Angel Yeast Cosmetic Ingredients

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Carboxymethyl yeast beta-glucan (CMG) C90

---Skin repairing expert

Yeast beta-glucan is a polysaccharide exists in the cell wall of yeast, which can fortify the immunity of human beings. CMG is partly carboxymethylated yeast beta-glucan, which is water soluble. CMG has the same functions as yeast beta-glucan when used in cosmetics, 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 effectiveness, defend against external threats such as sun, smoke, environmental assaults, and mitigate the effects of stress, all of these lead to 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 switch them on.

- **Applications**
  - Anti-aging products;
  - Anti-oxidation products;
  - Sun-care products;
  - Moisturizing and repairing products;
  - Recommend dosage: 5%-10%.

- **CMG---**
  - INCI Sodium Carboxymethyl beta-glucan;
  - Natural, come from yeast;
  - Soluble in water, 1% solution;
  - Repairing enhancing;
  - Skin repairing expert.

Angel Yeast Co., Ltd
Test 1    C90 used for sunburn repairing

UV-rays in the sunlight can cause skin erythema and damage, accelerate skin aging. CMG can obviously accelerate the skin repairing from the sunburn, decrease the skin erythema, damage and aging.

Test 2    C90 used for anti-aging

The renewal rate of the stratum corneum was determined at the beginning of the experiments. 0.4% CMG in emulsion enhanced renewal rate of the stratum corneum more than 30% compared with untreated skin.
Test 3  C90 used for moisturizing

The formulations of CMG at different concentrations (0.04-0.4%) of hydrogel and o/w emulsions 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 with the untreated skin. The protective effect against the skin humidity reduction depends on the CMG concentration.

Test 3  C90 used for anti-oxidation

Skins of the volunteers were pretreated for 5 days with o/w emulsions containing different concentrations of CMG. Then the skins was exposed to UV-A. Squalene hydroperoxides concentrations from skin lipid extractions were measured. All formulations with CMG can obviously decrease the concentrations of Squalene hydroperoxides in skin.
Yeast Extract E100

— Skin anti-aging expert

Yeast extract, extracted from yeast cells, contains plenty of amino acids, peptides and nucleic acids. On dry base, yeast extract contains at least 30% amino acids, 15% nucleic acids and 30% peptides, all of which are the main ingredients of the NMF (natural moisture factors). Amino acids and nucleic acids can be easily absorbed by skin and nourish the skin cells. Consequently, yeast extract can promote collagen synthesis, acts as an anti-inflammatory, also soothe, moisturize and revitalize the skin.

Yeast extract can be used in a variety of cosmetic products, such as anti-aging, moisturizing and revitalizing products, including under-eye creams and facial lotions.
Test 1  Scope of the Mw of E100

<table>
<thead>
<tr>
<th>Scope of the Mw</th>
<th>Content,%</th>
<th>Mw</th>
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<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>
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<td>1321</td>
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<td>4 1000~500</td>
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<td>5 500~180</td>
<td>47.35</td>
<td>251</td>
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<td>6 &lt;180</td>
<td>33.17</td>
<td>146</td>
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</table>

The Mw of E100 was determined using volume exclusion chromatography. The results showed that the main components of the E100 were amino acids, nucleic acids and peptides. The Mw of E100 is small so that it can be easily absorbed by skin cells.

Test 2  E100 used for anti-aging

32 volunteers aged from 35 to 55 took part in the tests. The formulation of E100 at a concentration of 0.5% o/w emulsion was used as a treatment on the volunteers' forearms for 4 weeks. Every week the skin was tested to determine the roughness and the skin smoothness depth. The results showed formulation with E100 was good at anti-aging.
Test 3    E100 used for moisturizing

30 volunteers took part in the test. After using the o/w emulsion, the transepidermal water loss (TEWL) was determined by Tewameter TM300. The results indicated that E100 can complement skin moisture continuously.

Applications:
- Anti-aging products;
- Moisturizing products;
- Anti-oxidation products;
- Recommended dosage: 5%-10%.
Yeast Nucleotides N80

-- Anti-wrinkle expert

During the growth of the cells, the metabolism is slowing down due to the nucleic acids deficiency, which leads to the acceleration of skin aging. Supplying with nucleic acids 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, nucleic acids get the reputation of “revitalizing agent of the skin cells”.

Yeast anti-wrinkle essence N80 is obtained from yeast nucleic acids by biological enzymolysis. The active ingredients in N80 can be absorbed quickly by the skin and supply the skin nucleic acids, it can anti-wrinkle deeply in the skin and revitalize the skin quickly.

INCI:
- Adenosine, guanosine, thymidine, uridine;
- Natural raw material from specific yeast strain;
- Biological enzymolysis; small molecule; absorbed rapidly;
- Revitalizing, repairing and anti-aging;
- Anti-wrinkle expert.
Test 1    Anti-wrinkle——Skin elasticity improvement

Eye skins of 32 objects 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.

Test 2    Anti-wrinkle——Eye wrinkle repairment

Eye skins of 32 objects 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. 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.
### Test 3 Safety——Patch test

<table>
<thead>
<tr>
<th>Samples</th>
<th>Blank</th>
<th>N80 original solution</th>
<th>Liquid without N80</th>
<th>5% N80</th>
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<tbody>
<tr>
<td></td>
<td>0 0 0 0</td>
<td>30 0 0 0</td>
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<td>30 0 0 0</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Blank: 30 0 0 0
- N80 original solution: 30 0 0 0
- Liquid without N80: 30 0 0 0
- 5% N80: 30 0 0 0

N80 is a natural raw material, there is no allergic reactions during the use of N80.

### Applications:
- Compatible with a wide range of cosmetic ingredients;
- Pale yellow and transparent liquid;
- Eye cream products;
- Anti-wrinkle products;
- Recommended dosage: 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 good at 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 were lower than the level of healthy people.

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 and anti-aging.

INCI[
Saccharomyces/Zinc ferment;
Supply skin zinc quickly;
4500ppm chelated and organic zinc;
Rich in skin-necessary nutrition: amino acids, peptides, nucleic acids, etc;
Acne removing expert.

[Z20 diagram]

Amino acids; peptides
Skin cells activation
Whitening

Zinc
Antioxidant; Free radicals removing
Anti-aging

Skin zinc supplying
Anti-inflammatory; Acne removing
Test:       Z20 treatment for acne, dermatitis

<table>
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<tr>
<th></th>
<th>Number of objects</th>
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<th>Effective</th>
<th>Improved</th>
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<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>
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<td>2</td>
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</table>

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 o/w cream 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 products;
- Anti-aging products;
- Recommended dosage: 5%-15%.