Specialized in Nutrition
and Health Ingredients
for 20 years

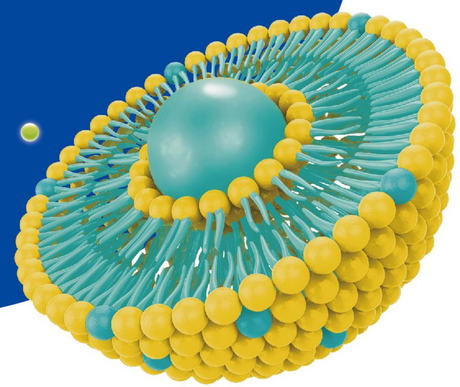
Co-loading liposomes

Natural Field
NF Co-loading® Liposomes

Patented Innovation

Synergistic Efficacy

Superior Bioavailability



Natural FIELD

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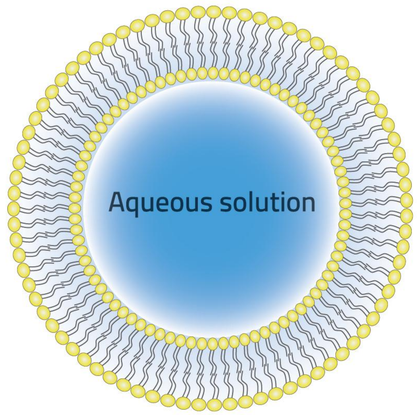
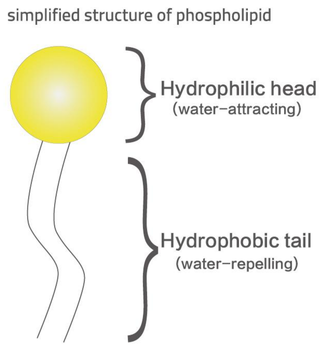
Co-loading liposomes

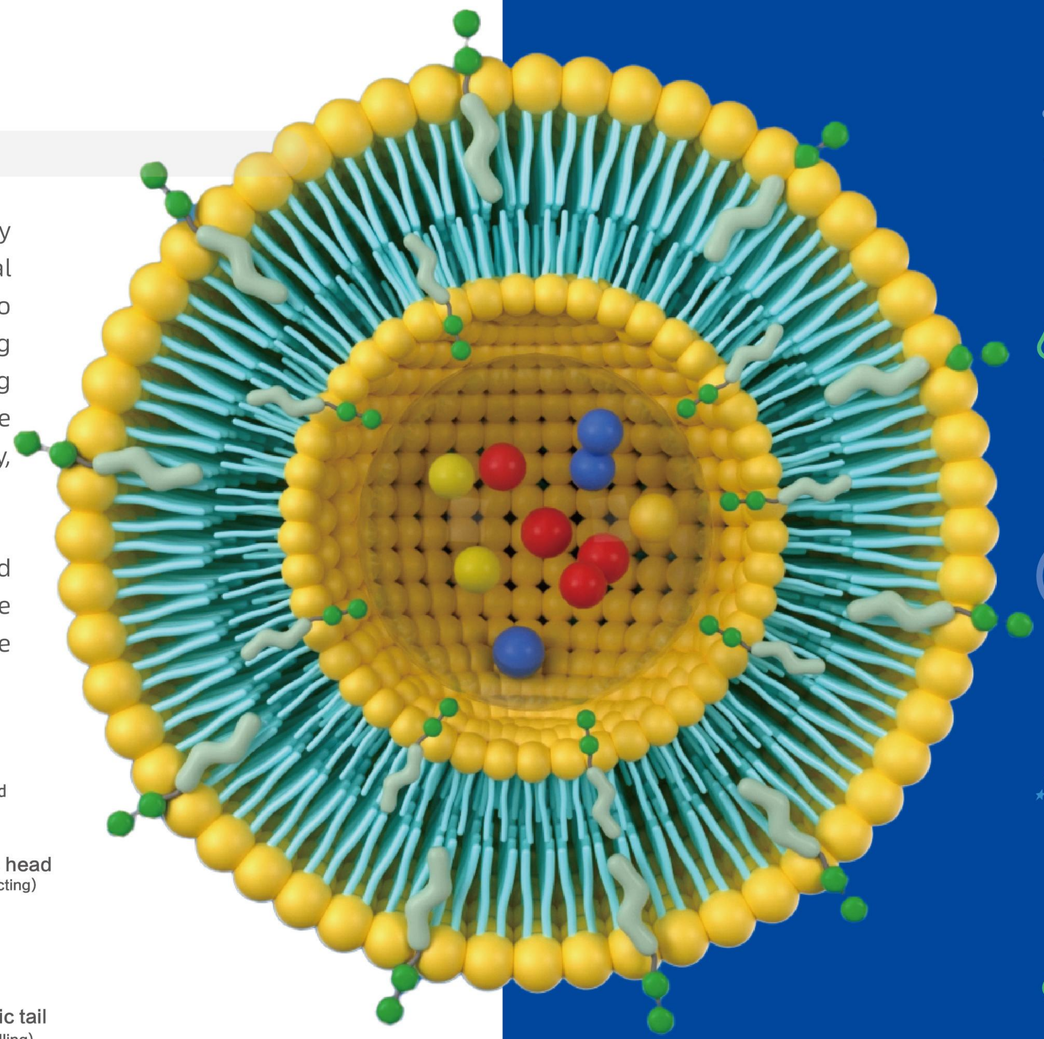
Definition of NF Co-loading® Liposome

The novel co-loading liposome is an innovative drug delivery system based on natural active ingredients. It utilizes natural compounds such as ginsenosides as membrane stabilizers to replace traditional cholesterol while simultaneously encapsulating two or more components to form a complex drug-loading system. This delivery system maintains the fundamental structure of liposomes while significantly enhancing drug-loading efficiency, stability, and biocompatibility.

Natural Field's proprietary technology platform has obtained patent protection in major global markets and holds complete independent intellectual property rights, making it one of the leading liposomal delivery platforms worldwide.







Advantages of NF Co-loading® Liposomes Platform

Unique Design
Replacing cholesterol with natural products, such as ginsenosides.

Advanced Technology
Simplified preparation process compared to conventionaldual-drug loaded liposomes, enabling easier industrialization.

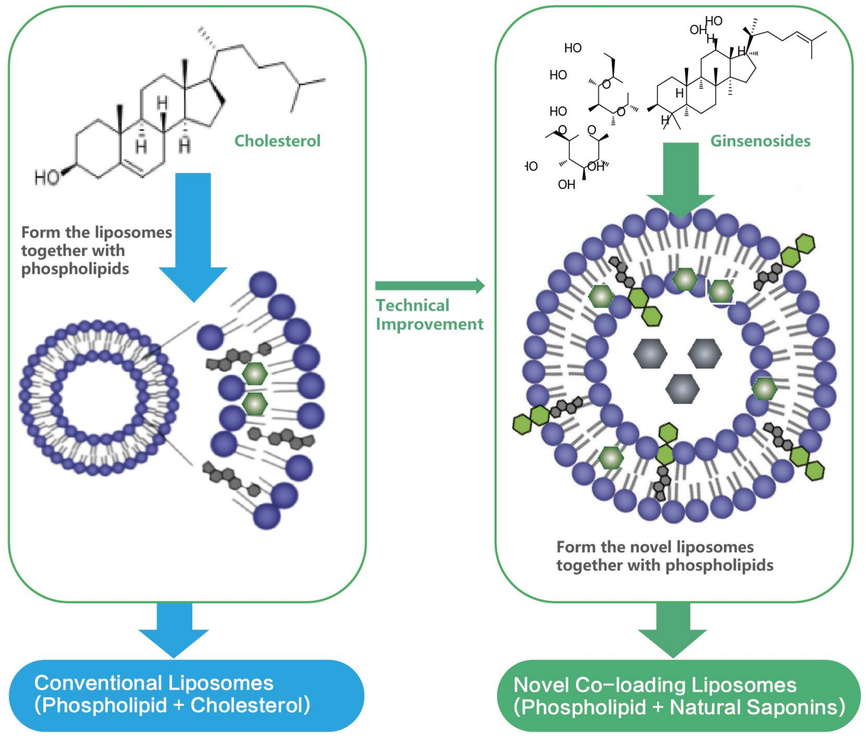
High-Efficiency Encapsulation
Simultaneously encapsulates two or more active ingredients.

Global Patent
Exclusive authorized patents granted in major developed countries.

High Bioavailability
Scientifically validated efficacy through rigorous experimental studies.

Structural Diagram of Novel NF Co-loading® Liposomes

Design Concept:



Technical Advantages

- Rare ginsenosides act synergistically withdrugs, enhancing efficacy.
- Improve liposome stability.
- Avoid contraindications associated with cholesterol.
- Enhance gastrointestinal absorption.

Advantages of Rare Ginsenosides

Extremely Rare

Content below 0.001%.

A secondary metabolic saponin that exists in plants

The content is extremely low after refined extraction

Higher Activity

Compared with other ginseng components

Bidirectional immune regulation

Significantly enhance immunity

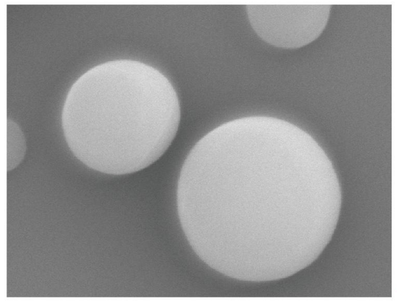
Natural Field won the Application Innovation Award of CPHI Natural Ingredients Gold Winner 2025

Award-winning product: NF Co-loading® Liposomal Curcumin

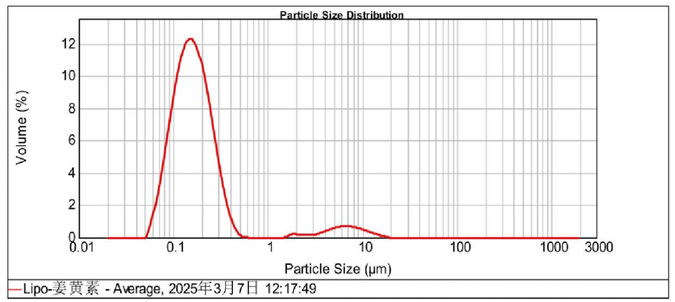
At the CPHI Celebration Awards & Networking Party, which brought together leading companies from the global pharmaceutical and health industry, Natural Field was honored with the Application Innovation Award champion for its NF Co-loading® Liposomal Curcumin.

Award-winning product:NF Co-loading® Liposomal Curcumin

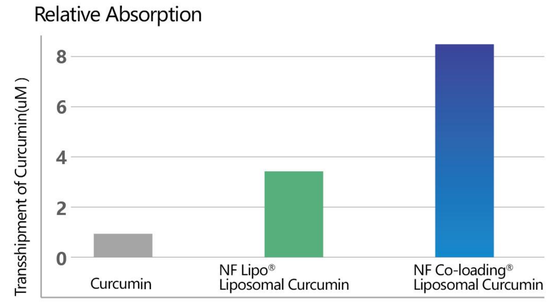
NF Co-loading® Liposomal Curcumin is spherical under the electron microscope, with a particle size of about 50nm. It uses Non-GMO sunflower phospholipid, significantly improving the bioavailability of curcumin, and can be used in products such as hard capsules and premixes. The results of Caco-2 cell in vitro absorption simulation experiment show that the relative absorption of NF Lipo® Liposomal Curcumin is about 3 times higher that of free curcumin, and NF Co-loading® Liposomal Curcumin is **8.08** times higher that of free curcumin.



NF Co-loading® Liposomal Curcumin
Electron Micrograph

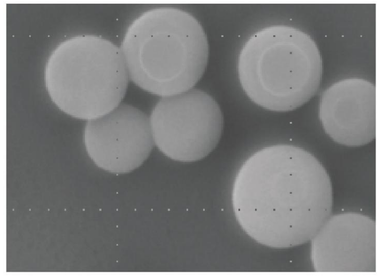


NF Co-loading® Liposomal Curcumin
Particle Size Distribution

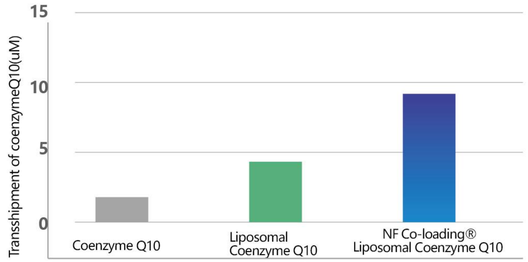


NF Co-loading®Liposomal Coenzyme Q10

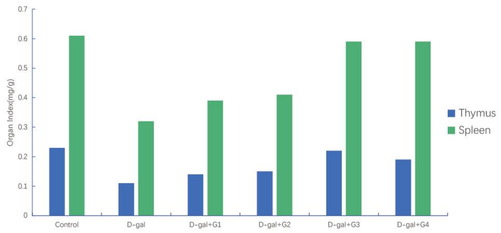
NF Co-loading® liposomal coenzyme Q10 appears spherical under electron microscopy, with a particle size of approximately 50nm. It is prepared using non-GMO sunflower lecithin and significantly enhances the bioavailability of coenzyme Q10. It can be used in products such as hard capsules and premixes. The Caco-2 cell in vitro absorption simulation experiment results show that the relative absorption of coenzyme Q10 liposomes is about 3 times that of free coenzyme Q10, while NF Co-loading® liposomal coenzyme Q10 is **7.86** times that of free coenzyme Q10.



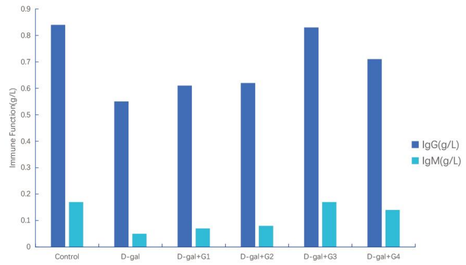
NF Co-loading® Liposomal Coenzyme Q10
Transmission Electron Microscope Image



Relative Absorption



Anti-aging effects: Spleen and thymus indices



Anti-aging effects: Immunoglobulin levels

NF Co-loading® Liposomal Coenzyme Q10:

Significantly reversed the D-galactose-induced reduction in spleen and thymus indices (P<0.001).
Significantly increased both IgG and IgM immunoglobulin levels (P < 0.001).

VERY FOOD AWARDS X 食研汇 —让食品创新更简单—

2025 VERY FOOD INNOVATION AWARD

No.1 Award

RAW MATERIAL GROUP

Cardiovascular Health

Award-wining ingredient	Enterprise
NF Co-loading® Liposomal Coenzyme Q10	Natural Field Co., Ltd.

The Very Food Innovation Awards, hosted by FTA, bring together top-tier expertise across food ingredients, brands, research, and investment. As a leading innovation media platform in China's food industry, FTA is dedicated to fostering the exchange of cutting-edge technologies and market trends within the global food and fast-moving consumer goods sectors.

Award-winning product: NF Co-loading® Liposomal Coenzyme Q10

This year's selection process was conducted through a rigorous evaluation by an authoritative panel of experts. With its innovative strength in the field of cardiovascular health ingredients, Natural Field was honored with the annual "Cardiovascular Health" award in the ingredients category. This accolade not only reflects Natural Field's exceptional performance in advancing functional nutrition ingredients but also signifies its continued leadership in driving the high-quality development of the healthy food industry.

《Co-loading Liposome White Paper》

Exclusively released by Natural Field, this report provides an in-depth analysis of application trends and market prospects in liposome technology, showcasing the innovative advantages of Natural Field's NF Co-loading® Liposome technology. It addresses challenges such as insufficient market education and high costs by integrating data and case studies, offering the industry a scientific and actionable technical reference to promote the high-quality development of functional ingredients.

Key Takeaways

- Mechanisms and advantages of co-loading liposome delivery systems
- Comparative analysis vs traditional liposome formulations
- Application potential in nutraceuticals, functional foods and beverages
- Case studies demonstrating improved stability and bioavailability

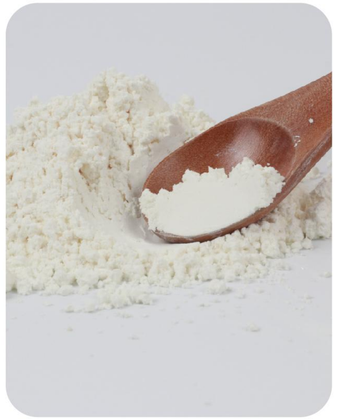
Co-loading Liposome Finished Product

Representative products of liposomes

Liposomal Glutathione

Liposomal Coenzyme Q10

Liposomal NMN



Liposomal Magnesium Bisglycinate

Liposomal Curcumin

Liposomal Resveratrol

Liposomal Series Products Antioxidants

Product Name	Chinese Product Name
Liposomal NMN	NMN 脂质体
Liposomal NAD	NAD 脂质体
Liposomal Glutathione	谷胱甘肽脂质体
Liposomal Coenzyme Q10	辅酶 Q10 脂质体
Liposomal Melatonin	褪黑素脂质体
Liposomal PQQ	PQQ 脂质体
Liposomal Spermidine	亚精胺脂质体
Liposomal Lipoic Acid	硫辛酸脂质体
Liposomal Ergothioneine	麦角硫因脂质体

Liposomal Powder List

Classification	Product Name	Chinese Product Name
Herbal Extract	Liposomal Resveratrol	白藜芦醇脂质体
	Liposomal Berberine Hydrochloride	盐酸小檗碱脂质体
	Liposomal Quercetin	槲皮素脂质体
	Liposomal Curcumin	姜黄素脂质体
	Liposomal Fisetin	漆黄素脂质体
	Liposomal Silymarin	水飞蓟脂质体
	Liposomal Ashwagandha Extract	南非醉茄提取物脂质体
	Liposomal Lutein	叶黄素脂质体
	Liposomal Gingerol	姜辣素脂质体
	Liposomal Apigenin	芹菜素脂质体
	Liposomal Tea Polyphenols	茶多酚脂质体
	Liposomal Hesperidin	橙皮苷脂质体
Vitamins	Liposomal Vitamin C	维生素C 脂质体
	Liposomal Vitamin D3	维生素 D3 脂质体
	Liposomal Vitamin K2	维生素 K2 脂质体
	Liposomal Vitamin E	维生素 E 脂质体

Classification	Product Name	Chinese Product Name
Vitamins	Liposomal Vitamin B1	维生素 B1 脂质体
	Liposomal Vitamin B2	维生素 B2 脂质体
	Liposomal Vitamin B6	维生素 B6 脂质体
	Liposomal Vitamin B9	维生素 B9 脂质体
	Liposomal Vitamin B12	维生素 B12 脂质体
	Liposomal Vitamins B-complex	复合维生素 B 脂质体
Minerals	Liposomal Ferrous Glycinate	甘氨酸亚铁脂质体
	Liposomal Ferric Pyrophosphate	焦磷酸铁脂质体
	Liposomal Magnesium Glycinate	甘氨酸镁脂质体
	Liposomal Magnesium Malate	苹果酸镁脂质体
	Liposomal Zinc Gluconate	葡萄糖酸锌脂质体
	Liposomal Zinc Citrate	柠檬酸锌脂质体
Other Bioactive Compounds	Liposomal Gamma-Aminobutyric Acid	γ－氨基丁酸脂质体
	Liposomal Palmitoylethanolamide	十六酰胺乙醇脂质体
	Liposomal Succinic Acid	琥珀酸脂质体
	Liposomal Citicoline	胞磷胆碱脂质体