



禾瑞康源  
HERBALTH

源于自然  
让人类更健康  
From Nature  
For Nature





We devote to the research  
and better application  
of plant extracts in livestock industry.

# Company Profile



Planting



R&D



Production



Sale

Hunan Herbalth Biotechnology Co.,Ltd is jointly invested and established by Perfly-bio Group and Delore Group. On the basis of long-term cooperation between Delore and global feed enterprises, and joint research with multiple agricultural university and breeding farms, Herbalth has been devoted to offer natural solutions for feed and livestocks enterprises, and promote the development of plant extracts in animal industry.



## About Factories

Delore Group owns two production bases for the production of plant extracts since 2009. Delore is equipped with world leading production equipments and automatic control systems, which can ensure stable product quality. In addition, Delore has self-controlled GAP raw material planting bases to ensure the quality and price from origin, and optimize the cost performance of products. Featured products of Delore such as Rosemary Extract, Monk Fruit Extract (Luo Han Guo Extract), Hesperidin and Natural Citral are widely used in foods, food supplements, cosmetics, pharmaceuticals, animal feeds, etc. Our products have been sold to EU, US, South Asia, etc, and widely praised by clients.

Delore and Herbalth own 13,300,000 m<sup>2</sup> planting base of rosemary and monk fruit that mainly locate in Yongzhou, Hunan and Xuchang, Henan. Herbalth ensures the quality and stable supply of raw material through breeding to cultivation with best management, and has been committed ourself to poverty alleviation.



## About Laboratory

Delore Group owns a third-party impartiality laboratory, which covers an area of 2000 m<sup>2</sup>, and the value of the major 20 equipments is nearly CNY 15 million. The lab is a CMA certified global demonstrational laboratory under the cooperation with Shimadzu. The detection standard could be in accordance with the European Union, the United States, Japan, South Korea and other international standards, and the testing items cover the main indicators related to plant extracts, such as assay, loss on drying, ash, heavy metals, microorganism, solvent residues, pesticide residues, etc. The accuracy of quantitative analysis is greatly improved by equipped with LC-MS-MS, GC-MS-MS, ICP-MS to help Delore to control the quality control under stricter standards and meet the quality requirements from world-wide clients.

## Featured Instrumentations



ICP-MS  
电感耦合等离子体质谱仪



HPLC  
高效液相色谱



GC-MS  
气相色谱-质谱联用仪



GC-MS-MS  
气相色谱-二级质谱联用仪



LC-MS-MS  
液相色谱-二级质谱联用仪



Microwave Sample  
Preparation System  
微波消解仪

## Featured Equipments

三效降膜浓缩器  
Three-action film-decomposed pipe evaporator

处理量:8000kg/h  
Capacity:8000kg/h

连续逆流提取机组  
Continuous countercurrent extraction unit

处理量:3000kg/h  
Capacity:3000kg/h

真空闪蒸干燥机组  
Vacuum flash drying unit

出粉量:250kg/h  
Capacity:250kg/h

喷雾干燥塔  
Spray drying tower

水份蒸发量:300kg/h  
Capacity:300kg/h

膜过滤设备  
Membrane filtration equipment

处理量:11T/h进液  
Capacity:11T/h entering liquid

膜浓缩设备  
Membrane concentration equipment

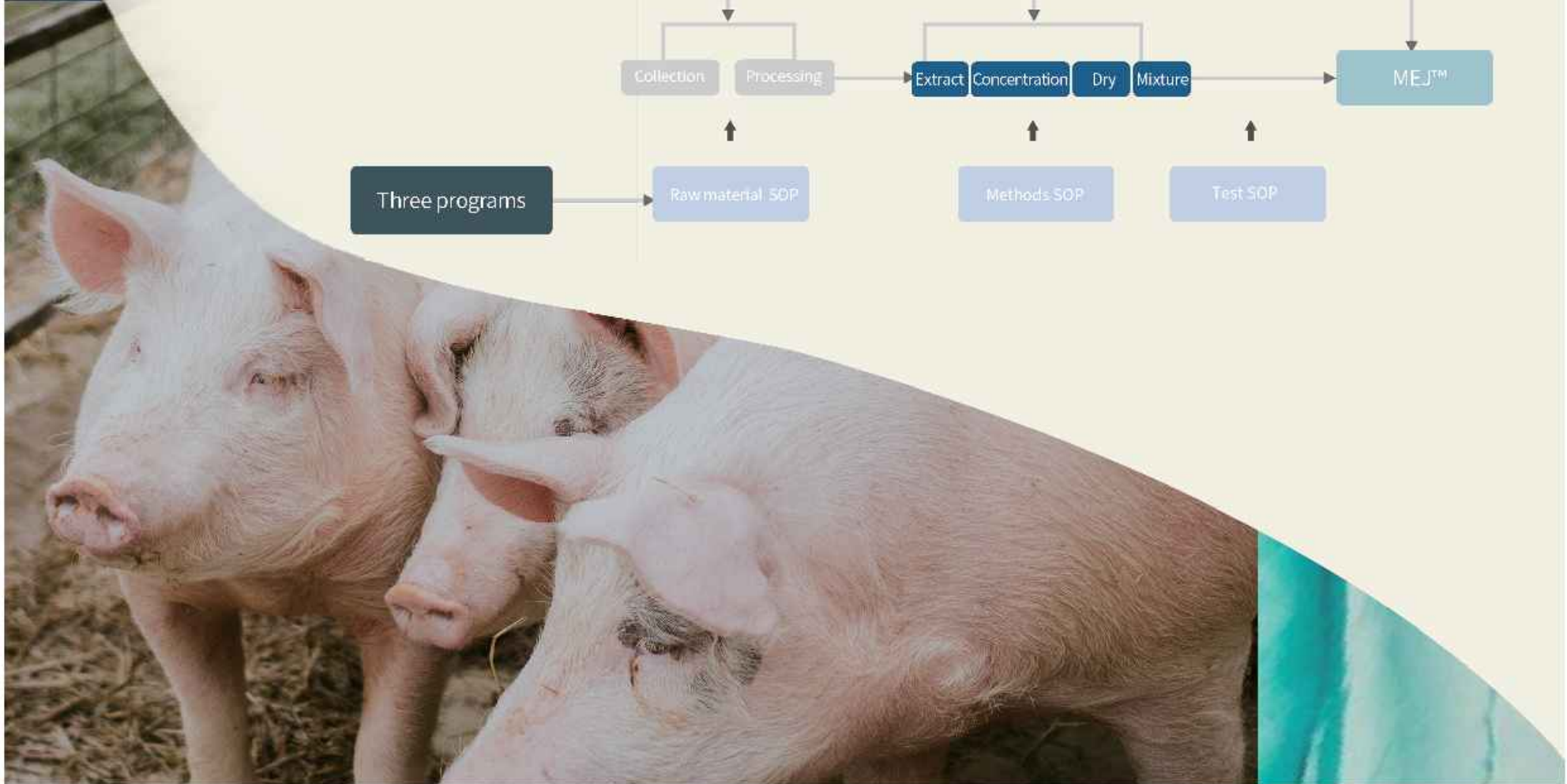
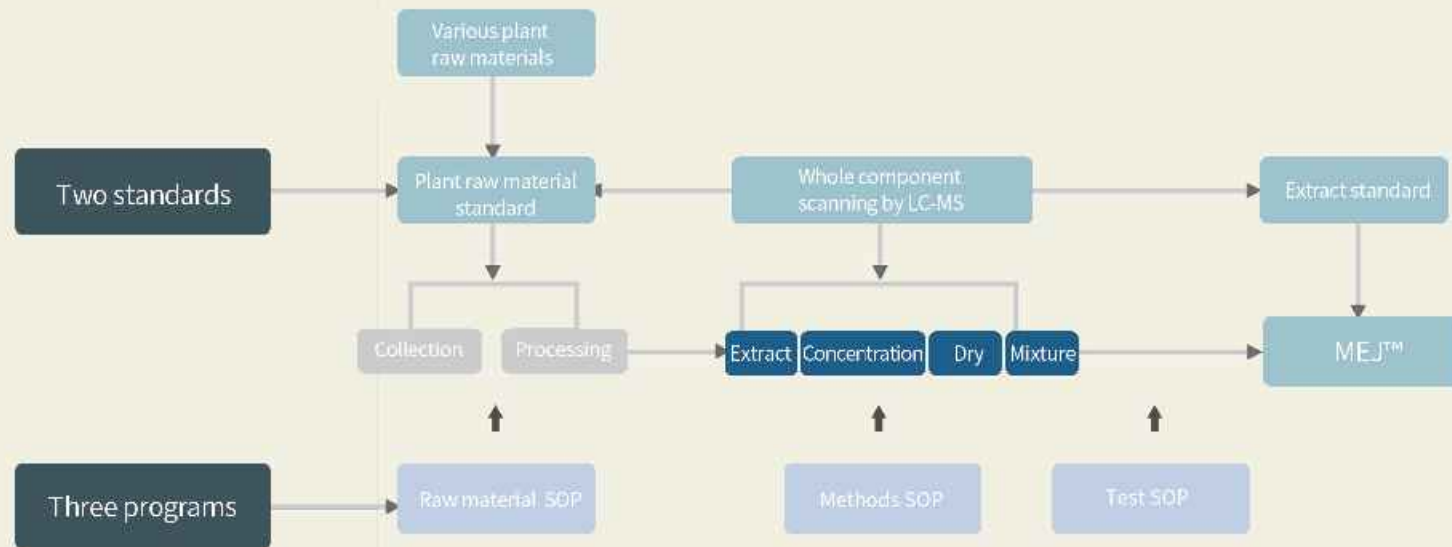
处理量:5T/h  
Capacity:5T/h

全自动CIP清洗系统  
Automatic CIP cleaning system

配备西门子自动控制系统※  
Equipped with automatic control system※

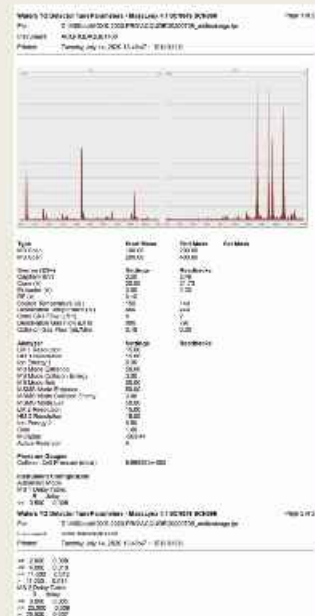
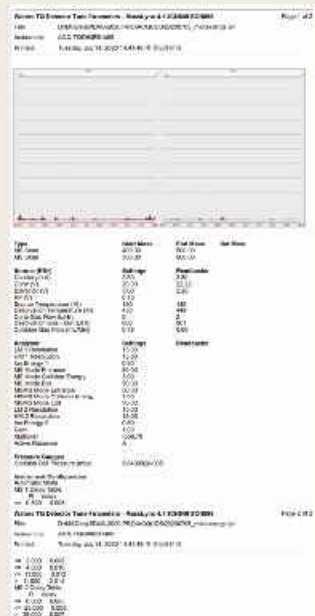
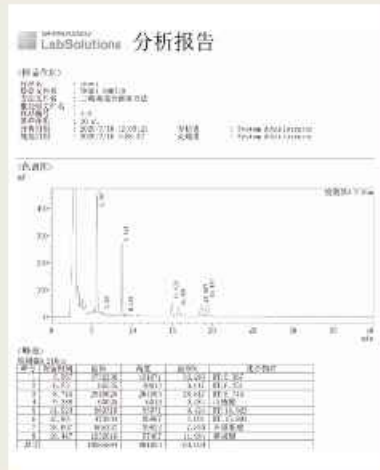
# Production Process

Two standards, three programs, ensure product quality and stable.



# Whole Component Quality Control

## Analysis Report







# MEJ™ 01

Natural plant feed materials

## Composition of raw materials

Rosemary extract

Momordica grosvenori extract

Citrus aurantium extract

## Quality Index

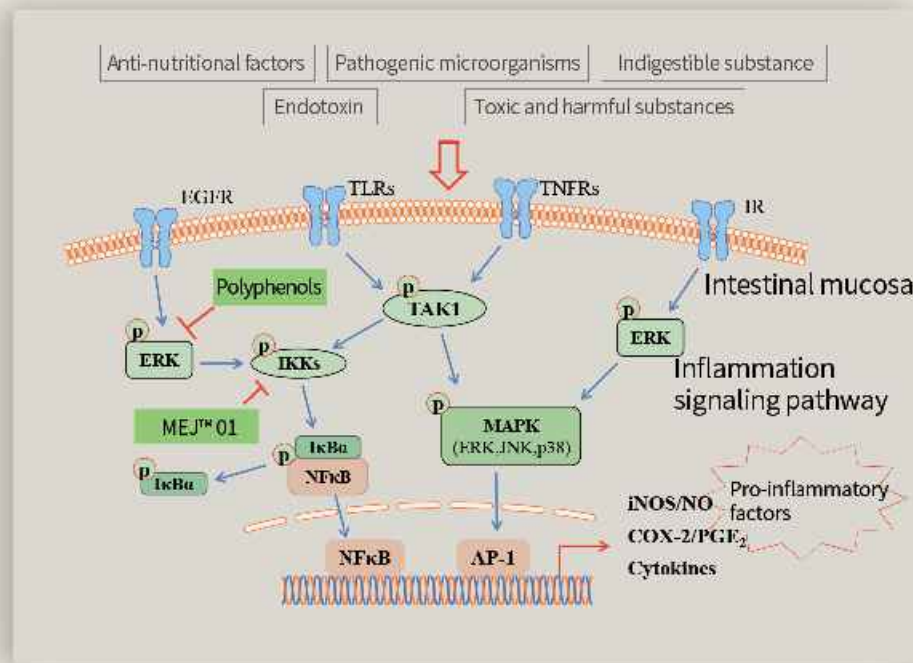
Triterpenoids  $\geq 1.5\%$

Flavonoids  $\geq 1\%$

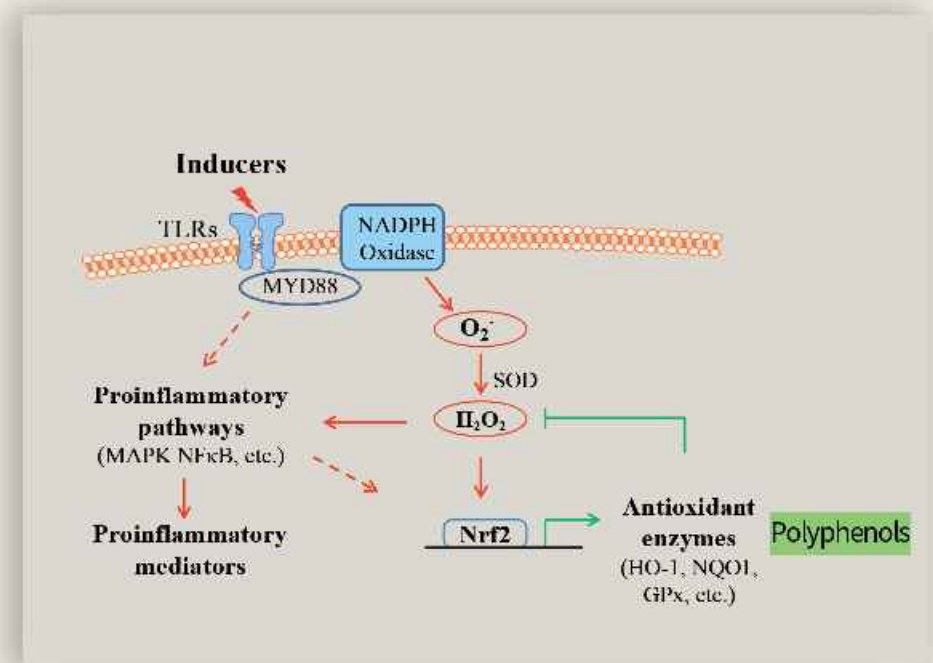
European formula, ten years of application verification

# Mechanism of Action

## MEJ™ 01



Block intestinal inflammation



Anti-oxidation, Relieve stress

# Application Experiment

MEJ™ 01 significantly reduce piglets diarrhea rate, effectively promote the growth performance

Test pig breeds: Duroc -Landrace -Yorkshire Crossbred pig

Test phase: 31--60 days old

Addition: 200g/t

Test result: The diarrhea of piglets was effectively relieved, and the diarrhea rate was reduced from 33.3% to 0%.

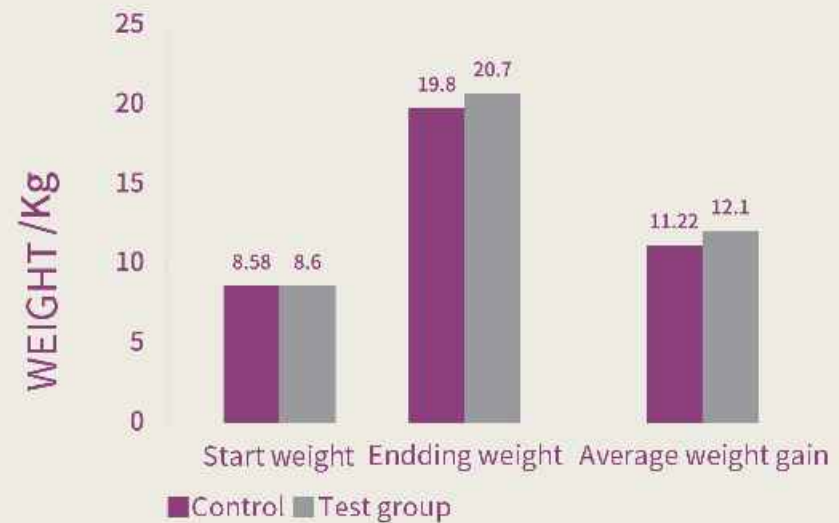


Test pig breeds: Duroc -Landrace -Yorkshire Crossbred pig

Test phase: 31--60 days old

Addition: 200g/t

Test result: The growth performance of piglets was effectively promoted, and the average weight gain was increased by 0.9Kg.



## Application Solution: Proposal to add per ton of feed

MEJ™ 01

Use-phase	Addition	Effect
Creep feed/ Pre-nursery feed	200-500	Prevent diarrhea, reduce stress and promote growth
Post-nursery feed	200-400	Promote growth and improve disease resistance
Growing and fattening pig feed	200-300	Promoting growth and improving feed conversion rate
Pregnant/lactating sow feed	200-300	Scavenging free radicals, improving constipation, increasing the number of healthy offspring and weaning litter weight
Egg poultry, meat poultry feed	50—200	Effectively solve the problem of feed stool and water stool of egg and meat poultry, and prevent oviduct inflammation of egg poultry
Lamb feed/ calf feed	200—500	Prevent lamb, calf diarrhea, diarrhea and other intestinal diseases
Adult cattle and sheep feed	200—500	Prevention of diarrhoea in adult cattle and sheep
Aquatic feed	200—500	Prevent intestinal diseases, improve the body's anti stress, anti-oxidation



# MEJ™ 02

Natural plant feed materials

## Composition of raw materials

Rosemary extract  
Orange peel extract  
Litsea cubeba extract  
Hawthorn extract  
Mulberry leaves extract

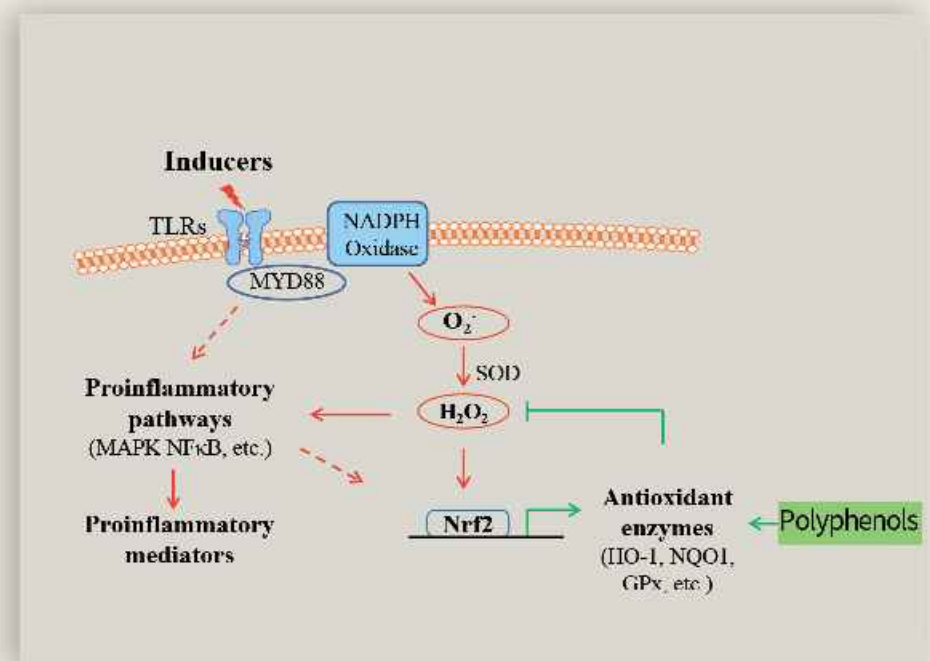
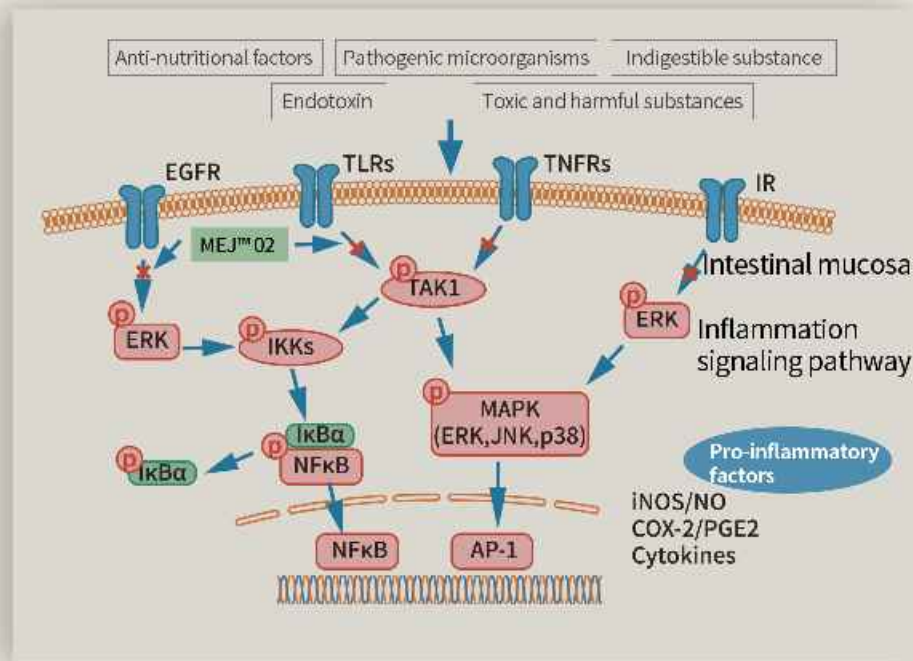
## Quality Index

Triterpenoids  $\geq 7\%$   
Flavonoids  $\geq 5\%$

European formula, ten years of application verification

# Mechanism of Action

MEJ™ 02



## 1. Multiple targets block intestinal inflammation

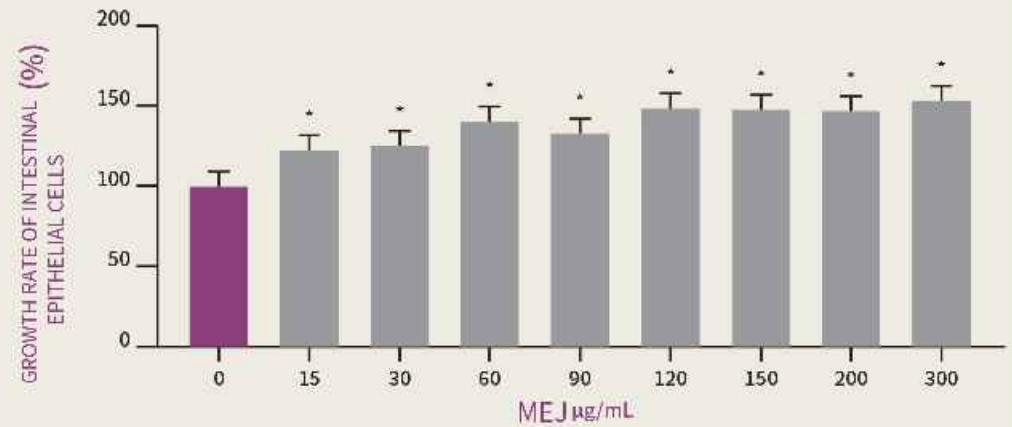
A combination of multiple active ingredients and multiple targets block the intestinal mucosal inflammation signaling pathway

Reduce the production of proinflammatory factors and prevent inflammation

## 2. Antioxidant, relieve stress

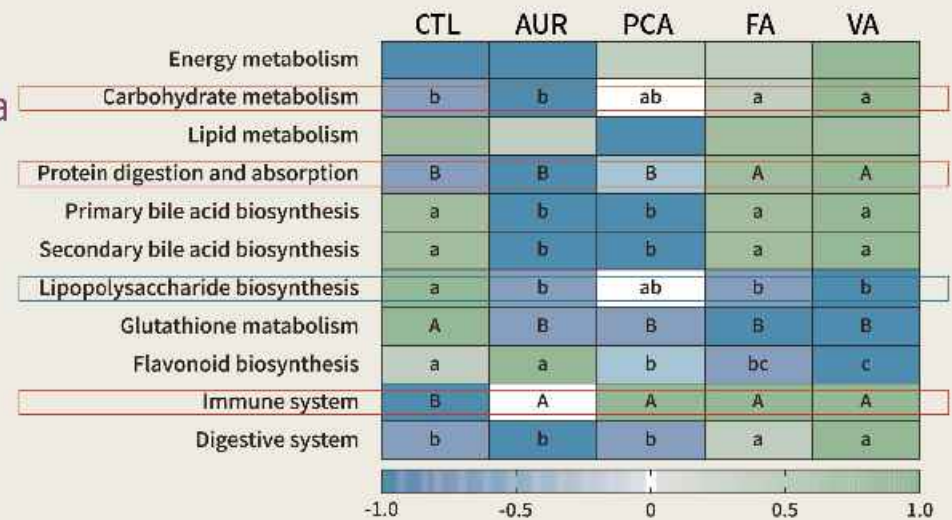
### 3、 Third, promote the proliferation of intestinal epithelial cells and maintain the integrity of intestinal mucosa

Plant active ingredients can effectively promote the proliferation of intestinal epithelial cells, maintain normal intestinal structure and barrier function, improve the utilization of nutrients, maintain intestinal osmotic pressure, and inhibit the apoptosis of intestinal epithelial cells caused by bacteria and viruses.

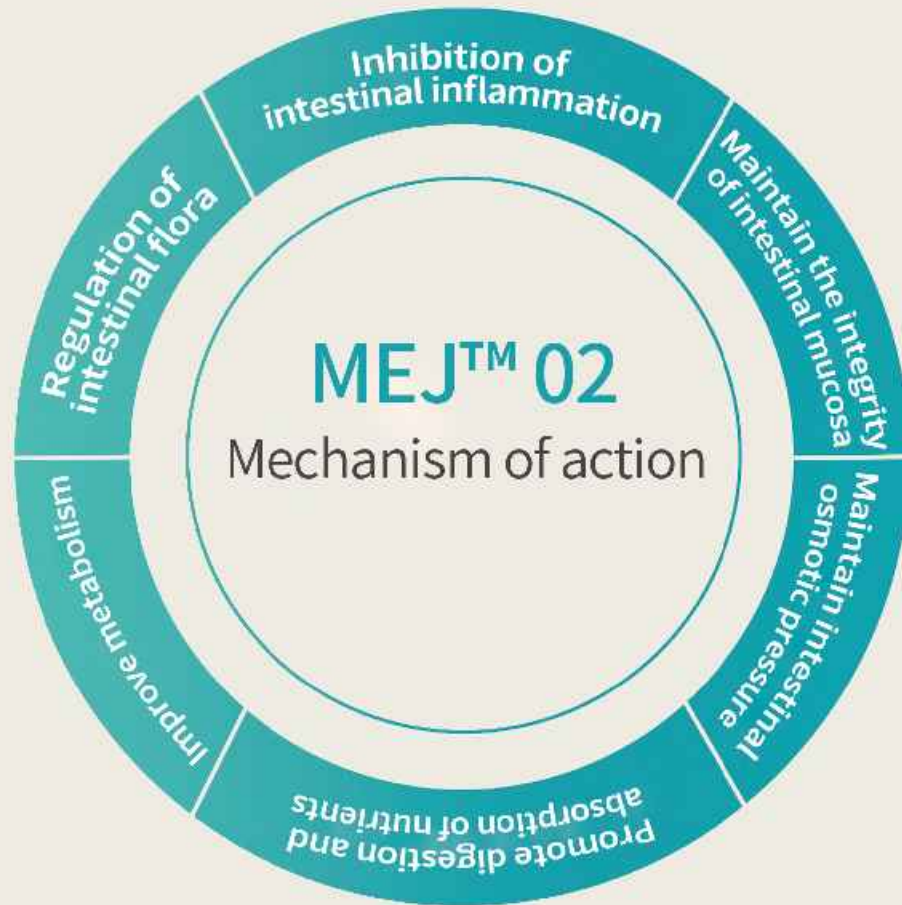


### 4、 Fourth, optimize the structure of intestinal flora

In the piglet experiment, the microflora regulated by the active ingredient MEJ™ 02 was positively correlated with carbohydrate metabolism, protein digestion and absorption, and immune capacity, but negatively correlated with lipopolysaccharide synthesis.



# Product Superiority



High efficiency extraction technology  
Full release of active ingredients

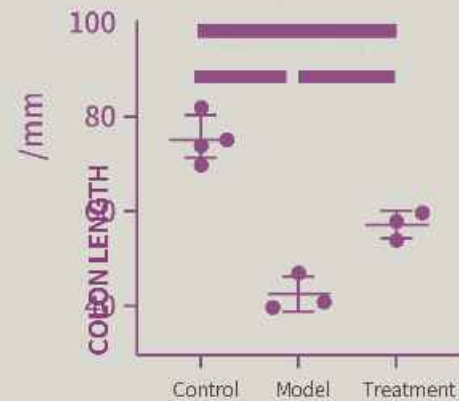
Scientific and rational formulation  
Comprehensive protection  
of intestinal health

Mass spectrometry fingerprint  
Ensure high efficiency  
and stability of products



# Application Experiment

MEJ™ 02 significantly inhibited DSS induced colitis in mice.



Experimental model: mouse enteritis model

Setting: Animal Laboratory of Hunan Agricultural University

Dose: 2000mg/Kg

Result:

Significant remission of colitis  
Increased colon length

MEJ™ 02 can effectively alleviate the epidemic diarrhea (PED) of piglets and reduce the mortality of piglets.

5 points for severe diarrhea

3 points for moderate diarrhea

Less than 3 points for no diarrhea or mild diarrhea.



## Application Solution: Proposal to add per ton of feed

### MEJ™ 02

Use-phase	Addition	Effect
Lactation	Gavage 0.5-1g/ head	Prevent diarrhea and promote intestinal development
Creep feed/ Pre-nursery feed	100-300	Prevent diarrhoea, reduce stress, promot food intake and prevent pig stiffness
Post-nursery feed	100-200	Promote growth and improve disease resistance
Growing and fattening pig feed	100-150	Promoting growth and improving feed conversion rate
Pregnant/lactating sow feed	100-150	Scavenging free radicals, improving constipation, reduce mastitis increasing the number of healthy offspring and weaning litter weight
Egg poultry, meat poultry feed	50—100	Effectively solve the problem of feed stool and water stool of egg and meat poultry, and prevent oviduct inflammation of egg poultry、 anti-stress
Lamb feed/ calf feed	100—300	Prevent lamb, calf diarrhea, diarrhea and other intestinal diseases
Adult cattle and sheep feed	100—300	Prevention of diarrhoea in adult cattle and sheep
Aquatic feed	100—300	Prevent intestinal diseases, improve the body's anti stress, anti-oxidation、 disease resistance

# Certificate of Honor





禾瑞康源  
HERBALTH

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