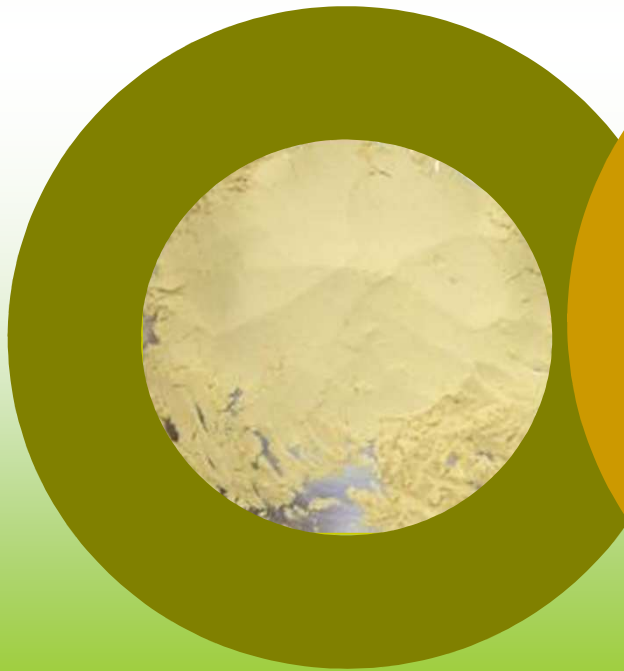


Soapnut Extract Powder

from one of world largest organic farms



1. What is Soapnut ?

“Soapnut Extract Powder” is made from Soapnut cultivated in one of the world largest organic farms in South India certified by India and EU



<General information of Soapnut>

- Soapnut = Ritha / *Sapindus Trifoliatus*
- Harvest season : around May
- Characteristic sweet smell
- Containing a lot of saponin



Producer Product(s) :

Sl.No.	Product(s)	Variety	Organic Status	Crop Type	Area(Ha)	Est. Quantity (In MT.)
25	Sapindus trifoliatus (12119099)	Local	Organic	Main	242.810000	120.000000

INCI

- **SAPINDUS TRIFOLIATUS FRUIT EXTRACT**
Japanese Cosmetic labeling name
- **サピンツストリホリアツス果実エキス**
Chinese Cosmetic name 2007 and 2010
- **三叶无患子(SAPINDUS TRIFOLIATUS)果提取物**

1. What is Soapnut ?

Intended end-usage of Soapnut



Used to use for cleaning jewels



Face soap
Bath soap
Body soap



Bar soap, Dish soap and Clean up soap



Popular eco-friendly detergent in Europe, America and others in daily use



Laundry soap

1. What is Soapnut ?

i.e. : Organic products in Europe,
environmentally-advanced countries



from Soapnut



<Key words in the organic products>

- Organic grown plant is used
- Surfactant from plant origin
- Organochemical free, petroleum-based surfactant free
- Eco-friendly, Love for nature, Consideration for wild life
- Economic organic item, rinse aid product, Good detergency, Good smell

2. Physical property

General information of “Soapnut Extract Powder”



Fruit of Soapnut

<Feature points>

- 100% pure extract powder
- Good fruity smell
- Foaming well in solution

Extraction
Powdered



“Soapnut Extract Powder”



1% 5%
water solution











Creamy foam
(water solution foamed by air

pomp)

2. Physical property

Maximum Soapnut Extract Powder solubility test in 50%BG sol.

0.5%	1%	2%	5%	10%	20%	40%	50%
							

○ = Good, × = Precipitated

--> 5 micro meter filtration at formulation prevents precipitate

5% Soapnut Extract Powder solubility test into various solution

50% Ethanol sol.	50% BG sol.	100% Water
○	○	×

○ = Good, × = Precipitated

--> Precipitate is dissoluble with general surfactants (next page)

2. Physical property

1% and 5% Soapnut Extract Powder solubility in water at pH									
pH	3	4	5	6	7	8	9	10	11
Soapnut Ext. Powder 1%	×	×	×	×	○	○	○	○	○
Soapnut Ext. Powder 5%	×	×	×	×	×	×	○	○	○



5% Soapnut Extract Powder solubility in water with general surfactant				
Surfactant C Sodium Cocoyl Glutamate 0.3%	1 % *	1 % *	1 % *	1 % *
Surfactant D Cocamidopropyl Brtaine 0.3%	5%	5%	5%	5%
Surfactant A Sodium Laureth Sulfate 0.27%	1%	1%	1%	1%
Surfactant B Ptassium Cocoyl Glycinate 0.3%	15%	15%	5%	5%

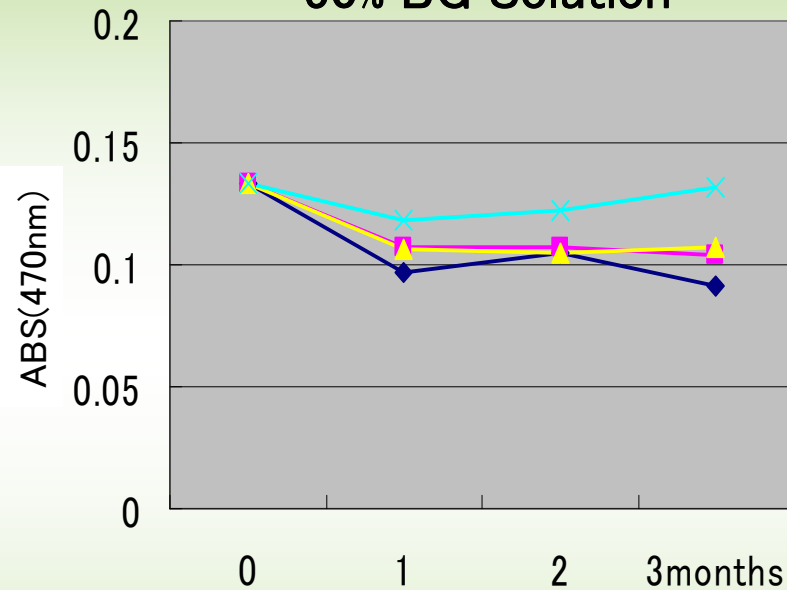
○ = Good
× = Precipitated

Good (confirmed for 24 hours)
*Note : Surfactant C precipitates at low temperature (4 degree C) by itself.

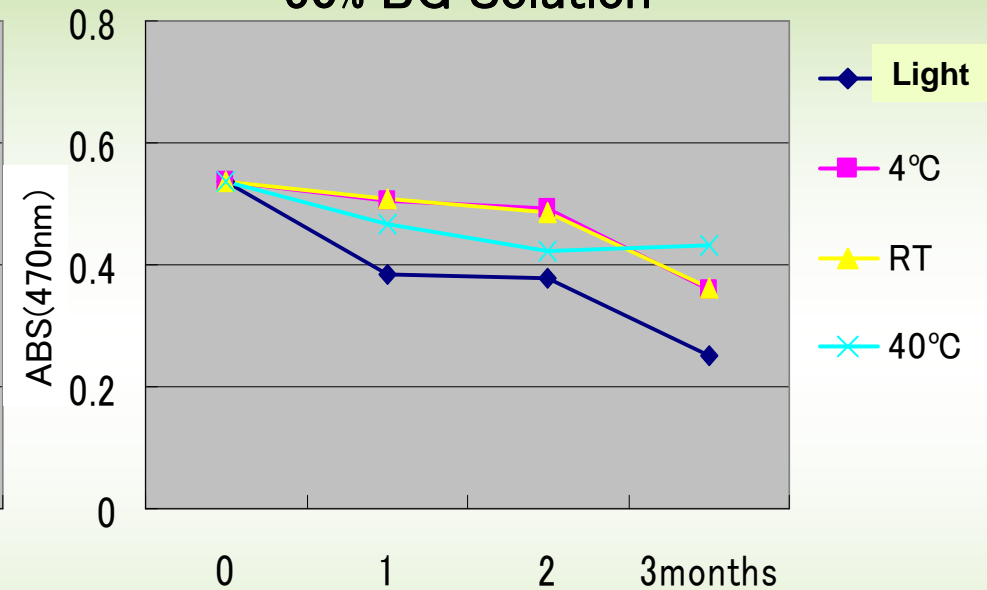
2. Physical property

Long term stability (3 months)

1% solid in
50% BG Solution



5% solid in
50% BG Solution



Tend to be discolored at all condition
Very little white precipitate in 3 months

→ 5 micro meter filtration at formulation prevents the precipitate

3. Foaming

Foaming (Video)



Example : Foam by Soapnut Extract Powder 5% solution

3. Foaming

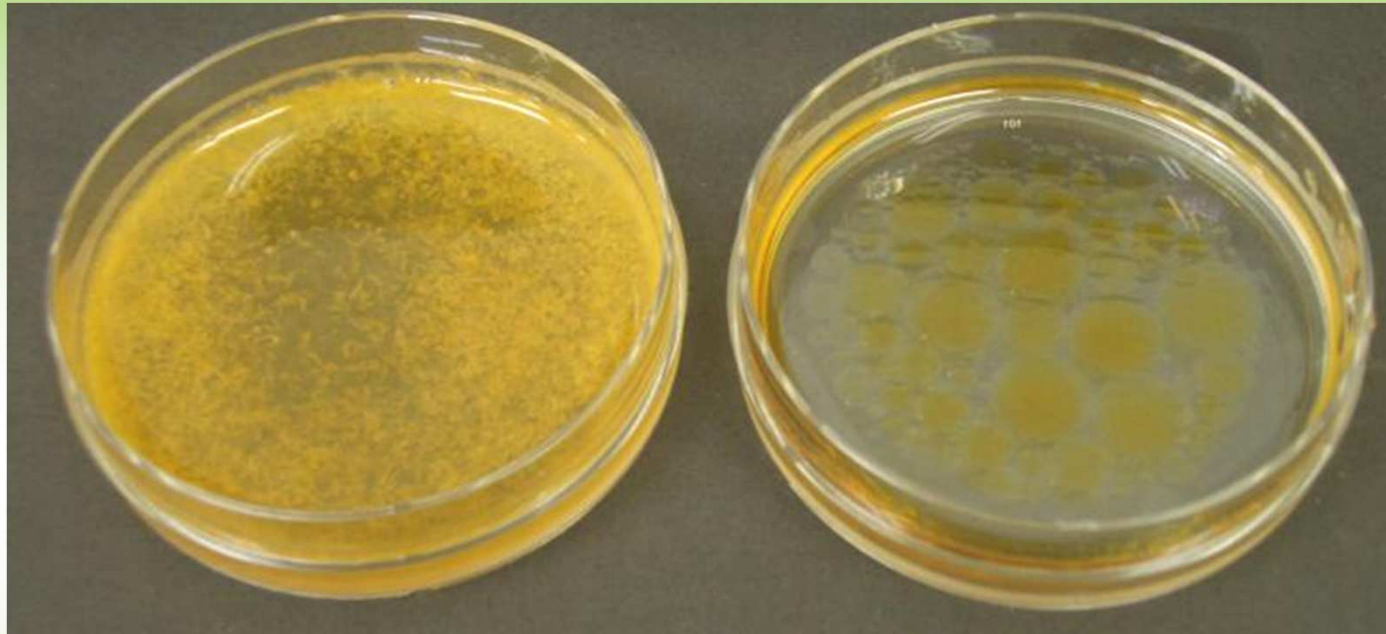
Foaming (Stop motion)



Example : Foam by Soapnut Extract Powder 5% solution

4. Physical tests

Surfactant potency



Soapnut Ext. Powder 5% sol.
+ Chili oil

Soapnut Ext. Powder 5% sol.
+ Water

Result : Soapnut Extract Powder solution
has Surfactant potency

4. Physical tests

Remove stain



15 min.



**Stain made by
2 mL of Sauce
on Cotton gauze**

**<Left>
Soapnut Ext. Powder 1% sol.
+ Rinse by water**

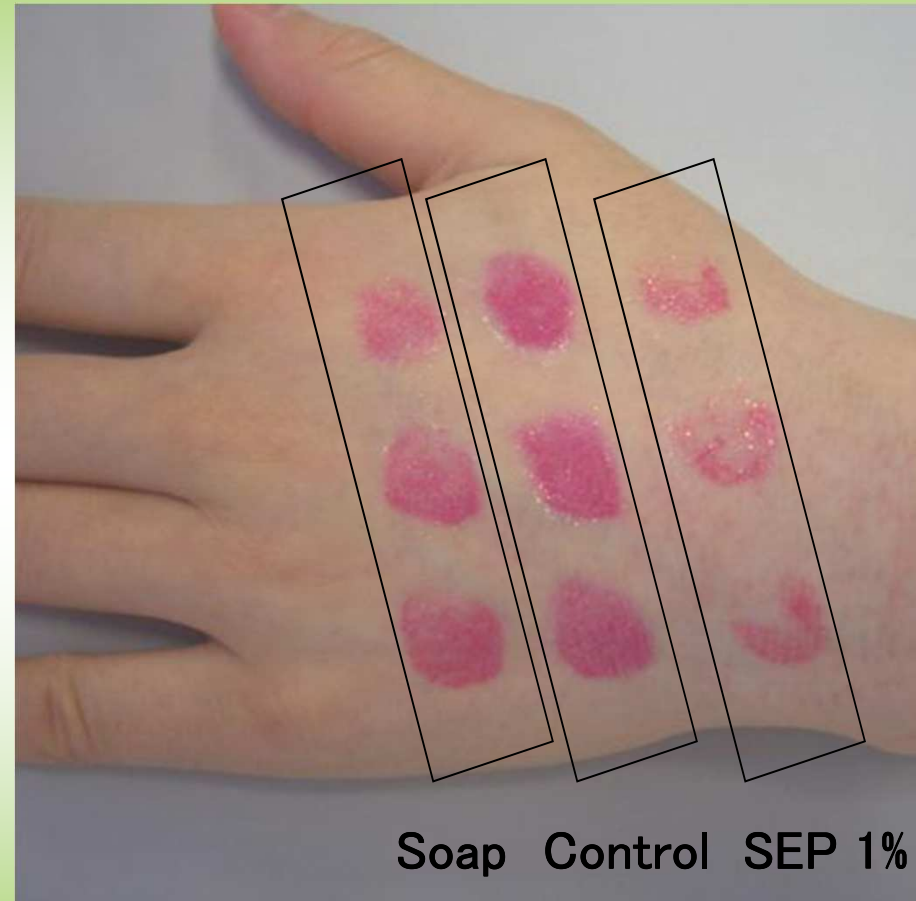
**<Right>
only
Rinse by water**

**Result : Soapnut Extract Powder is lipophilic
and its 1% solution remove stain**

4. Physical tests

Remove makeup #1 (Lipstick)

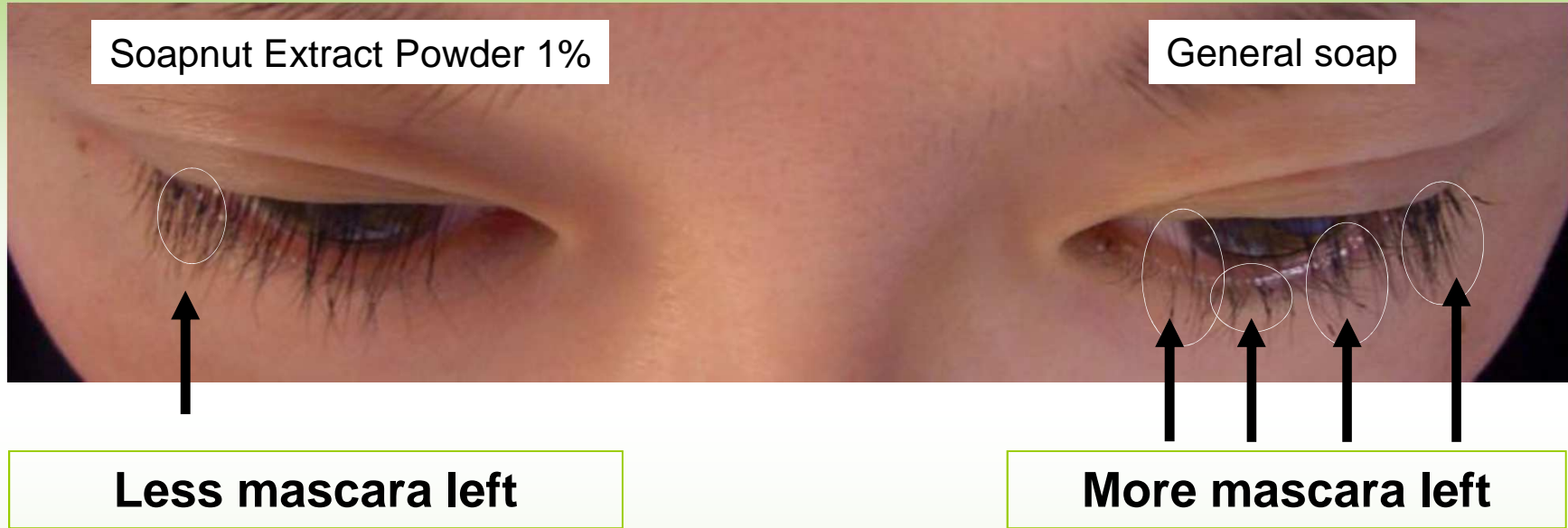
- ① Apply Lipstick on top of hand
- ② Foam general soap as positive control and Soapnut Extract Powder 1% solution (SEP 1%)
- ③ Put the foams on the applied lipstick on the hand without rubbing.
- ④ Rinse by little warm water after 30 minutes.



Result : Soapnut Extract Powder 1% sol. removes makeup more than general soap

4. Physical tests

Remove makeup #2 (Mascara)



- ① Apply mascara
- ▶
- ② Foam general soap as positive control and Soapnut Extract Powder 1% solution
- ▶
- ③ Wash the eye rush with the foams with rubbing
- ▶
- ④ Rinse by little warm water

Result : Soapnut Extract Powder 1% sol. removes makeup more than general soap

4. Physical tests

Foam stretch



Surfactant A 1%

(Sodium Laureth Sulfate 0.27%)

Soapnut Extract Powder 1%

(Saponin 0.2%)

Surfactant B 1%

(Potassium Cocoyl Glycinate 0.3%)

- ① Foam by same manner and take the foam into dish
- ② Stretch the foam and take picture when the foam is cut

Result : Soapnut Extract Powder 1% solution makes as good stretch foam as Surfactant B 1% solution

4. Physical tests

Foam stability 0 min



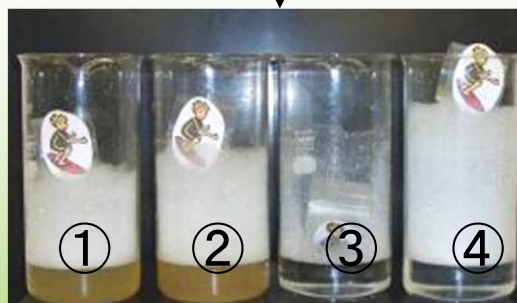
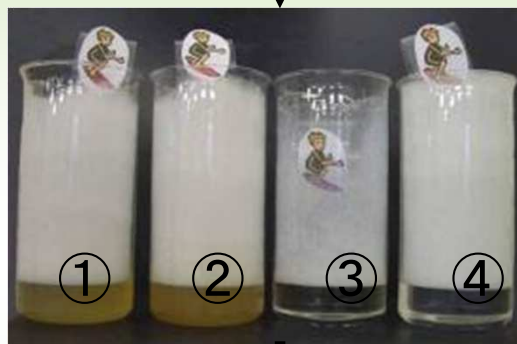
Pointer : Surfing man picture with 4cm x 5cm diameter base

Test method : Foam stability is measured by the Pointer's height

0 min

20 min

75 min

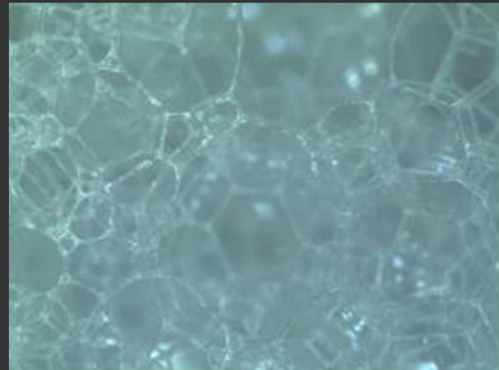


- ① Soapnut Extract Powder 0.5%
- ② Soapnut Extract Powder 1%
- ③ Surfactant A 1%
(Sodium Laureth Sulfate 0.27%)
- ④ Surfactant B 1%
(Potassium Cocoyl Glycinate 0.3%)

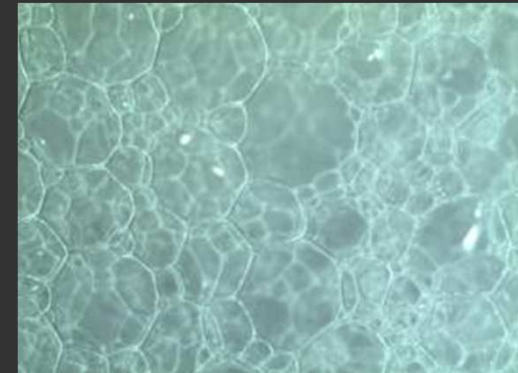
Result : Soapnut Extract Powder 1% solution makes as good stable foam as Surfactant B 1% solution

4. Physical tests

Foam quality (vs. surfactant)



Surfactant A 3.7%
(Sodium Laureth Sulfate 1%)



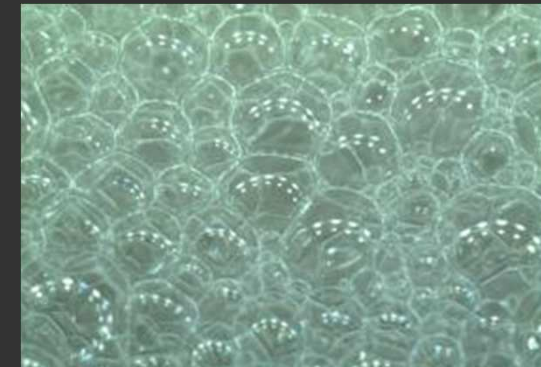
Surfactant B 3.3%
(Potassium Cocoyl Glycinate 1%)



Soapnut Ext. Powder 0.1%
(Saponin 0.02 %)



Soapnut Ext. Powder 1%
(Saponin 0.2 %)

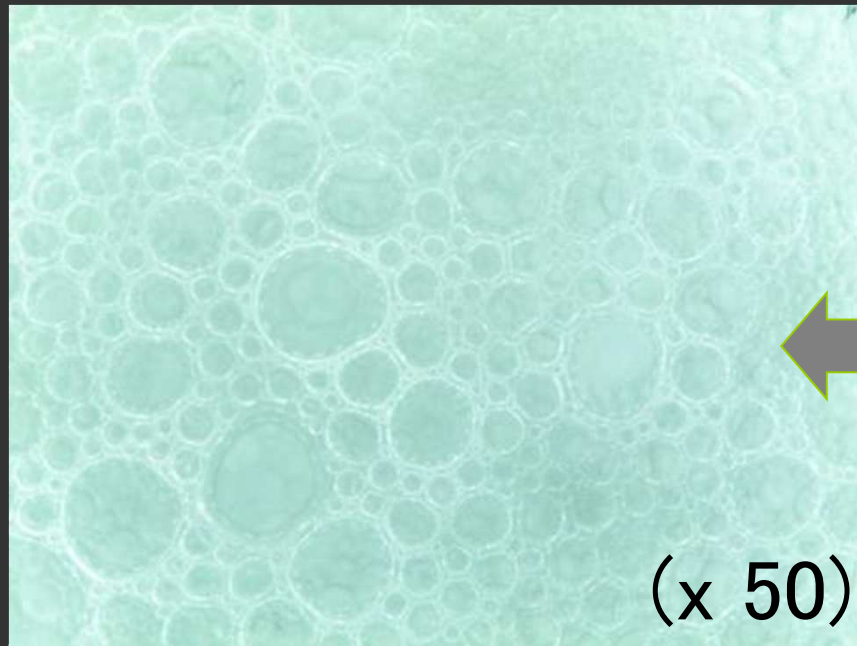


Soapnut Ext. Powder 5%
(Saponin 1 %)

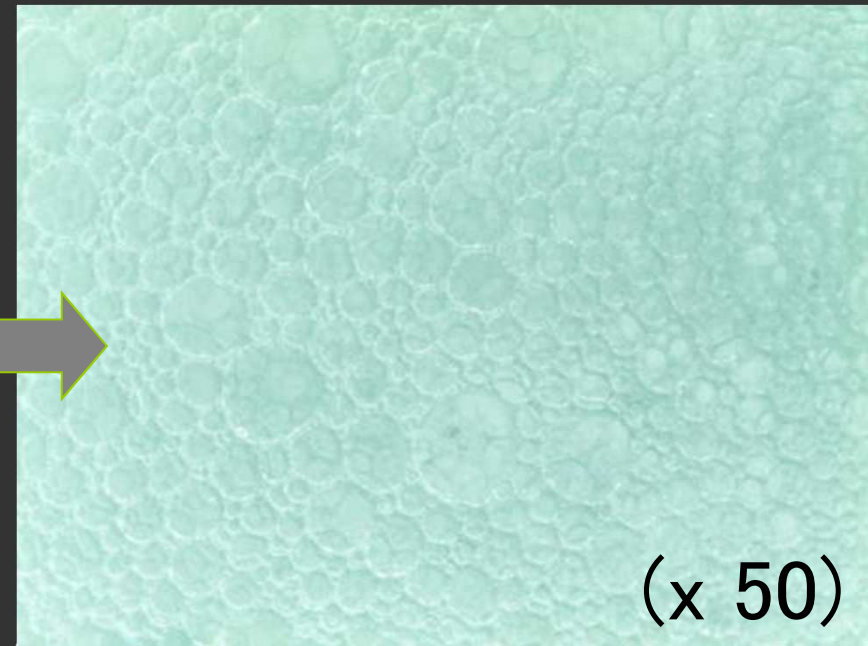
Result : Soapnut Extract Powder 1% sol. makes sphere and uniformed size bubble with good light reflection

4. Physical tests

Foam quality (with Soap)



Soap

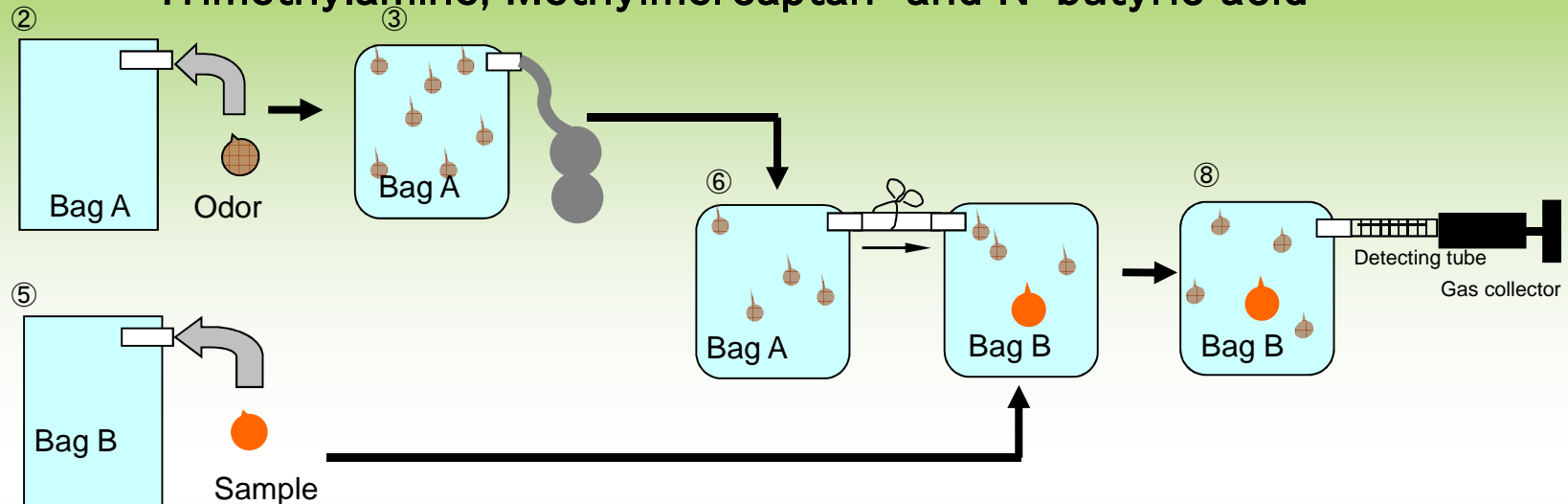


Soap + Soapnut Extract Powder 1%

Result : Soapnut Extract Powder 1% solution makes good smaller babbles and creamy foam by adding soap

5. Deodorant

Tested odor = Ammonia, Acetic acid, Iso-valeric acid,
Trimethylamine, Methylmercaptan and N-butyric acid



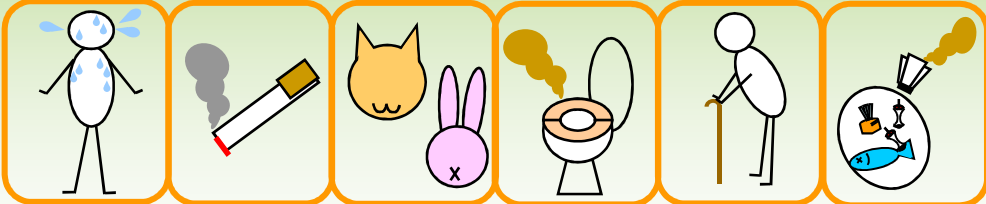
<Test method #1>

- ① Room temperature is set at 20 to 25 degree C
- ② Add Odor into Bag A
- ③ Fill up the air into Bag A
- ④ Keep sealed Bag A for 10 minutes
- ⑤④ Add 0.5g of samples into bag B
- ⑥ Move the gas of Bag A to Bag B
- ⑦ Keep sealed Bag B for 10 minutes
- ⑧ Measure concentration of odor in Bag B

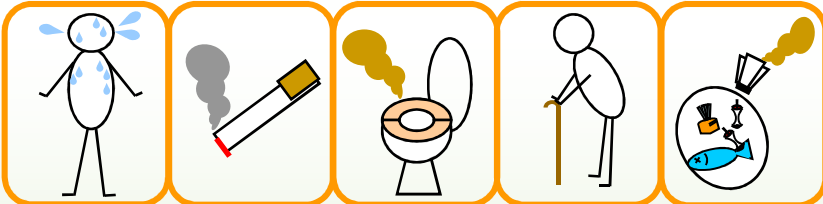
The inhibition is calculated with purified water as control for solution samples and air for powder sample.

5. Deodorant

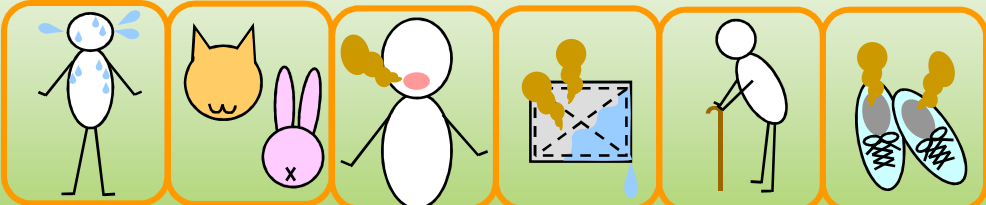
【 Ammonia 】



【 Acetic acid 】



【 Iso-valeric acid 】



Result

Soapnut Extract Powder 1% solution

Soapnut Extract Powder

14% ↓

51.9% ↓

22.8% ↓

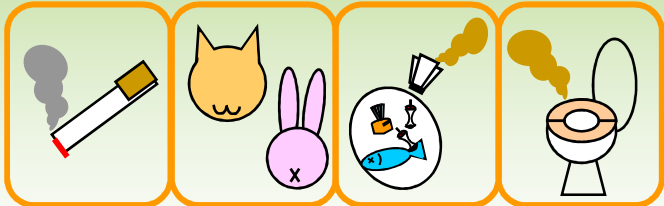
28.7% ↓

9% ↓

65.6% ↓

5. Deodorant

【 Trimethylamine 】



Result

Soapnut Extract Powder 1% solution	Soapnut Extract Powder
---------------------------------------	---------------------------

19.9% ↓

17.9% ↓

【 Methylmercaptan 】



→

68.6% ↓

【 N-butyric acid 】

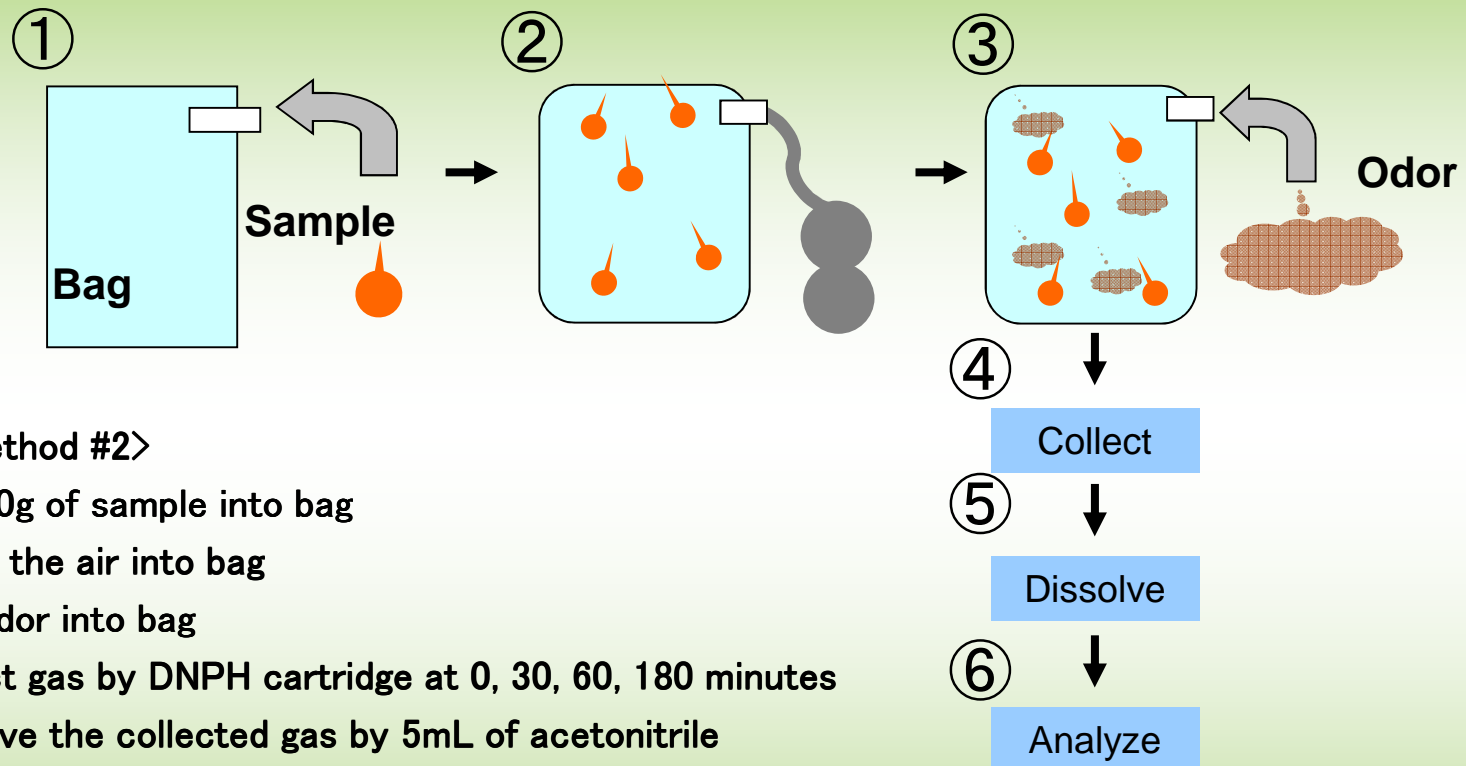


16% ↓

→

5. Deodorant

Tested odor = 2-Nonenal



<Test method #2>

- ① Add 20g of sample into bag
- ② Fill up the air into bag
- ③ Add odor into bag
- ④ Collect gas by DNPH cartridge at 0, 30, 60, 180 minutes
- ⑤ Dissolve the collected gas by 5mL of acetonitrile
- ⑥ Analyze the gas concentration by HPLC

The other odors (Ammonia, Acetic acid, Iso-valeric acid) are measured by test method #1.

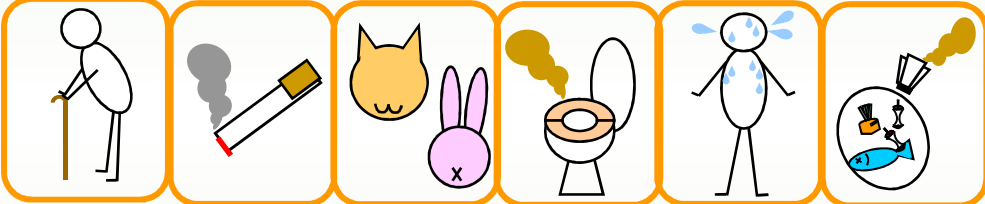
5. Deodorant

【 2-Nonenal 】



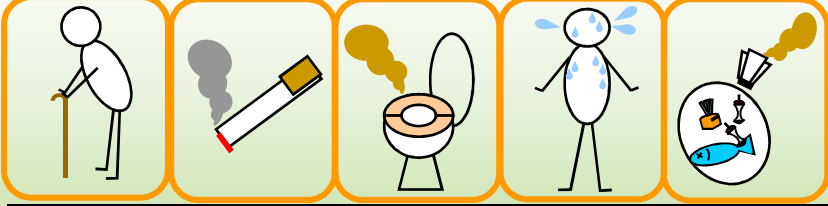
Result	
Soapnut Extract Powder 1% solution	Soapnut Extract Powder
Not Test	66.7% ↓

【 Ammonia 】



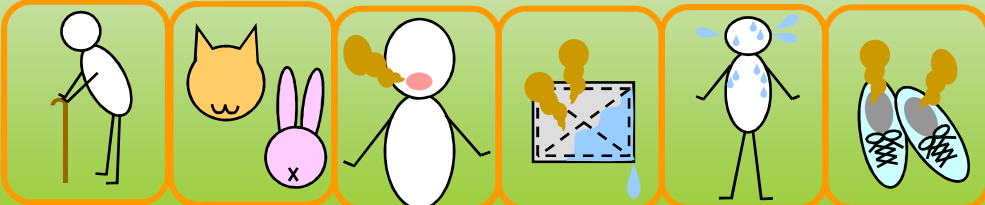
14% ↓	51.9% ↓
-------	---------

【 Acetic acid 】



22.8% ↓	28.7% ↓
---------	---------

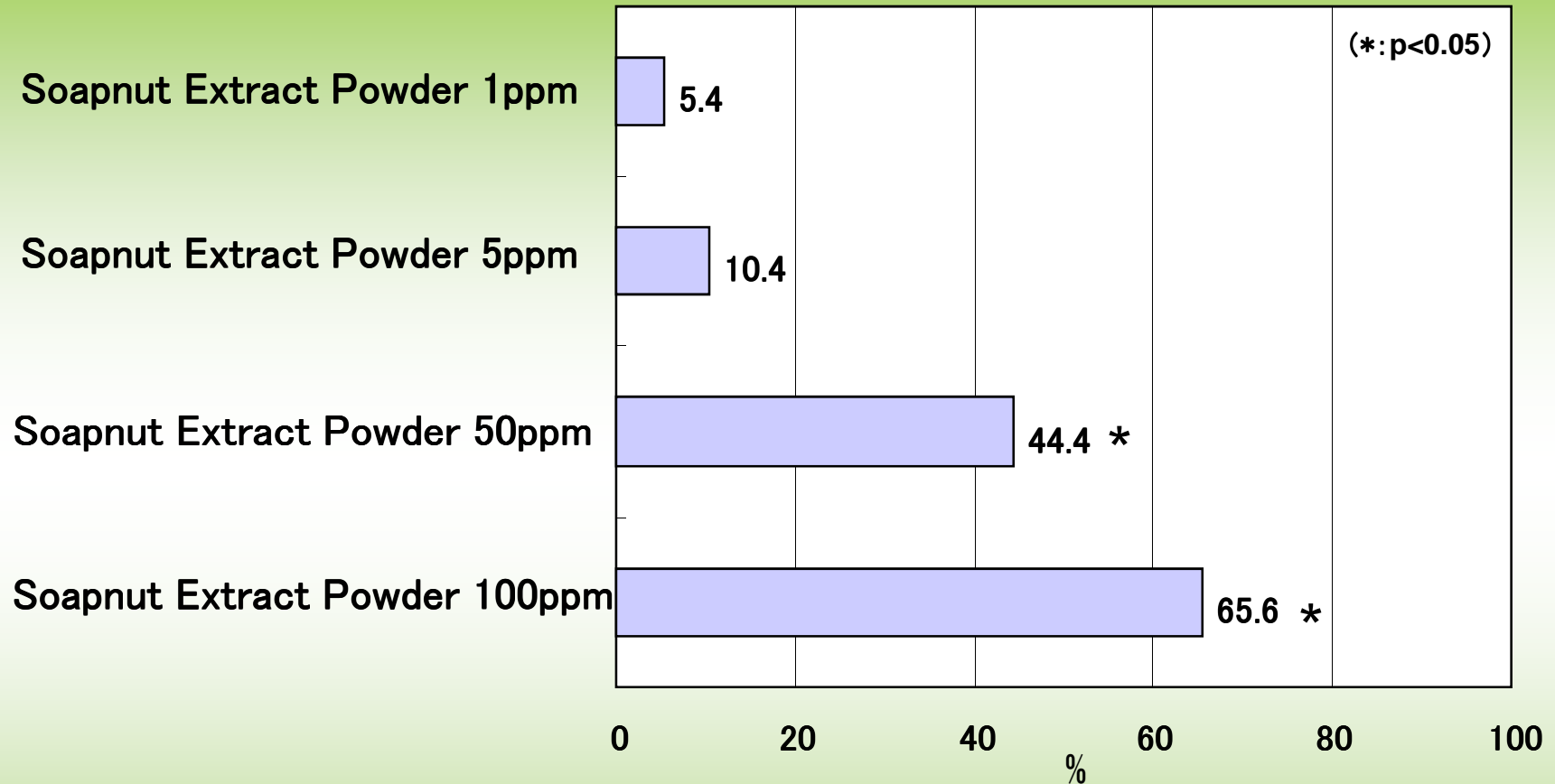
【 Iso-valeric acid 】



9% ↓	65.6% ↓
------	---------

6. Efficacy tests

SOD like Effect



Result : Soapnut Extract Powder has SOD like Effect
at 50 and 100 ppm

7. Clinical tests

Inhibit Rough skin #1

Soapnut Extract Powder 5% solution
(Saponin 1.0%)

Surfactant A 5%
(Sodium Laureth Sulfate 1.35%)

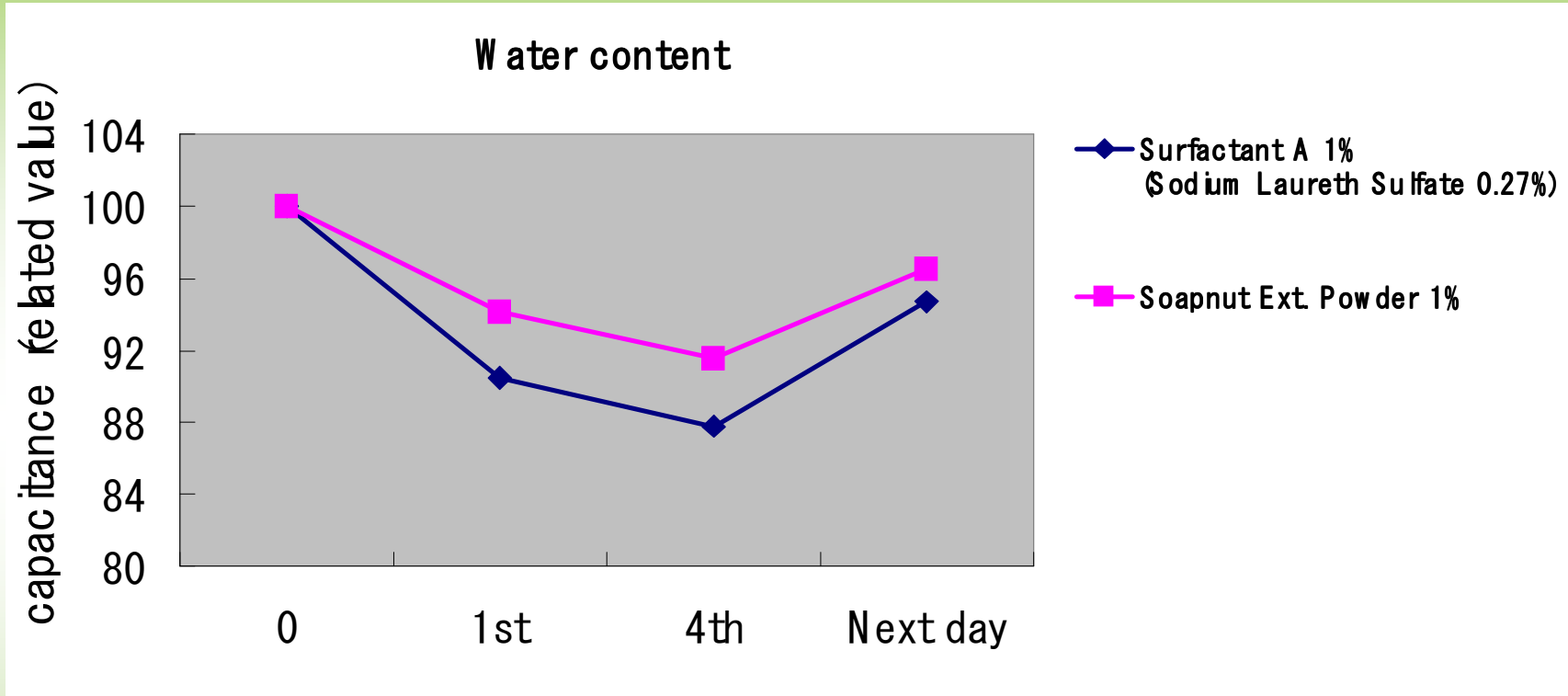


Forearm : After rubbing 75 times by double action

Result : Soapnut Extract Powder has less scares and prevents skin damage by repeat wash

7. Clinical tests

Inhibit Rough skin #2



Forearm : 1 set = Rubbing 100 times by double action and leave 1 hour
 Test method = Measure capacitance by Corneometer after 1st and 4th set (9 people)

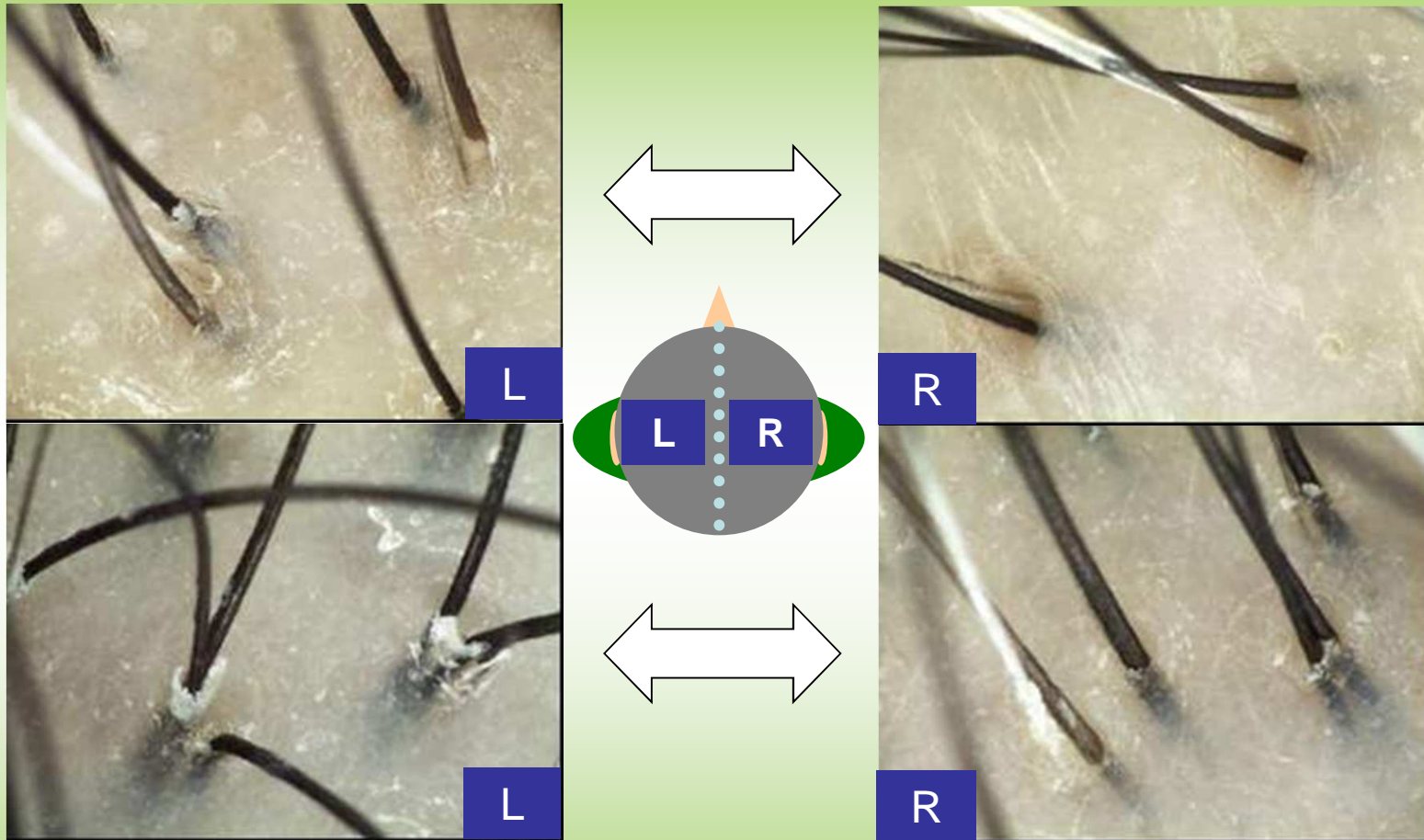
Result : Soapnut Extract Powder 5% solution inhibits water loss than A by repeat wash

7. Clinical tests

Washing Hair #1

Control Shampoo

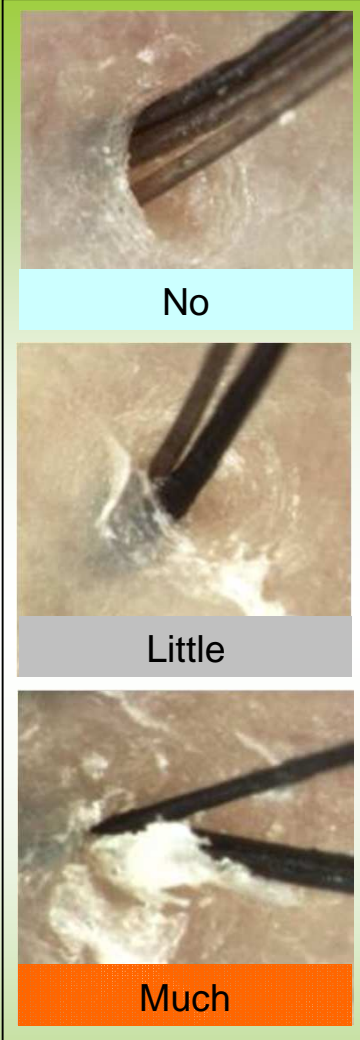
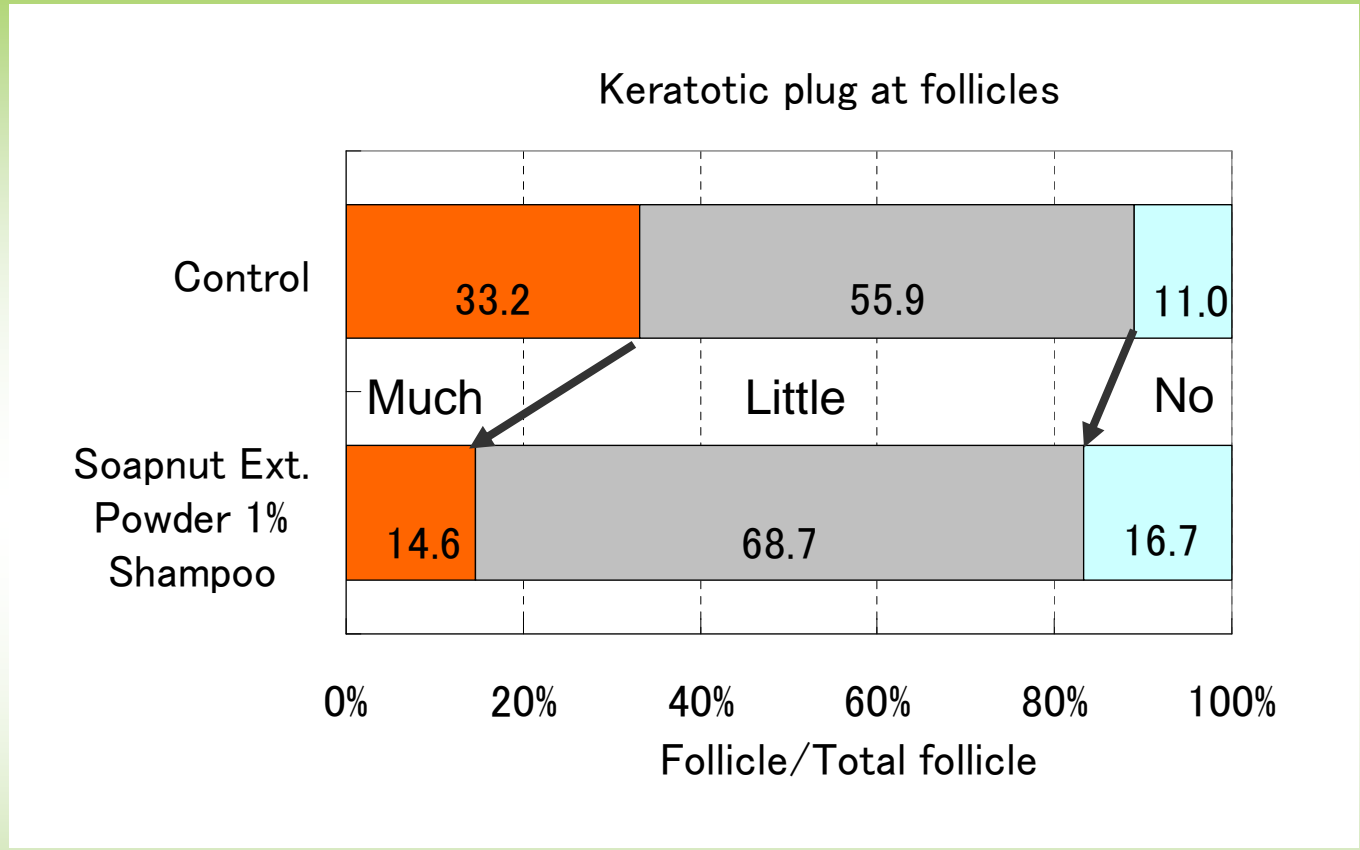
Soapnut Extract Powder 1% in Shampoo



Result : Soapnut Extract Powder 1% Shampoo reduces keratotic plug at follicles among 10 people

7. Clinical tests

Washing Hair #2



Result : Soapnut Extract Powder 1% Shampoo reduces keratotic plug at follicles among 10 people

8. Professional test

Tested by professional Beauty specialist from a popular hair salon called “Hidamarino Rune” pursuing best solution for damaged hair

<Test>

Sample = The salon shampoo containing
Soapnut Extract Powder 1%

Control = The salon shampoo

Period = 1 week x 2 sets

Method = Beauty specialist at Hair salon tested
Sample and Control on right/left head



Hair salon (Hidamarino Rune)

<Result>

1. Felt good elasticity and volume on hair after dry
2. Kept the volume easily
3. Felt moist on bottom like with treatment
4. Expected more uniformed bottom if could use longer
5. Felt repair effect on damaged bottom hair
6. No negative points including odor

Conclusion and Key words

Soapnut Extract Powder from **ICHIMARU PHARCOS** is;

- Raw material cultivated in one of the world largest organic farm certified by India and EU
- Soapnut namely Ritha (*Sapindus Trifoliatus*) is widely used in many applications in history
- 100% pure extract powder
- Stability tested with general surfactants
- Excellent Foaming
- Foam physicality tested
- Good surfactant potency
- Remove stain and make up well
- Deodorant for sweaty and aged people odor
- Anti-oxidation (SOD like effect) confirmed
- Clinical tested (inhibit rough skin, wash hair)
- Professional tested

