1. INCI Ingredients List.
Water, Glycerin, Trehalose, Opuntia Ficus-Indica Stem Extract, Tapioca Starch.

2. Product Information.
IrriBate is a functional plant extract with an antagonistic effect against skin irritations. The inspiration for this product came from the TCM theory of “cure before disease” and the principle of “antagonism” in the combination of traditional Chinese medical herbs. It aims at acting against the common allergens found in cosmetic formulations.
IrriBate has the following characteristics:
1. can effectively antagonize the stimulation effect of exogenous stimulation;
2. can effectively inhibit the stimulation of surfactants, preservatives, fragrances and flavours;
3. can effectively protect the cell membrane and play a protective role for the skin.

3. Symptom [症].
Cosmetics can bring health and beauty to the skin, but there are some harmful substances in the formulation of the cosmetic that cause skin irritation and allergy. Statistical test results showed that different cosmetics preparations showed different extends of acute skin irritation.

More than 130 kinds of common allergens in cosmetic contact dermatitis were listed. According to their functions, they can be divided into three categories: preservatives, flavours or fragrances and surfactants. Among them, preservatives are the most common components that cause cosmetic contact dermatitis.

4. Theory [理].
TCM has always emphasized on prevention, and the idea of prevention can be found in the ancient medical literature, the "Inner Canon of Huangdi" 《黃帝內經》as “cure before disease”.

Our inspiration came from one of the principles of compatibility of TCM herbs – namely the Antagonistic effect of herbs. TCM is very particular about the use of herbs, such as matching with a specific desired interaction among the herbs. After years of practice by the TCM herbal practitioners, the synergy and the antagonism between the drugs have accumulated abundant knowledge and experiences. They can be summarized with six aspects: mutual need; mutual assist; mutual restrain; mutual deoxoication; mutual inhibition; and contrary. Matching of two herbs with different natures will end up with varying results.

We are inspired to construct a safety-guaranteed system for cosmetic formulations. We chose the most appropriate TCM herbs to antagonize the stimulants found in raw materials. Combine to other suitable TCM herbs to strengthen the protection of skin. Eventually, we can help to prevent or reduce the irritation and sensitization caused by stimulants found in cosmetic formulations.

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<th>Treatment</th>
<th>Prescription</th>
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<td>The antagonistic approach of TCM was adopted to prevent the generation of the stimulations or irritations to the skin.</td>
<td>Chief&lt;br&gt;Cartas&lt;br&gt;Opuntia Ficus-Indica</td>
<td>Trehalose is widely found in many animals, plants and microorganisms in nature.&lt;br&gt;Opuntia Ficus-Indica</td>
<td>Trehalose can form a unique protective membrane on the cell surface, effectively protect the invariance and hydration of protein molecules, and thus maintain the life process and biological characteristics of life.&lt;br&gt;Opuntia Ficus-Indica has excellent film-forming property, can quickly form a protective film on the surface of the cell.</td>
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<tr>
<td>Strengthens the protection of skin from damages due to exogenous irritation and cooperates with the chief herb to reduce the irritations to skin.</td>
<td>Deputy&lt;br&gt;Trehalose&lt;br&gt;Tapioca Starch</td>
<td>Trehalose and Tapioca Starch</td>
<td>Tapioca Starch has excellent film-forming property, can quickly form a protective film on the surface of the cell.</td>
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5. Efficacy.

5.1 Inhibit the stimulation caused by surfactant.

![Graph showing hemolysis of red blood cells induced by Sodium Dodecyl Sulphate and Sodium Methyl Cocoyl Taurate](image)

Fig. 1 Hemolysis of red blood cells induced by Sodium Dodecyl Sulphate and Sodium Methyl Cocoyl Taurate.

![Graph showing inhibitory effect of IrriBat on the stimulation of Sodium Dodecyl Sulphate](image)

Fig. 2 Inhibitory effect of IrriBat on the stimulation of Sodium Dodecyl Sulphate.

![Graph showing inhibitory effect of IrriBat on the stimulation of Sodium Methyl Cocoyl Taurate](image)

Fig. 3 Inhibitory effect of IrriBat on the stimulation of Sodium Methyl Cocoyl Taurate.

![Graph showing inhibitory effect of IrriBat on SDS induced stimulation](image)

Fig. 4 Inhibitory effect of IrriBat on SDS induced stimulation.

5.2 Inhibit the stimulation caused by preservative.

![Graph showing hemolysis of red blood cells induced by Methylicaoben and Kathon](image)

Fig. 5 Hemolysis of red blood cells induced by Methylicaoben and Kathon.

![Graph showing inhibitory effect of IrriBat on Methylicaoben stimulation](image)

Fig. 6 Inhibitory effect of IrriBat on Methylicaoben stimulation.

![Graph showing inhibitory effect of IrriBat on Kathon stimulation](image)

Fig. 7 Inhibitory effect of IrriBat on Kathon stimulation.

5.3 Inhibit the stimulation of fragrances.

![Graph showing hemolysis of red blood cells induced by Lemon Oil and Eugenol](image)

Fig. 8 Hemolysis of red blood cells induced by Lemon Oil and Eugenol.

![Graph showing inhibitory effect of IrriBat on Lemon Oil stimulation](image)

Fig. 9 Inhibitory effect of IrriBat on Lemon Oil stimulation.

![Graph showing inhibitory effect of IrriBat on Eugenol stimulation](image)

Fig. 10 Inhibitory effect of IrriBat on Eugenol stimulation.

5.4 Protect cell membrane.

![Image showing protective effect of IrriBat on cell membrane](image)

Fig. 11 Protective effect of IrriBat on cell membrane.

5.5 Protect DNA from damage.

![Images showing protective effect of IrriBat against DNA damage](image)

Fig. 12 Protective effect of IrriBat against DNA damage.

5.6 Antagonize exogenous irritation (in vivo).

![Graph showing irritation scores of test products](image)

Fig. 13 Irritation scores of test products.

![Images showing the extent of irritation showed in the test area of the volunteers](image)

Fig. 14 The extent of irritation showed in the test area of the volunteers.

Note: Detail information is available from the respective product manuals. Disclaimer: For all products produced by Nutri-Woods BioTech (Beijing) Co. Ltd., is printed on the SDS and product manual of the particular products.

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