Yiming Biotech is the leading food enhancers provider located in prosperous east China, we are specialized in fermentation of food-grade enzymes and other enhancers for the food industry for over 30 years. In the faith of consistently providing outstanding products and a better customer satisfaction, we continuously improves our facilities to meet the highest industrial standards. The company is now consisting of three major manufacturing plants and one advanced laboratory in cooperation with Jiangnan University, a well respected academy for food sciences. Now we have an extensive sales network in Great China region and looking forward to collaborating new sales channels all over the globe.
PRODUCT LINE

CURDLAN

TRANSGLUTAMINASE

ε-POLYLYSINE

LIPASE

VISION IN THE FURTHER

COSMETIC

HEALTHCARE

BREWING

AND MORE
TRANSGlutaminase
Natural Enzyme

INTRODUCTION
Transglutaminase is an enzyme that crosslinks proteins together by linking the epsilon amino group of lysine in one protein to the carboxyl group of aspartic or glutamic acids in another protein. Transglutaminase is naturally present in the majority of organisms tissues and involved in various biological processes. Our TG is fermented from Streptococcus moharaense and its crosslinking characteristic is widely used to improve the physical and functional properties of food products.

MECHANISM

![Mechanism Diagram]

Protein without TG  →  TG  →  Protein with TG

OPTIMUM PH AND TEMPERATURE

![Optimum PH and Temperature Graphs]

CHARACTERISTICS

- Natural and safe
- Strong binding force
- Good pH and thermal stability

APPLICATION

- Texture Improvement
- Meat Reconstruction
- Dairy Products

Jiangsu Yiming Biological Technology Co., Ltd.

+86 21 68580630  info@jymsw.org  Room 708, Building 1, 169 Shengxia Road, Pudong New District 201210, Shanghai, China.  www.jymsw.com
**TRANSGlutaminase**

**Texture Improvement**

### SAUSAGES

**PROCESS**

1. Raw material
2. Adding TG and chopping
3. Shaping
4. Reaction
5. Smoking
6. Finished products

**ADVANTAGES**

- Improves gel strength, elasticity, and quality
- Prevents splitting and improves slicing
- Reduces production cost by eliminating the addition of raw material
- Increases water-holding capacity and yield
- Reduces syneresis in storage

### MEAT BALLS

**PROCESS**

1. Raw material (pork, chicken, beef, shrimp)
2. Chopping
3. Adding TG and chopping
4. Shaping
5. Reaction
6. Reheating
7. Refrigeration
8. Finished products

**ADVANTAGES**

- Improves texture and elasticity
- Prevents splitting
- Reduces production cost by eliminating the addition of raw material
- Increases water-holding capacity and yield
- Reduces syneresis in storage

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Jiangsu Yiming Biological Technology Co., Ltd.

- +86 21 68580630
- info@jymswar.com
- sales@jymswar.org
- Room 705, Building 1, 169 Shengxia Road, Pudong New District 201210, Shanghai, China.
- www.jymswar.com
TRANSGlutaminase
Meat Reconstruction

BEEF, PORK, POULTRY, SEAFOODS ETC...

PROCESS — SPRINKLE METHOD

- Raw material
- Sprinkling
- Molding/Vacuum package
- Reaction
- Freezing/Slicing
- Finished products

- Cost-effective
- Transforms cuts into uniformed portions with a high added value
- Water retention
- Structured products are thermo-reversible

BEEF, PORK, POULTRY, SEAFOODS ETC...

PROCESS — SLURRY METHOD

- TG Slurry
- Tumbling with raw material
- Molding/Vacuum package
- Reaction
- Freezing/Slicing
- Finished products

- Cost-effective
- Transforms cuts into uniformed portions with a high added value
- Water retention
- Structured products are thermo-reversible
TRANSGlutaminase
Dairy Application

**YOGHURT PRODUCTS**

**PROCESS**

- Raw Milk Preparation
- Homogenization
- Pasteurization
- Fermentation
- Filling
- Refrigeration
- Yoghurt

**ADVANTAGES**

- Reduces syneresis
- Enhances the gel strength
- Improves the viscosity and consistency
- Reduces or replaces the usage of emulsifiers or stabilizers
- Enables cost savings through reduction of proteins and other additives

**CHEESE PRODUCTS**

**PROCESS**

- Raw Milk Preparation
- Homogenization
- Pasteurization
- Fermentation
- Coagulation
- Cutting
- Draining of Whey
- Molding
- Ripening
- Cheese

**ADVANTAGES**

- Reduces syneresis
- Increases yield in cheese between 10% - 20%
- Facilitates slicing process
- Provides a better structure
- Reduces and eliminates the addition of proteins, standardizing and reducing final product costs
INTRODUCTION

Curdlan was discovered in 1976 by Prof. Tokuya Harada and started manufacturing since 1989. Curdlan is a β-1,3 glucan, produced by microbes in glucose fermentation. It's odorless, tasteless, thermal irreversible, colourless and insoluble.

CHARACTERISTICS

1. Gelling ability

2. Strong water-holding capacity

Curdlan can absorb 10 times of water at room temperature, and the water absorption capacity is highest at 50°C.

PREPARATION OF SUSPENSION LIQUID

1. High speed stirring method

2. High viscosity method

Jiangsu Yiming Biological Technology Co., Ltd.
## APPLICATION

- Meat Products
- Aquatic Products
- Wheat Products
- Snacks
- Vegetarian Products

## COMPARISON OF CURDLAN WITH OTHER GUMS

<table>
<thead>
<tr>
<th></th>
<th>Water Dissolution</th>
<th>The Needed Steps and Conditions for Gelting</th>
<th>Irreversibility of Gel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Only need heat</td>
<td>Heat + cool</td>
<td>Add ion</td>
</tr>
<tr>
<td>Curdlan</td>
<td>Insoluble</td>
<td></td>
<td>(Ca(^++) or Mg(^++))</td>
</tr>
<tr>
<td>1-carrageenan</td>
<td>Soluble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-carrageenan</td>
<td>Soluble</td>
<td></td>
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</tr>
<tr>
<td>Agar</td>
<td>Soluble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High methyl pectin</td>
<td>Soluble*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low methyl pectin</td>
<td>Soluble*</td>
<td></td>
<td>(Ca(^++))</td>
</tr>
<tr>
<td>Sodium alginate</td>
<td>Soluble*</td>
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<td>(Ca(^++))</td>
</tr>
<tr>
<td>Gelatin gum</td>
<td>Soluble</td>
<td></td>
<td>(Na(^+))</td>
</tr>
<tr>
<td>Gelatin</td>
<td>Soluble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albumen powder</td>
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</tr>
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<td>Whey protein</td>
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</tr>
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<td>Isolated soy protein</td>
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</tr>
<tr>
<td>Konjac powder</td>
<td>Soluble*</td>
<td></td>
<td>(Ca(^++))</td>
</tr>
</tbody>
</table>

- Forming gel
- Soluble in cold water
- Add sugar
- Add ion
**ε -POLYLYSINE**

Natural Preservative

**INTRODUCTION**

ε -Polysine is a natural, safe and healthy antibacterial food preservative. It is produced from fermentation process by using Streptomyces albicus under aerobic conditions. It has obvious inhibition to gram-positive bacteria and gram-negative bacteria, yeast, mould, virus, therefore it is widely used as an antistaling agent.

**MOLECULAR STRUCTURE**

ε -Polysine is homopolymer of L-lysine, one of the essential amino acids. It is connected by ε -amido bond compounded by a ε-amido of L-lysine and a ε -carboxyl of another L-lysine. The chemical formula for ε -Polysine is shown below:

![Chemical Structure](image)

**ADVANTAGES**

- Natural and healthy
- Broad spectrum of antibacterial
- Great water-solubility & thermal stability
- Friendly blend with other preservatives
- Wide range of applications

Jiangsu Yiming Biological Technology Co., Ltd.

- +86 21 66580630
- info@jaymsw.org
- sales@jaymsw.org
- Room 709, Building 1, 169 Shengxia Road, Pudong New District 201210, Shanghai, China.
- www.jaymsw.com
APPLICATION

ε-POLYLYSINE

Wheat Products
Pastry
Cakes

Meat Products
Cosmetics

Beverages
Sauces
Wine
...

USAGE

Prepare 5%-10% ε-Polylsine solution with cold water or distilled water, then mix with the rest of ingredients. ε-Polylsine could provide a better result when it cooperates with other food preservatives.