EFFECT OF ORAL GOLD TRI-E SUPPLEMENTATION ON BIOPHYSICAL SKIN PARAMETERS FOR SIME DARBY RESEARCH SDN BHD BY TOMMY JULIANTO
INTRODUCTION

- Biophysical skin parameters are indicators of age related structural and functional changes in skin tissues.
- They are usually used to describe the efficiency of skin care products either it has been taken by oral or topically applied.
- In this study, a single blind placebo controlled study on healthy adults volunteer was conducted to evaluate the effect of tocotrienols (Tri.E) by oral supplementation on human biophysical skin parameters.
OBJECTIVES:

- To determine the effect of individual oral Tri.E supplementation on biophysical skin parameters
MATERIALS AND METHODS

36 healthy non-pregnant females between 18-55 years of age were participated as volunteers for this study.

All volunteers were thoroughly informed of the purpose and the course of study and they could withdraw at any time without give any reason.

Criteria for eligibility were :> 18 years old, clinically healthy, self-assessed dry, rough skin and not under any medication of skin disorder.
MATERIALS AND METHODS

- The subjects were randomly allocated to either treatment group A or treatment B (20 females volunteers for each group).
- Measurement were taken before treatment (day 0) and after treatment day at 30, 60 and 90. Before the measurements were taken, the subjects were adapted for 30 minute to a room temperature of 25°C. The treatment comprised 300 mg capsules totaling for active group 50mg of Tocotrienols.
- The subjects were instructed to take 1 capsule for twice daily in the morning and evening during meals.
- Volunteers diet guideline provided for each volunteers before the study
PRODUCTS STUDIED

- Soft gelatin capsules size of 300 mg containing palm vitamin E extract equivalent to 50mg of tocotrienols (Tri.E) and soy bean oil in soft gelatin capsules were used for treatment and placebo groups, respectively.
MATERIALS AND METHODS

The following skin parameters were measured:

- roughness, smoothness; wrinkle,
- humidity,
- Trans epidermal water loss (TEWL),
- firmness, elasticity and fatigue resistance.

Non-invasive in vivo skin tests
RESULT

Right Roughness

<table>
<thead>
<tr>
<th>Time measurement</th>
<th>Placebo</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>-45</td>
<td>-45</td>
</tr>
<tr>
<td>2 month</td>
<td>-40</td>
<td>-40</td>
</tr>
<tr>
<td>3 month</td>
<td>-35</td>
<td>-30</td>
</tr>
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</table>

Left Roughness

<table>
<thead>
<tr>
<th>Time measurement</th>
<th>Placebo</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>-5</td>
<td>-5</td>
</tr>
<tr>
<td>2 month</td>
<td>-10</td>
<td>-10</td>
</tr>
<tr>
<td>3 month</td>
<td>-15</td>
<td>-15</td>
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</tbody>
</table>
RESULT

Right

Smoothness

<table>
<thead>
<tr>
<th></th>
<th>1 month</th>
<th>2 month</th>
<th>3 month</th>
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</thead>
<tbody>
<tr>
<td>Placebo</td>
<td><img src="image" alt="Placebo Graph" /></td>
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<tr>
<td>Treatment</td>
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Time measurement

Change relative to pretreatment value (%)

Left

Smoothness

<table>
<thead>
<tr>
<th></th>
<th>1 month</th>
<th>2 month</th>
<th>3 month</th>
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<tr>
<td>Treatment</td>
<td><img src="image" alt="Treatment Graph" /></td>
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</tbody>
</table>

Time measurement

Change relative to pretreatment value (%)

Change relative to pretreatment value (%)

Placebo

Treatment
RESULT

Right

Wrinkle

Change relative to pretreatment value (%)

Time measurement

1 month 2 month 3 month

-25 -20 -15 -10 -5 0 5 10

Placebo Treatment

Left

Wrinkle

Change relative to pretreatment value (%)

Time measurement

1 month 2 month 3 month

-35 -30 -25 -20 -15 -10 -5 0 5

Placebo Treatment
RESULT

Right

TEWL

Time measurement

Left

TEWL

Time measurement
RESULT

Right

Firmness

<table>
<thead>
<tr>
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<th>Placebo</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>3 month</td>
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Left

Firmness

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<th>Treatment</th>
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<tbody>
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<td>2 month</td>
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<tr>
<td>3 month</td>
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</tbody>
</table>
RESULT

Right

Elasticity

Time measurement

Change relative to pretreatment value (%)

1 month 2 month 3 month

Placebo
Treatment

Left

Elasticity

Time measurement

Change relative to pretreatment value (%)

1 month 2 month 3 month

Placebo
Treatment
The results of the study revealed that volunteers have after 3 month oral supplement of Tri-E:

Significant improvement of all skin biophysical parameters after three month study.

Right arm: roughness, 42.8%; smoothness, 38.0%; wrinkle, 20.4%; humidity, 59.0% TEWL, 50.7%; fatigue resistance, 26.1%, firmness: 38.2%; and elasticity 68.6%.

Left arm: roughness, 40.1% ; smoothness, 48.6% ; wrinkle, 28.5% ; humidity, 59.6% ; TEWL, 52.9 % ; fatigue resistance, 25.1% ; firmness, 30.2% and elasticity 46.3%.
Volunteers Feedback after the completion of study

- 80% of the volunteers agreed that Tri.E oral supplement gives positive results and will continue their consumption of the product.
- Reduce rashes and itchiness.
- Normalize the periodic cycles.
SUGGESTION TO SIME DARBY RESEARCH SDN BHD

- Long term study such as 6-12 month is required to evaluate optimum effect of tocotrienols on the human skin.
- Study on depigmentation effect and clearing of skin scars.
- Study on the effect of internal and external supplementation of tocotrienols on the ageing skin.
- Study on the maximum effect of tocotrienols combination with another bioactive on human skin.
REFERENCES


