rich in DHA, delivering superior health benefits. What sets us apart is not just the potency, but also the taste, delivering a superior user experience with every dose.





# Products for Nutrition Industry

Our products are extensively utilized in the majority of infant formula and supplements in China. Furthermore, they enjoy popularity among key clients in Europe, Australia. With formidable research and production capabilities, we can meet the diverse and stringent requirements of different customers. Our service team is adept at aiding customers in formula development and offering support for business operations in the Chinese market.

	Solvent-free extraction	Semi Refined	Refined	Winterization	Blend oil	Sn-2
DHA oil	✓	✓	✓	✓	✓	✓
ARA oil	✓	✓	✓	✓	✓	✓

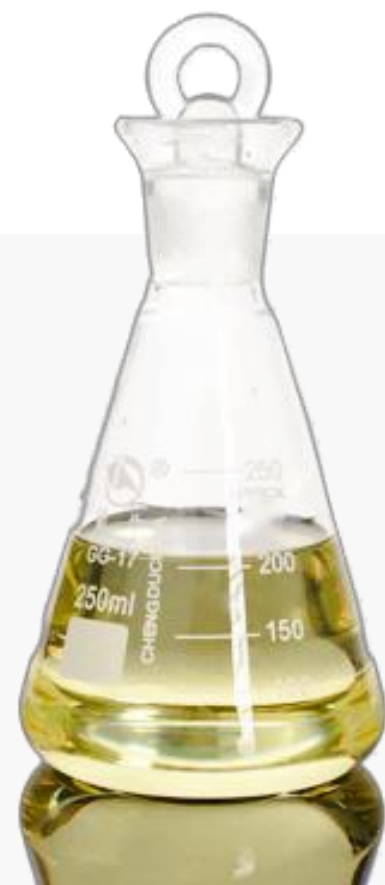
We also provide DHA and ARA powder products (encapsulated with starch, protein, or goat milk powder).





# DHA Oil

- **Natural Source:** Younkang DHA is completely extracted from natural microalgae sources. It is a deep-sea single-celled algae fermentation, rich in DHA Omega-3 oil refined through chemical-free extraction, with no solvent residue risk.
- **High Purity Content:** Produced using Schizochytrium sp. fermentation, it is sustainable, vegetarian, non-genetically modified, non-irradiated, allergen-free, and solvent-free extraction. These features ensure the product's high safety, excellent sensory characteristics, no fishy or off-putting odors, low oxidation risk, reasonable fatty acid composition, and high DHA content, making it the best choice for various applications.



DHA Crude oil

Specification

45%

Refining crude oil for use as refined oil

DHA Winterized Oil

Specification

40% 45%

Encapsulated, transparent soft capsules, maternal food, gel candies, droplets, emulsified oral liquid, dairy products, yogurt, and middle-aged and elderly health products

DHA Refined Oil

Specification

35% 40% 45%

DHA Microencapsulated Powder, Encapsulated, non-transparent soft capsules, and gel candies, infant formula milk powder, maternal food, droplets with no requirement for oil clarity, emulsified oral liquid, dairy products, yogurt, and middle-aged and elderly health products





# ARA Oil

- **Natural Source:** Derived from *Mortierella alpina* using advanced fermentation processes, followed by filtration, drying, extraction, and refining to obtain arachidonic acid (ARA) oil.
- **High Stability:** Excellent sensory characteristics, no off-putting odors, low oxidation risk, simple and reasonable fatty acid composition, high ARA content, making it the best choice for various applications.

ARA Crude Oil

Specification

40% 45% 50%

Refining crude oil for use as refined oil

ARA Refined Oil

Specification

40% 45% 50%

Dairy products, Yogurt, Infant formula milk powder, Goat milk powder products, Vegetarian products

ARA Crude Oil  
(Solvent-Free)

Specification

45% 50%

Refining crude oil for use as refined oil

ARA Refined Oil  
(Solvent-Free)

Specification

40% 45% 50%

Dairy products, Yogurt, Infant formula milk powder, Goat milk powder products, Vegetarian products



# DHA/ARA Powder



- Formulated with DHA algal oil/ARA oil as the main ingredients, with or without added ingredients such as whey protein concentrate, whey protein isolate, lactose, fructo-oligosaccharides, sodium octenyl succinate starch, sodium ascorbate, ascorbyl palmitate, calcium hydrogen phosphate, citric acid, sodium citrate, sodium caseinate, ascorbic acid, glucose, and maltodextrin. The product undergoes processing steps like formulation, emulsification, homogenization, spray drying and packaging.
- **Customized formulations available based on customer requirements.**

ARA Powder  
(Starch Formula)

Specification

10% 20%

Dairy products, yogurt, infant formula milk powder, full sheep milk formula products, powder formulations, vegetarian products

ARA Powder  
(Protein Formula)

Specification

10% 20%

Dairy products, yogurt, infant formula milk powder, powdered formulations, sports nutrition

DHA Powder  
(Starch Formula)

Specification

7% 10% 20%

Dairy products, yogurt, infant formula milk powder, full sheep milk formula products, powder formulations, vegetarian products

DHA Powder  
(Protein Formula)

Specification

7% 10% 20%

Dairy products, yogurt, infant formula milk powder, powdered formulations, sports nutrition



# Mushroom Oil/Powder (Vitamin D<sub>2</sub>)



Natural mushroom oil

**Specification: 4000IU/g Vitamin d<sub>2</sub>**

Application: Supplements, candies, gummies, gelatin candies, soft capsules, drops, liquid formulations, common foods (soups, salad dressings, ketchup, oatmeal, yogurt, energy bars, pizza, vegetable burgers), etc.



Natural mushroom powder

**Specification: 12000 IU/g Vitamin d<sub>2</sub>**

Application: Supplements, powdered beverages, sugar-coated tablets, candies, gummies, jelly sweets, soft capsules, hard capsules, foods (soups, salad dressings, ketchup, cereals, yogurt, pizza, burgers, etc.), beverages (sports drinks, fruit juices, protein powders), powdered milk

- A natural, safe, and vitamin D<sub>2</sub>-rich mushroom oil, produced through processes such as blending and filtering.
- A natural and safe food rich in vitamin D<sub>2</sub> and other nutrients.
- A vegetarian source of natural vitamin D<sub>2</sub>, providing 12,000 IU/g of vitamin D<sub>2</sub>



# INTRODUCING: sn-2 DHA&ARA

by **YK** **YOUKANG**  
Natural Essence Quality Choice





# Introducing YouKang Sn-2 DHA & ARA

Docosahexaenoic acid (DHA) and Arachidonic acid(ARA) is an fatty acid that plays a crucial role in brain and eye health for baby. The Sn-2 position refers to the specific location on the glycerol backbone of a triglyceride molecule where DHA/ARA is attached. When DHA/ARA is positioned at the Sn-2 position, it is known as Sn-2 DHA/ARA.

Research suggests that Sn-2 DHA/ARA may have advantages over regular DHA/ARA in terms of absorption. In breast milk, Sn-2 DHA/ARA is higher than Sn1,3 DHA/ARA.

Compared with normal DHA&ARA oil, Youkang's Sn-2 DHA&ARA oil has a higher Sn-2 DHA&ARA, which more close to breast milk.





# Sn-2 DHA&ARA Products

After the hydrolyzation of triacylglycerols (TAGs), pancreatic lipase preferably transports DHA/ARA at the sn-1,3 position to the liver for energy.

The sn-2 monoacylglycerols (MAGs) are subsequently absorbed by the intestinal mucosa and are preferentially utilized for the resynthesis of TAGs or phospholipid-type DHA/ARA. They are then preferentially transported into the brain.

- sn-2 in DHA&ARA

A

Structure consistent with DHA/ARA in breast milk, with a higher proportion of sn-2, resulting in higher absorption rates to the brain.

B

Closely related to intestinal microecological balance, providing stronger stability

C

Lower rate of oxidation loss.

YouKang sn-2 oil	50%-65% sn-2 of DHA
Breast milk	52%-65% sn-2 of DHA
Regular oil	25%-30% sn-2 of DHA
YouKang sn-2 oil	40%-55% sn-2 of ARA
Breast milk	40%-55% sn-2 of ARA
Regular oil	25% sn-2 of ARA



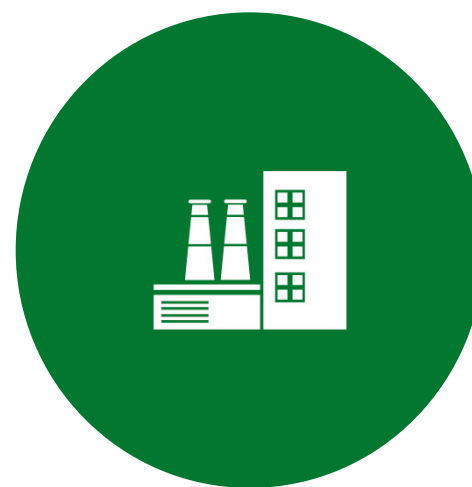
We have applied for 24 relevant patents in 11 countries  
Copies available upon request



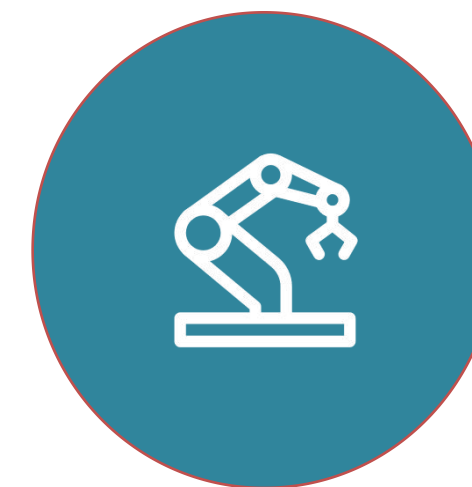
# Customized Products



- We have complete production capabilities to deliver various specifications of DHA and ARA crude oil, semi-refined oil, refined oil, and winterized oil. We can also customize blends according to your requirements, whether for infant formula, supplements, refining, or blending. We are committed to finding the most suitable solutions for your application needs.
- Once we understand your requirements, our technical team will develop product plans and samples for your review. Upon confirmation of the samples and signing the contract, our production capabilities will be activated immediately to ensure prompt delivery. After delivery, our service team will continuously monitor usage and provide ongoing after-sales support.



Advanced  
Equipment and  
Technology



Flexible  
Production  
Capacity



Customized  
Product  
Experience



# Product Applications

Our product is widely applicable in human health and nutrition products as well as animal health products. Its natural origin and stable composition make it the preferred choice for users



# Gel Candy



# Infant Formula



# Soft and hard capsules



# Drops

# Human Nutrition

### Infant formula

### Baby food

### Soft capsules/hard capsules

## Gelatin candies

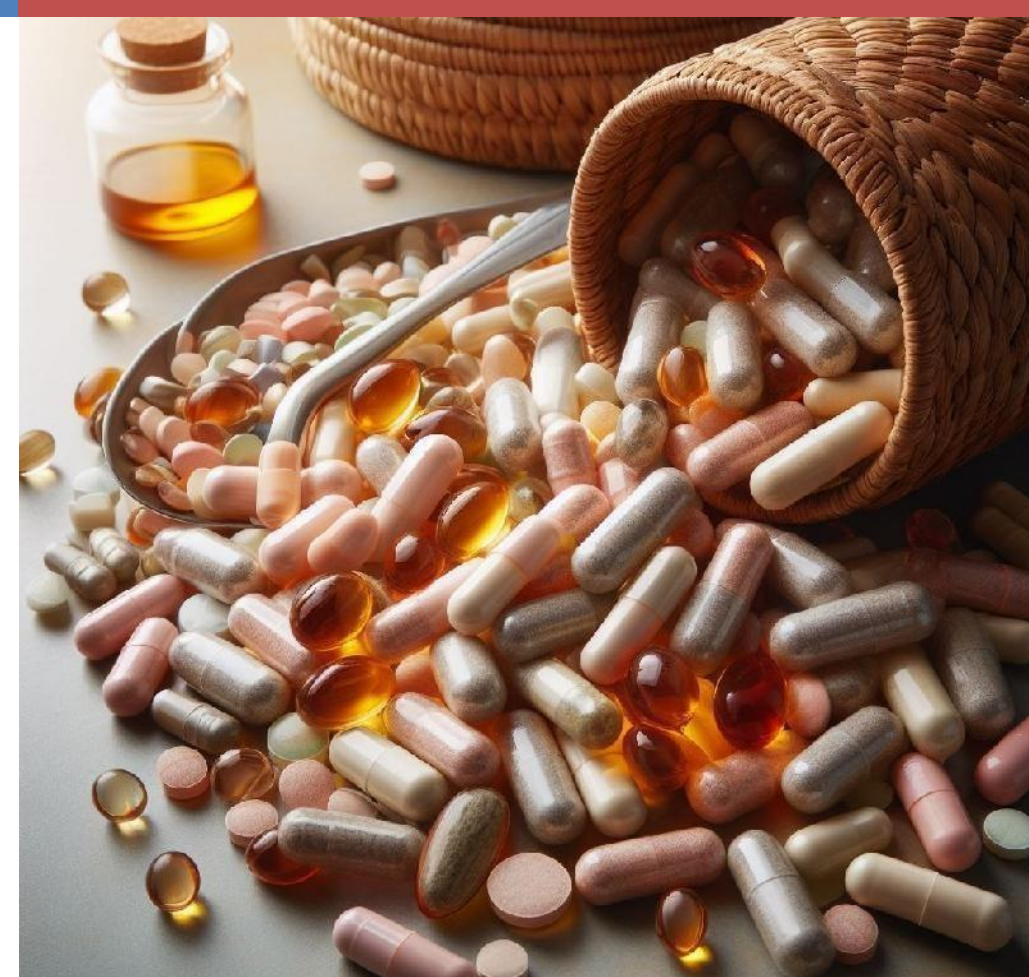
## Drops

### Freeze-dried cheese/yogurt

### *Dairy products*

### Nutritional supplements

*Edible oil*



# Animal Nutrition

### *Pet nutritional powder*

### *Pet nutritional supplement*

### *Pet main feed*

### *Native DHA milk solution*







THANK YOU



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