

 **DADA**
Spa Gelpatch *42°C*

2016

Content

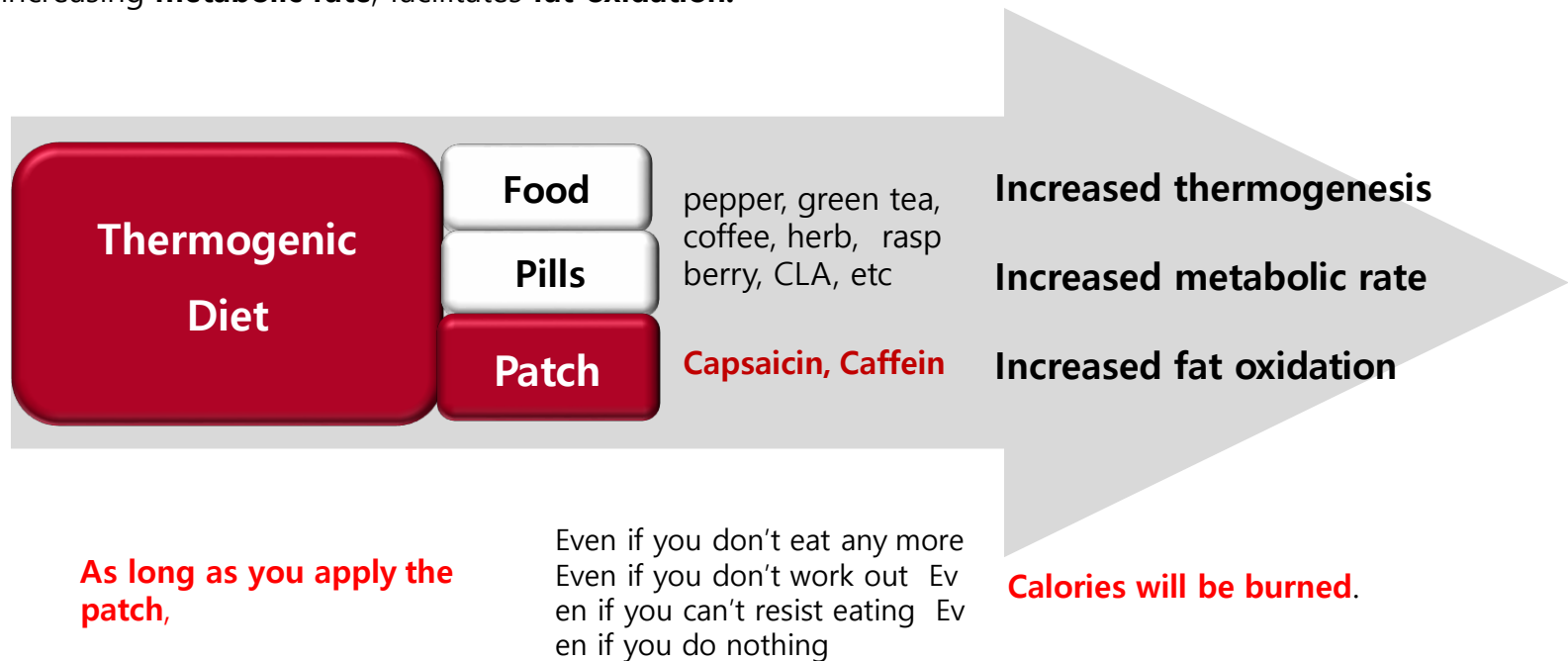
1. Definition
2. Naming
3. Effects of Spa Gelpatch
 - 1) Overview
 - 2) Increased metabolic rate effect
 - 3) Increased basal metabolic rate and fat oxidation effect
 - 4) Fat reduction effect of topical application
 - 5) Improved elasticity effect of saggy abdomen
 - 6) Improved skin radiance effect
4. How Spa Gelpatch Works
5. TPE Gel
6. Active Ingredients
7. Product Information
8. Patent and Certification



Definition

Thermogenic Diet Patch

Thermogenic Diet Patch which you can just apply, and it can create **thermogenic effect** for eight hours, increasing **metabolic rate**, facilitates **fat oxidation**.

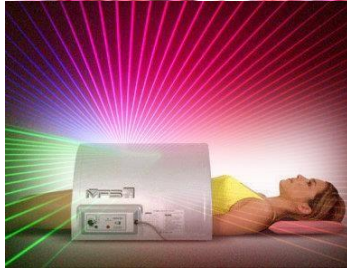


As long as you apply the patch, elasticity of saggy abdomen will be improved.

A new diet patch which applied the principle of thermogenesis for the first time in the world

Naming

The same effect as **spa**, hot gel massage, wrapping, far-infrared radiation care from luxurious aesthetic shops
A product that is made of TPE gel and can have the effects of both **gel** and wrapping at the same time
A **patch** that can be used anytime, anywhere, without any restrictions
42°C which is the symbol of pleasant warmth and the perfect thermal water to take bath in



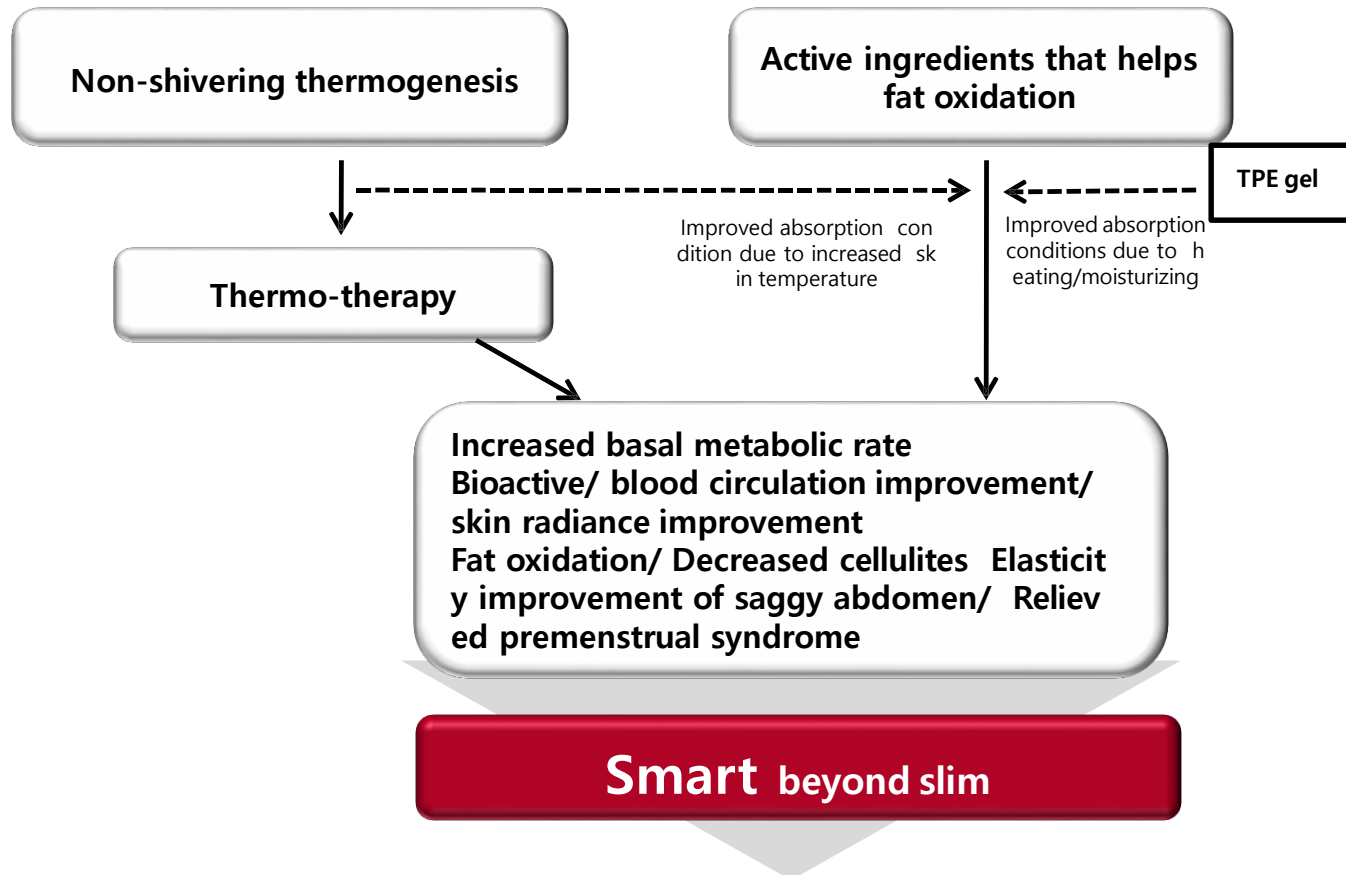
Spa Gelpatch 42°C



Effects of Spa Gelpatch

The heat given off by capsaicin is not an illusion but an actual thermogenesis effect.

Thermogenesis is the result of an increased metabolic rate, and it's a process that allows our body to become smarter.



Effects of Spa Gelpatch

Increased metabolic rate

When capsaicin is taken or topically applied, the thermogenesis mechanism is activated, increasing the metabolic rate.

Human testing on increased TEE (Total Energy Expenditure (after 24 hours))

	100%C	80%C	100%Caps	80%Caps
TEE, ² MJ/d	10.1 ± 0.2 ^a	9.6 ± 0.2 ^b	10.3 ± 0.2 ^c	10.0 ± 0.2 ^a
TEE, % of 100%C	100	95	102	100

①

②

Thesis 1: The Journal of Nutrition p442~p447, (SCI thesis)
Initial review completed November 3, 2012. Revision accepted January 15, 2013

- ① An increased metabolic rate of 2% was found in experimental group that took capsaicin, in the balanced condition of energy intake and expenditure.
- ② In the shortage of energy intake by 20%, there was an increased metabolic rate of 5% in the experimental group that took capsaicin.

Capsaicin intake increases the metabolic rate,

Effects of Spa Gelpatch

Increased basal metabolic rate

Human testing on increased REE/SMR and fat oxidation (after 24 hours)

REE: Resting Energy Expenditure

(It can be measured with body fat analyzer. It's mixed up with basal metabolic rate.)

SMR: Sleeping Metabolic Rate

	100%CAPS	100%Control	75%CAPS	75%Control
EI (MJ/d)	9.09±0.4	9.09±0.4	6.81±0.3***#	6.81±0.3***#
EB (MJ/d)	0.15±0.2	0.22±0.2	-1.81±0.1***#	-1.71±0.1***#
TEE (MJ/d)	8.82±0.4	8.75±0.4	8.52±0.4*#	8.41±0.4**#
REE (MJ/d)	7.70±0.4	7.55±0.3	7.49±0.3	7.35±0.3*#
SMR (MJ/d)	6.69±0.3	6.47±0.3	6.45±0.3	6.39±0.3*
DIT (MJ/d)	1.00±0.1	1.09±0.1	1.03±0.1	0.95±0.1#
AEE (MJ/d)	1.12±0.1	1.20±0.1	1.03±0.1	1.06±0.1

Thesis 2: PLOS ONE July 2013 | Volume 8 | Issue 7 | e67786, Public Library of Science (SCI-E)

- ① It turned out that the experimental group that took capsaicin had bigger REE than the comparison group that didn't take capsaicin.
- ② The experimental group that took capsaicin had also bigger SMR than the comparison group that didn't take capsaicin.

Effects of Spa Gelpatch

Increased Fat Oxidation

Human testing on increased fat oxidation (four weeks)

		week		
		0	2	4
Fat oxidation (mg/min)	CSNs10	80.6 ± 4.7	82.4 ± 5.9	83.4 ± 5.1
	CSNs3	78.5 ± 3.5	82.2 ± 4.5	81.0 ± 5.2
	controls	87.4 ± 5.2	81.9 ± 5.8	80.7 ± 3.6

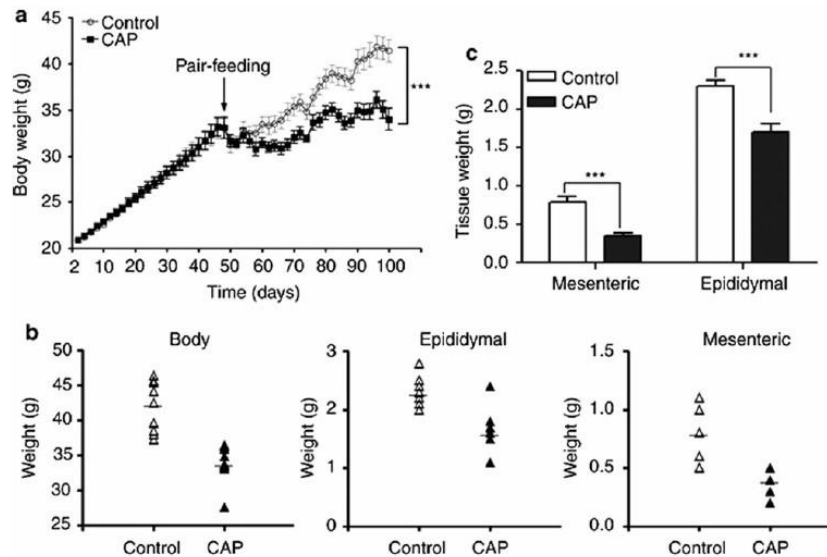
Thesis 3: Bioscience, Biotechnology, Biochemistry 71(2),380-389, 2007 (SCI)

During the metabolic process, adipolysis occurs through fat oxidation. The experimental group which took capsaicin all had increased fat oxidation. Thereby, giving them an increased adipolysis compared to comparison group.

Effects of Spa Gelpatch

Fat reduction effect of Topical application

Animal testing on effects of topical application of capsaicin for visceral fat reduction (after seven weeks)



Thesis 4: Obesity | VOLUME 21 | NUMBER 1 | JANUARY 2013 (SCI-E)

Spa Gelpatch 42°C which has both a topical application effect of capsaicin and continual effect of a patch

Effects of Spa Gelpatch

Improved elasticity effect of saggy abdomen

Elasticity of saggy abdomen improved by 2.65% after three weeks of use
 Statistically significant results ($p < 0.001$)

Table 5. Change in skin elasticity (N=22)

	Before use	Three weeks after use
Mean	0.79	0.81
StDev	0.04	0.03

Table 6. Skin elasticity improvement rate (%)

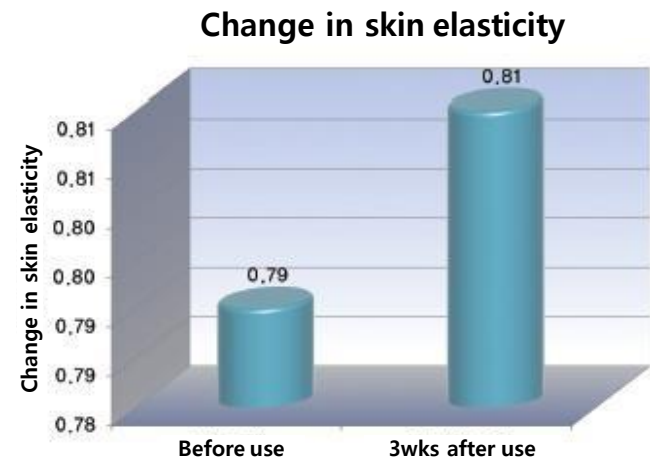
	Three weeks after use
Improvement rate (%)	2.65

$$\text{Improvement rate} = \frac{|\text{Measures after use} - \text{Measures before use}|}{\text{Measures before use}} \times 100$$

Table 7. Statistical analysis of skin elasticity

	Three weeks after use
p-value	.000***

*p < .05 **p < .01 ***p < .001 : p-value is measured by paired t-test



Human testing on Spa Gelpatch 42°C's elasticity improvement of saggy abdomen
 Korea Institute for Skin and Clinical Sciences 2016.1~2.

Effects of Spa Gelpatch

Improved skin radiance effect

**Skin radiance improved by 13.38% after three weeks of use
Statistically significant results (p<0.001)**

Table 2. Change in skin radiance (N=22)

	Before use	Right after use	Three weeks after use
Mean	1.23	1.26	1.40
StDev	0.29	0.29	0.31

G.U=Gloss Unit

Table 3. Skin radiance improvement rate (%)

	Right after use	Three weeks after use
Improvement rate (%)	2.14	13.38

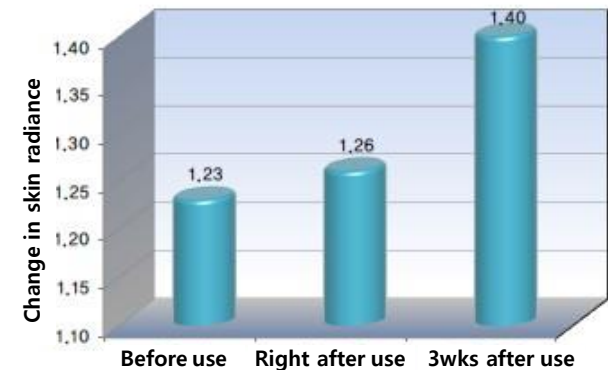
$$\text{Improvement rate} = \frac{|\text{Measures after use} - \text{Measures before use}|}{\text{Measures before use}} \times 100$$

Table 4. Statistical analysis of skin radiance

	Right after use	Three weeks after use
p-value	.193	.000***

*p <.05 **p <.01 ***p <.001 : p-value is measured by paired t-test

Change in skin radiance



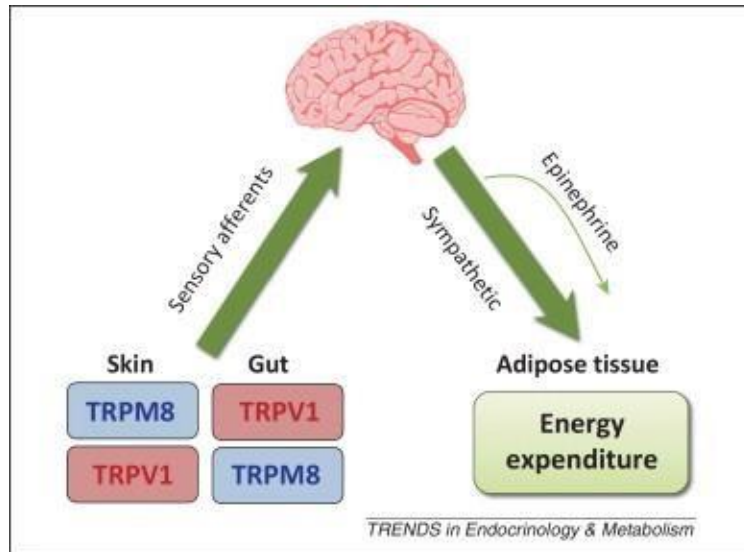
Human testing on Spa Gelpatch 42°C's body radiance improvement
Korea Institute for Skin and Clinical Sciences 2016.1~2.

How Spa Gelpatch Works

Capsaicin which induces thermogenesis and fat oxidation

When signals stimulated by **capsaicin** are conveyed to fatty tissues through sympathetic nerve, it creates energy through **fat oxidation**, producing **thermogenesis**.

Thermogenesis and fat oxidation flow chart 1



Skin: Skin contact

Gut: after intake, it reacts inside internal organs

TRPV1: Transient Receptor Potential Vanyloid1

It's a sensory receptor as well as a capsaicin receptor.

Thesis 5 : 『Cell』, November 2013, Volume 24, Issue 11, p554-560 (SCI)

Thermogenesis and fat oxidation flow chart 2

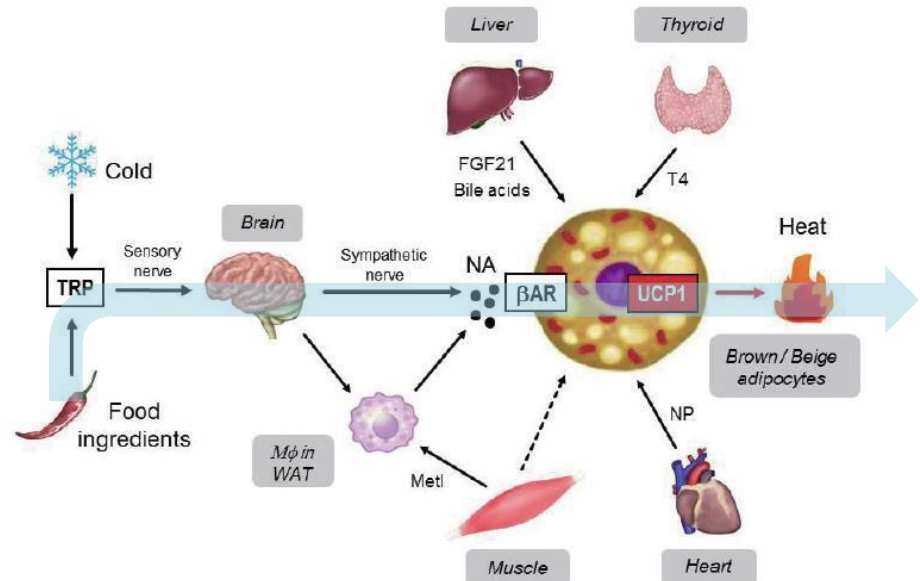


Fig. 2. Factors acting on brown/beige adipocytes.

βAR:β-adrenoceptor, NA:noradrenalin, TRP: transient receptor potential, WAT: white adipose tissue.

Thesis 6: The Korean Journal of Obesity, 2015 March;24(1):1-8 (KCI)

As soon as you can feel the warmth, your fat is already burning.

How Spa Gelpatch Works

Underestimated Capsaicin

Capsaicin isn't a pernicious ingredient for the skin. The problem is in its overuse.

- As emulsion products that are combined with cream gel, hydrogel, purified water, etc are not efficient to convey capsaicin as capsaicin doesn't melt well in it. People end up overusing it to maximize the effect, and skin irritation problems emerge.
- Fat-soluble, oil products don't easily dry up and efficient to convey capsaicin, but they are not sustainable as oil can come off.

The best alternative to convey capsaicin: TPE gel

TPE gel, which is Spa Gelpatch's basic formulation, is excellent in conveying and storing capsaicin.

- Fat-soluble substance: Capsaicin melts well in it.
- Gel material: It conveys to the skin quite fast as molecular motion of capsaicin which reacts to skin temperature is facilitated.
- Cohesive high molecular substance: Capsaicin continually remains in the TPE gel well.
- Small mild doses can maximize the capsaicin effect.

It's more important to convey the ingredients properly rather than just having 100 patented ingredients.

How Spa Gelpatch Works

Improved skin absorption conditions

Increased Skin temperature due to thermogenesis effect
Heating/Moisturizing effect of TPE gel

Improved Skin
absorption co
nditions

Skin temperature and moisture level increased with Spa Gelpatch applied

- Heating/Moisturizing effects that came from greenhouse effects of TPE gel and patch: it improves skin radiance
- It can convey active ingredients through passive diffusion without any additional sorbent or fluidization booster.
- Clinical trial in preparation

Capsaicin + TPE gel + Patch ➡ Effective Thermogenic Diet Patch

TPE Gel

TPE gel (Thermo Plastic Elastomer Gel)

Thermoplastic pressure sensitive adhesive, which is soft and harmless for the body, can be repeatedly used. (PSA, Pressure Sensitive Adhesives)

Characteristics

1.It's harmless for the body.

- Materials harmless to human, used for medical gel, band, cosmetics, etc, are taken as TPE materials.
- Materials harmless to human, used for food plastic wrap, sanitary pad, medical patches, etc are taken as adhesion materials.

2. It applies well and comes off easily, leaving no marks (transfer-free)

3. It's convenient as there is no restriction of time, space, activities.

- It's made of a thin transfer-free patch which isn't noticeable.
- It can last for over eight hours.
- No additional preparations or goods are needed other than just applying the patch

4.It has excellent capsaicin conveyance ability, which is a suitable formulation for Thermogenic Diet.

You can feel the pleasant warmth anytime, anywhere.

TPE Gel

Comparison of Body Patch Formulations

	Acrylic	TPE Gel	Hydrogel
Condition of material	Solid	gel	gel
Conveyance method of material	Solid components react and convey through body temperature.	Components inside gel are conveyed through body temperature	It conveys components by fluidifying gel through body temperature and substances
Conveyance time of material (the time until heat is detected)	It's very slow as it conveys solid components, and can't even feel it at times	Within 20~30mins. As it's a gel type, it's quick to convey body temperature and components.	Within 10mins. Fluidization booster, such as sodium hydroxide and skin sorbent booster, such as butylene glycol are used to expedite conveyance and absorption of components.
Continuity	Eight hours of use is recommended, but it's still not effective.	It can last for over eight hours.	It dries up within 30-40mins if it's water-soluble.
Features	It applies well, but there's concern of skin irritation due to its solvent.	Excellent adhesiveness, and material conveyance ability. Skin stability	Poor adhesiveness
	It was meaningful as it opened the market for the attachable diet patches.	Instead of boasting of components, it's more focused on the conveyance of components.	It's suitable formulation for mask packs which need good moisturizing.
	Easy mass production. Cheap price.	Easy mass production. Cheap price	Restricted mass production. High costs, expensive price.
	Low quality. Low effectiveness.	Most excellent formulation for continually conveying fat-soluble capsaicin	It's more proper material for mask packs rather than body patches.
	No entry barriers for production, weak regulations	World's first product (patent pending) Difficult to copy within the next 2-3 years	The hydrogel market in Korea is already saturated.
		It doesn't use any solvent or booster.	It contains too many components to make it a gel type, to fluidify gel, and to convey materials.
Relevant companies	『MyMi』 『lolo skinny』	『Spa Gelpatch 42°C』	『Doctor top patch me』 etc. ... No significant sales.

Active Ingredients

Capsaicin

1. It induces thermogenesis and fat burning, and helps fat oxidation in that process.
2. It prevents pre-adipocytes called 『3T3 L1』 from speciating into fat tissues, to inhibit fat cell growth.

Caffeine

1. It's a typical material that helps fat oxidation and cellulite reduction.

Soil Mineral

1. It's a patented substance, made of natural organic materials, and emits a lot of far infrared radiation.
2. It's used for food containers, cosmetics, etc.
3. Patent no. 10-1320338 『Food package comprising natural minerals radiating green energy』

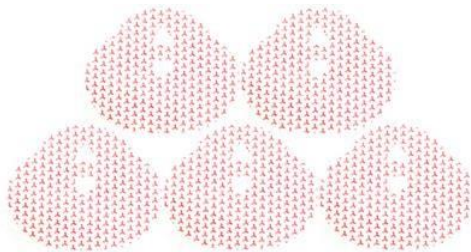
Cordycepin

1. It's a basic component of cordyceps. It's bioactive, has anti obesity effect and maintains balance of the immune system.
2. Patent no. 10-0799116 『A Pharmaceutical composition comprising cordycepin for the treatment and prevention of obesity』

Product Information

Composition of products

Belly type



**Suggested retail price: ₩20,000
(5 pieces)**

Corset type

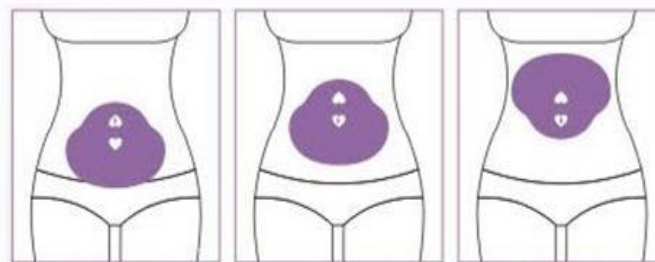


**Suggested retail price: ₩25,000
(5 pieces)**

Product Information

How to use

1. Select which part of body you would like to apply it to: the upper abdomen, the center abdomen, or the lower abdomen. Then, place one of the heart shape holes on your belly button to determine the location of application. (Belly type)
2. It's convenient to peel off the center film and apply it first, and then apply the rest.
3. Press the whole patch evenly for 30secs to make sure it's evenly placed on the skin.

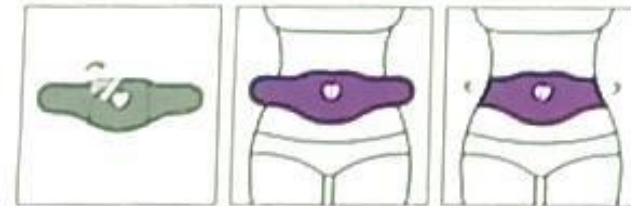


Apply on the lower abdomen

Apply on the center abdomen

Apply on the upper abdomen

Belly type



Corset type

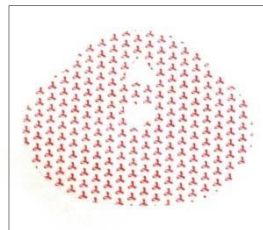
Product Information

Cautions

1. Discontinue use if there are adverse reactions to the skin, such as swelling, pain, redness, etc.
2. Do not use this product if you have skin problems or eczema, allergies.
3. Keep out of reach of children. Keep away from heat over 30 °C and direct sunlight as much as possible.
4. Generally, you can feel the highest body temperature within 2-4 hours after applying the patch. Heat continues for eight hours. But please discontinue use if it's getting too hot.
5. Eight hours of use per day is recommended, using it 1-2 days in a row followed by a one day break.

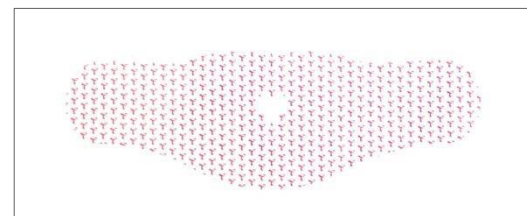
Product Specification

Belly type



**width 230mm
length 185mm**

Corset type

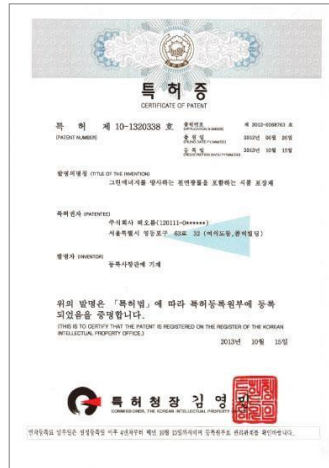


**width 500mm
length 165mm**

Patent & Certification



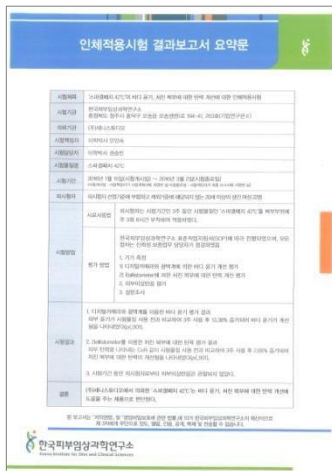
Patent no.10-0799116



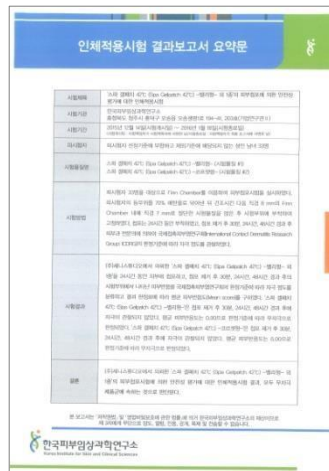
Patent no.10-1320338



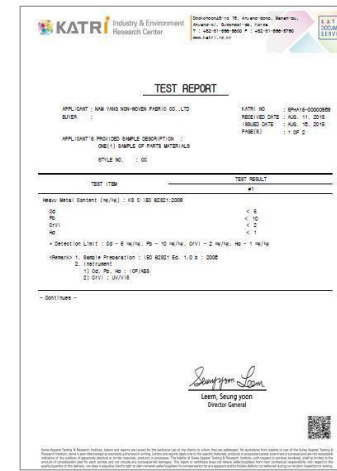
Korea Far Infrared Association - Emission rate measure results-



Korea Institute for Skin and Clinical Sciences -Human testing on elasticity improvement of s aggy abdomen and body radiance improvement-



Korea Institute for Skin and Clinical Sciences -1st Skin irritation test-



Korea Apparel Testing and Research Institute -harmful substance not detected-