Angel Yeast Cosmetic Ingredients

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Carboxymethyl yeast beta-glucan (CMG) C90

——Expert in skin repairing

Yeast beta-glucan is a kind of polysaccharid exist in the cell wall of yeast, which can fortify the immunity of human being. CMG is the partly carboxymethylated yeast beta-glucan, which is water soluble. CMG has the same function as yeast beta-glucan when used in cosmetic, can greatly revitalize the skin’s defense system, enhance the natural repair processes and reduce the sensitivity of skin.

Just below the surface layer (epidermis) of your skin you have Langerhans cells. These incredible immune cells have the power to boost collagen production, increase wound repair time and effectiveness, defend against external threats such as sun, smoke, environmental assaults, and mitigate the effects of stress, all of which lead to a remarkable reduction in the ugly appearance of wrinkles, blemishes, age spots and other skin problems.

The miracle of CMG is its unique molecular shape. When it's applied to skin, it quickly penetrates the epidermal layer and comes in contact with Langerhans cells, instantly switching them on. CMG works powerfully at the cellular level to deliver what can only be described as a radical increase in your skin's ability to repair, protect and improve its appearance.
Test 1   CMG90 used for repairing the sunburn

CM-glucan was used in the pretreatment for protecting culture cells against oxidative stress before exposing to UVA radiation at a dose rate of 300Wm\(^{-2}\) for different time periods. The contents of GSH and ferritin were determined by enzymatic assay immediately after UV radiation and 24 hours at 100 ug/mL, CM-glucan clearly showed protective effects against oxidative stress induced by UVA radiation.

Test 2   CMG90 used for anti-aging
The formulation of CM-glucan at various concentrations (0.04-0.4%) of hydrogel and oil in water emulsion were used as a pretreatment on five volunteers’ forearms for evaluation of skin humidity protective effects caused by a challenge with 10% sodium dodecyl sulfate over a period of 2 weeks. All formulations enhanced the skin humidity compared to the untreated skin. The protective effects against the skin humidity reduction depends on the CM glucan concentration.

**Test 3  CMG90 used for moisturizing**

The renewal rate of the stratum corneum was determined by the gradual diminution of a fluorescence set at the onset of the experiment by dansyl chloride. 0.4% CM glucan in emulsion enhanced renewal rate of the stratum corneum more than 30% compared with untreated skin.

**Test 3  CMG90 used for anti-oxidation**

Skin of volunteers were pretreated for 5 days with oil-in-water emulsions containing different concentrations of...
CMG. Then the skin were exposed to UV-A. Squalene hydroperoxides concentrations were measured in chemiluminescence units after lipid extractions from irradiated skin.

**Application:**
- Anti-aging products
- Anti-oxidation products
- Sun-care products
- Moisturizing and repairing products
- Recommend: 5%-10%
Yeast Extract E100

—Expert in skin anti-aging

Yeast extract contain plenty of protein, amino acid, peptide and nucleic acid, which is extracted from yeast cell using enzyme. In cosmetic, yeast extract can be used in various products such as anti-aging, moisturizing and recitalizing products.

On dry base, yeast extract contain at least 30% amino acid, 15% nucleic acid and 30% peptide, which is the main ingredient of the NMF (natural moisture factors). The amino acid and the nucleic acid can be easily absorbed by skin and nourish the skin cells. Consequently, yeast extract can promote collagen synthesis, act as an anti-inflammatory, also can soothe, moisturize and revitalize the skin. It can be used in a variety of cosmetic products, including under-eye creams and facial lotions.

E100

Amino acid, peptide

Nucleic acid

Nourish the skin

Remove the free radicals

Nourish the skin

Absorb UVA

Anti-oxidation

Activate skin cell

Nourishing

Moisturizing

Anti-aging

Sunscreen;
Anti-radiation

E100——

INCI: Yeast extract;

5% solution, colorless and odorless

Can be absorbed easily

Rich in amino acid, peptide and nucleic acid

Expert in skin anti-aging
**Test 1  The scope of the Mw of E100**

<table>
<thead>
<tr>
<th>Scope of the Mw</th>
<th>Content, %</th>
<th>Mw</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &gt;3000</td>
<td>0.10</td>
<td>3649</td>
</tr>
<tr>
<td>2 3000~2000</td>
<td>0.30</td>
<td>2237</td>
</tr>
<tr>
<td>3 2000~1000</td>
<td>5.73</td>
<td>1321</td>
</tr>
<tr>
<td>4 1000~500</td>
<td>13.35</td>
<td>712</td>
</tr>
<tr>
<td>5 500~180</td>
<td>47.35</td>
<td>251</td>
</tr>
<tr>
<td>6 &lt;180</td>
<td>33.17</td>
<td>146</td>
</tr>
</tbody>
</table>

Use the volume exclusion chromatography, the Mw of the E100 was determined. The results indicate that the main fractions of the E100 is amino acid, nucleic acid and peptides. The Mw of the E100 is small so that it can be absorbed easily by the skin cells.

**Test 2  E100 used for anti-aging**

32 volunteers aged from 35-55 take part in the test. The formulation of E100 at a concentrations 0.5% of oil in water emulsion were used as a treatment on the volunteers' forearms for 4 weeks. Every week the skin was tested by the MicroSkin II to determine the roughness and the skin smoothness depth.
Test 3  E100 used for moisturizing

30 volunteers take part in the test. Using Tewameter TM300 to determine the transepidermal water loss (TEWL) after using the oil in water emulsion. The results indicate that E100 can complement the skin moisture continuously.

**Application:**
- Anti-aging products
- Moisturizing products
- Anti-oxidation products
- Recommend: 5%-10%
Yeast Nucleotides N80

-- Anti-wrinkle expert

Yeast anti-wrinkle essence N80 is obtained from yeast nucleic acid by biological enzymolysis. During the growth of the cells, the metabolism is slowing down due to the nucleic acid deficiency, which leads to the acceleration of the skin aging. Supplying with nucleic acid can enhance the cells’ metabolism, make the cells in a great vitality, accelerate the speed of cells’ renewal, and promote the synthesis of collagen tissue in the skin, all of these actions lead to the reduction of skin wrinkles and the improvement of the skin elasticity. Therefore, the nucleic acid gets the reputation of “revitalizing agent of the skin cells”. The active ingredients N80 can quickly be absorbed by the skin and supply the skin nucleic acid substances, it can anti-wrinkle deeply in the skin and revitalize the skin quickly.

N80

- Cells revitalizing
- Moisturizing; Sunscreen
- Skin repair; Hair regeneration

- Anti-wrinkle
- Skin whitening
- Anti-aging

N80——

INCI: Adenosine, guanosine, thymidine, uridine;
Natural raw material from specific yeast strain;
Biological enzymolysis; small molecule; rapid absorption by skin;
Revitalizing, repair and anti-aging of the skin cells;
Anti-wrinkle expert.
Test 1 Anti-wrinkle——Skin elasticity improvement

**Effect:** 32 objects’ left and right eye skin were selected as the test area, the skin elasticity before and after the tests(samples:5%N80; control groups: liquid without 5%N80) were measured using skin elasticity tester. R2 value is the ratio of the skin springback without pressure to the skin maximum amount of stretch with pressure. During the 4 weeks of the test, the R2 value of the samples was increasing, and the R2 change rate of the samples was significantly higher than the control groups.

![Graph showing change rate of R2 over time](image)

Test 2 Anti-wrinkle——Eye wrinkle repairment

**Effect:** 32 objects’ left and right eye skin were selected as the test area, the grain degree of the skin before and after the tests(samples:5%N80; control groups: liquid without 5%N80) were measured using MicroSkin II multifunctional dermoscopy image analysis system. During the 4 weeks of the test, the skin roughness of the samples was decreasing after using 2 weeks of 5%N80, and the change rate of the samples was significantly higher than the control groups.

![Graph showing change rate over time](image)
## Test 3  Safety——Patch test

<table>
<thead>
<tr>
<th>Samples</th>
<th>No reaction (0)</th>
<th>Light erythema (1)</th>
<th>Erythema, infiltration or papules (2)</th>
<th>Erythema, infiltration, edema, papules; reaction beyond the test area (3)</th>
<th>Obvious erythema and severe infiltration, edema, fusion of herpes; reaction beyond the test area (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N80 original solution</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Liquid without N80</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5%N80</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Effect:** N80 is a natural raw material, there is no allergic reaction during the use, N80 is safe and reliable.

**Applications:**
- Compatible with a wide range of cosmetic ingredients
- Pale yellow and transparent liquid
- Eye cream product
- Anti-wrinkle product
- Recommend: 3%-10%
Zinc-enriched Yeast Extract Z20

-- Acne removing expert

Zinc-enriched yeast extract Z20 is yeast essence extracted from zinc-enriched yeast by biological enzymolysis. In addition to containing a large number of skin-necessary amino acids, peptides, nucleic acids and other biologically active substances, Z20 also contains the necessity of skin metabolism: zinc. The chelated form of zinc and amino acid reduces the skin irritation of zinc, which make it a good anti-inflammatory and acne removing.

Zinc is important and necessary to healthy skin. Zinc is extremely important to the proliferation of fibroblasts and the synthesis of collagen fiber. According to the research data, serum zinc of patients suffering from psoriasis, seborrheic dermatitis and acne vulgaris is lower than the level of healthy people.

Z20 is produced by Angel Yeast Co., Ltd., using patented raw materials and modern biotechnology, refined with a series of patented technology of fermentation, enzymolysis and membrane separation. Z20 has a variety of skin-beneficial effects, such as anti-inflammatory, acne removing, anti-aging.
Test: Effect of zinc treatment for acne, dermatitis

<table>
<thead>
<tr>
<th></th>
<th>Number of objects</th>
<th>Cured</th>
<th>Effective</th>
<th>Improved</th>
<th>Invalid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acne</td>
<td>30</td>
<td>12</td>
<td>8</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Dermatitis</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**Effect:** Serum zinc level of patients with acne decreased significantly compared with healthy objects, and the lesion more severe, the zinc reducing more obvious. 15% Z20 skin cream (O/W) was applied to 37 cases of randomly collected acne dermatitis patients, twice a day and last for three weeks. The results showed that Z20 had good therapeutic effects for acne and dermatitis.

**Applications:**
- Compatible with a wide range of cosmetic ingredients;
- Pale yellow and transparent liquid;
- Anti-inflammatory and acne removing product;
- Anti-aging product;
- Recommend: 5%-15%.
Yeast Mannoprotein M60

———Expert in skin moisturizing

Yeast Mannoprotein M60, a natural essence present in yeast cells, can provide skin with adequate moisture. M60 still contains amino acids and peptides, which can penetrate into the skin and replenish skin necessary nutrients, deeply nourish the skin cells.

- INCI: Yeast Polysaccharides
- Natural raw material comes from yeast;
- Macromolecules, quickly replenish skin moisture;
- Provide skin necessary nutrients: amino acids, peptides etc.;
- Expert in skin moisturizing;
Test 1  Hygroscopicity of M60

**Effect:** In the condition of constant temperature and humidity, hygroscopic rate of M60 can reach 30%, the same as HA. The special molecular structure of M60 make it has the ability of moisture-retention, achieving long-lasting moisturizing effect.

**Test 2  Moisture-retention of M60**

**Effect:** M60 can lockup skin moisture effectively, long-lastingly and durably keep the skin moist.

**Applications:**
- Moisturizing cream, lotion;
- Skin refinishing cosmetics;
- Recommended usage: 0.05%-0.5%

Angel Yeast Co., Ltd