Multi-Targets Anti-wrinkling

SpecAWK™ Plus

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SpecAWK® Plus

China Personal & Cosmetic Technology Innovation Award 2016
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Multi-targets concept
Why TCM ---- Nature and safety
What TCM ---- Ten species
Efficacy
Clinical test in SGS
Volunteers’ evaluation
Summary
Generally, this concept is used for treatment of various diseases in pharmaceutical study. One living cell needs various materials, and there are many channels for the behavior. It could be understood using the following cell model illustrated below.

- Water exchange channel
- Channel of ions exchange, $\text{Na}^+$, $\text{K}^+$, ...
- Channel of sugar entering
- Channel of amino acids movement
- Channel for e.g. uric acid, excretion
- Channel for other organic compounds, like medicines, metabolism
In each channel, there are different positions for various molecules docking with them. For example, in a channel as illustrated below, molecules M1 may enter into it and dock with the targets inside the channel. By docking to the receptors, the channel may lose its function. This logically, it will affect the living cell.

If this channel is the most important one, the strong docking state of molecules M1 with it absolutely may lead to cell death.
If the docking of M1 to the target is not strong enough, this molecule cannot kill the cell via this channel.

However, this channel may have some different important targets for molecules, like M2 and M3 docking. In this way, three molecules M1 to M3 would form more powerful docking state, and lead to the cell death.

Thus, multi-targets complex (ingredients) may have higher efficiency than single target ingredient.
Generally, single compound may efficiently be used to treat some illnesses.

For example, penicillin, is a widely used antibiotics, and it save thousands and hundreds of people’s lives.
Alexander Fleming discovered Penicillin in 1928. **In 1940,** Howward Walter Florey in Australia and Ernst Boris Chain in England successfully isolated penicillin. **In 1943,** it was used in clinic and in War II. They three obtained Nobel Prize late.
The human body now has built up a tolerance to it. Single penicillin medicine cannot kill the corresponding bacteria as it used before.

Why?

Single target leads to the bacteria can in evolution produce one enzyme to decompose the four-membered ring structure of penicillin (blue-circle structure).
Therefore, in modern pharmaceutical study, some medicines contain two or two more ingredients, and exhibited the characteristics of multi-targets.

- for example, the medicine for HIV treatment---Atripla, antasthmatic agent ---Advair and so on.
Clearly, based on the multi-drug combinations, it is, logically, possible to guess that two more drug combinations form the functional group of compounds to achieve the medicinal functions.

The groups of compounds widely distribute in natural species of TCM. This is the fundamental basis of the TCM used to treat illnesses in China for thousands of years.

For example, there is no any report to show one bacterium has built up a tolerance to radix isatidis (isatis root), which has widely used for treatment of fever, and the corresponding illnesses until now.
Namely, TCM in many cases can provide many structurally similar ingredients (compounds) and structural diversity, they should be the potential ingredients used for treatment of illnesses via different targets.

Indeed, the cells of skin and the cells of different organs have the very similar environments in our body. To protect the skin cell from various damages, or to nourish them (including others) also need different compound combinations.

TCM could provide many molecular clusters (different compound combinations), and they can provide most compounds that our skin cell need in protections from damaged or affording nourishment.
SpecAWK™ Plus is a green and natural plant essence, prepared from 10 traditional Chinese edible herbs: Panax Ginseng, Poria Cocos, Panax Notoginseng, Gastrodia Elata, Glycyrrhiza Uralensis, Carthamus Tinctorius, Salvia Miltiorrhiz, Paeonia suffruticosa, Scutellaria Baicalensis, Lycium by using QSAR and other modern technology.

• **Benefits**: Anti-wrinkle, anti-aging, Lightening & whitening, anti-oxidation, anti inflammatory, moisturizing effects.
10 Herbs

**Panax Ginseng**
- Improving blood circulation
- Anti-aging
- Whitening

**Poria cocos**
- Promoting blood circulation
- Moist skin
- Improving skin elasticity

**Paeonia Suffruticosa Root Bark**
- Whitening
- Anti-wrinkle
- Anti-spot
- Moistening skin

**Glycyrrhiza uralensis**
- Improving skin
- Anti-inflammation

**Panax notoginseng**
- Improving blood circulation
- Anti-freckle

**Salvia Miltiorrhiza**
- Anti-inflammation
- Anti-aging
- Whitening
Gastrodia data

Anti-wrinkle

Carthhaus Tinctorius Flower

Improving blood circulation, anti-spot

Scutellaria baicalensis Georgi

Whitening, anti-aging, anti-spot

Lycium Chinese

Improving SOD content, Anti-aging, Whitening

Main ingredients: Plant polypeptide, Plant polyphenol, Glycosides and Flavonoids
Multi-Functions

Lightening & Whitening
Melanin & Tyrosinase inhibitor

Firmness and Elasticity
Stimulating collagen and elastin synthesis

Smooth lines and wrinkle & Anti-aging
Promoting collagen synthesis

Anti-inflammation
More effective than quercetin against inflammation induced by IL-6

Anti-oxidation
Scavenging free radical

Moisturizing

Multi-Targets 6 in 1 for healthy skin

SpecAWK® Plus
10 Chinese Herbs extract essence,
Tests: · In vitro · Clinical
4.1 Promoting collagen synthesis

Result: Collagen secretion rate increased linearly with increasing concentration, the lower concentration of 80.5 ug/mL can promote collagen secretion increase of 50%, show it has good anti-wrinkle effect.

4.2 DMPPH free radical scavenging

Experiments showed that SpecAWK R Plus has good effect on free radical scavenging at a low concentration of 2 mg/mL, its anti-oxidation rate reaches to 95% or more, this is better than the anti-oxidation effect of 100 uM VE.
Efficacy (In-Vitro tests)

4.3 inhibiting melanin synthesis

Result: Melanin Inhibition rate is 13% at the 20 ug/mL, 17.94% at the 200ug/mL, show that inhibition rate enhanced with concentration increase.

4.4 Inhibition of tyrosinase activity

The smaller the EC50, the stronger the inhibition of tyrosinase. Result: Inhibition of tyrosinase; Vc > SpecAWK® Plus > Arbutin > VCE, SpecAWK® Plus tyrosinase inhibition is 2.2 times of arbutin, 16 times of VCE (Ethyl ascorbic acid).
## Efficacy (In-Vitro tests)

### 4.5 Anti-Inflammation

**Certificate of Analysis**

<table>
<thead>
<tr>
<th>Description</th>
<th>BL ID</th>
<th>Analysis</th>
<th>Inducer/Stressor</th>
<th>Result</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porta Cocos Extract, Powder, 121211</td>
<td>13-50029</td>
<td>NFκB</td>
<td>IL-6</td>
<td>2447</td>
<td>pmole QE/gram</td>
</tr>
</tbody>
</table>

NFκB is Cellular Anti-inflammatory Assay.

The NFκB result is expressed as micromole quercetin equivalency (pmole QE) per gram of tested material.

Method Reference: Cellular Anti-Inflammatory Assay (NFκB) determines the anti-inflammatory potential of a given material in human cell culture. NFκB (Nuclear Factor kappa B), a protein complex that is involved in cellular responses to stimuli, is used as an inflammation biomarker. Specific cytokines are used as stressors. Quercetin, a potent anti-inflammatory compound, is used as a comparison standard, and the results are expressed as micromole quercetin equivalency (QE).

**Conclusion:**

The tested sample appeared more effective in anti-inflammation than quercetin, which is recognized as a potential effective substance against inflammation (especially induced by IL-6).

Signed for and on behalf of Brunswick Laboratories

Released on behalf of Brunswick Laboratories by
Jin Ji, Ph.D.,
Chief Technology Officer

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**IMPROVING HEALTH THROUGH SCIENCE**

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4.2 Efficacy(Clinical test in SGS)

Test Product ............: 5% SpecAWK Plus
Subjects .................: Number of individuals: 20 female
Age range ............: >35 years old
Test site ...............: Crow’s feet
Application Method.....: Twice a day, morning and night
Test Period ............: 8 weeks

The test process is:
After subjects cleaned their face, technician marked two areas on right and left Crow’s feet as the test sites. The subjects rested for 15 minutes in the laboratory with temperature of 21±1°C and relative humidity of 50±5%. The skin parameter of the Crow’s feet were determined. Then take photos with digital camera.

Data analysis: Data was analyzed with SPSS 19.0, the differences between before and after the test is contrasted by T-Test and the significance level is p<0.05.
Results

Evaluate the changes of the skin elasticity

Method: The skin elasticity is determined by Cutometer MPA580, and F3/F4 is closer to 1, the skin elasticity is better.

Result: Comparing with the baseline, the value of F3/F4 was closer to 1 after applying the product for 8 weeks with a significant difference. After applying the product for 8 weeks with a significant difference, the elasticity of skin improved obviously 15% at 4 weeks, 30% at 8 weeks.
Evaluate the changes of the skin firmness

Method: The skin firmness is determined by Cutometer MPA580, and F4 is lower, the skin firmness is better.

Result: Comparing with the baseline, the value of F4 was reduced significantly after applying the product for 8 weeks, the firmness of skin improved obviously 25%.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>4 weeks after using</th>
<th>8 weeks after using</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean F4</td>
<td>8.92</td>
<td>8.03</td>
<td>6.65</td>
</tr>
</tbody>
</table>

Fig. 2-1 Skin firmness
Evaluate the changes of the skin roughness.

Skin roughness parameter SEr is determined by Visioscan VC98, and SEr is lower, the skin roughness is lower.

Result: The SEr readings lower means the skin roughness (SEr) is improved 11% at 4 weeks.
Evaluate the changes of the skin smoothness

Method: Skin smoothness parameter SEsm is determined by Visioscan VC98, and SEsm is lower, the skin is smoother.

Result: The SEsm readings lower means the skin smoothness is improved.
Evaluate the changes of the skin wrinkle

Method: Skin wrinkle parameter Sew is determined by Visioscan VC98, and SEw is lower, the skin has less wrinkles.

Result: The SEw readings lower means the skin wrinkle is improved.
Photos of the subjects

Fig.1 Photo of the right face at D0  
Fig.2 Photo of the right face at D28  
Fig.3 Photo of the right face at D56
Technical index
Appearance: Brown sticky liquid
Odor: Characterics

Using suggestion
Recommended dosage: 0.5-5%.
Solubility: Freely soluble in polyols (such as 1,3butanediol, propylene glycol), fat etc.
Formulation suggestion:
SpecAWK™ Plus can be added in water phase or oil phase, it is not sensitive to temperature, it can be added before or after emulsion.
Application: Anti-wrinkle and anti-aging products, Lighting & Whitening cream, lotion, and mask.

Regulation: China and European regulated, there is no restriction.
The Repair Wrinkle Gel Cream color with different SpecAwk Plus dosage

SpecAWK® Plus:  Control  
Color:White

SpecAWK® Plus:  1%  
Color:Off-White

SpecAWK® Plus:  5%  
slight yellow
# Example formulation (Repair Wrinkle Gel Cream 5% SpecAWK® Plus)

<table>
<thead>
<tr>
<th>Class</th>
<th>No.</th>
<th>Trade Name</th>
<th>Dosage (%)</th>
<th>INCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>A phase</td>
<td>1</td>
<td>SBK017(EMT-10)</td>
<td>1.2</td>
<td>Hydroxyethylacrylate / Sodium Acryloyldimethyl Taurate Copolymer</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>CC</td>
<td>2.0</td>
<td>Carbonic acid, dioctylester</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>EH</td>
<td>2.0</td>
<td>Ethylhexyl Ethylhexanoate</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>CDM3526</td>
<td>0.2</td>
<td>C26-28 Alkyl Dimethicone</td>
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<tr>
<td></td>
<td>5</td>
<td>Vitamin E Acetate</td>
<td>0.2</td>
<td>Vitamin E Acetate</td>
</tr>
<tr>
<td>Bphase</td>
<td>1</td>
<td>Glycerin</td>
<td>8.0</td>
<td>Glycerin</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>HYJ-200</td>
<td>0.18</td>
<td>Xanthan Gum</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>SBK024 (U21)</td>
<td>0.15</td>
<td>CARBOMER</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Allantion</td>
<td>0.1</td>
<td>Allantion</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2NA</td>
<td>0.05</td>
<td>Disodiumedta</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>H-200</td>
<td>6.0</td>
<td>Glycerin (and) Glyceryl Polyacrylate</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>H$_2$O</td>
<td>TO100</td>
<td>deionized water</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Poria (1%)</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>HA (1%)</td>
<td>5.0</td>
<td>Sodium hyaluronate</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>NMF-50</td>
<td>2.0</td>
<td>betaine</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>SpecAWK™ Plus</td>
<td>5%</td>
<td>-</td>
</tr>
<tr>
<td>Cphase</td>
<td>1</td>
<td>TEA</td>
<td>0.13</td>
<td>Triethanol amine</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NK2</td>
<td>0.1</td>
<td>Dipotassium Glycyrrhizinate</td>
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<tr>
<td>Dphase</td>
<td>2</td>
<td>PrzvFree® CCP</td>
<td>0.8</td>
<td>Caprylyl Glycol, Caprylylhydroxamic Acid, 1,3-propanediol</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Fragance</td>
<td>0.1</td>
<td>Fragance</td>
</tr>
</tbody>
</table>
Procedure:
1. A phase (oil phase): Before putting the liquid oil in a small barrel, stay some 2 reserved, then, add 1 to it with stirring.

B phase (water phase): put 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 into emulsifying pot, heat with stirring to $83 \pm 2 \, ^{\circ}C$ to make them dissolved completely, held for 30 minutes to spare. Put A phase into B phase, avoid stirring paddle. Immediately high-speed homogenizing, keep 8 minutes.

2. Cool them to $65\pm2^{\circ}C$, then put C phase into emulsifying pot, 1 was dissolved with a small amount of water in advance. Finally, put 1 into the pot. Thermal insulation for 20 minutes. Continue to cool.

3. Cool them to $45\pm2^{\circ}C$, increase stirring speed, put D phase into them; The feed finished, immediately homogenizing them for three minutes, then, keep the same temperature in 30 minutes, cool $33\pm2^{\circ}C$ to end.

Notice:
Defect pH before putting D phase into pot.
Keep the pH in 5~7.
Thank you!

If you need sample and technical data, please contact us without hesitation.
Email: sc@specchemind.com