



# Dr. DMAΣ

SOLUTION ESSENCE

Purple



# Rejuvenate your skin with Dr. DMAE



- ✓ Optimal ingredient formulation for anti-aging
- ✓ New tightening treatment concept containing DMAE
- ✓ Premium skin booster to solve various skin complex

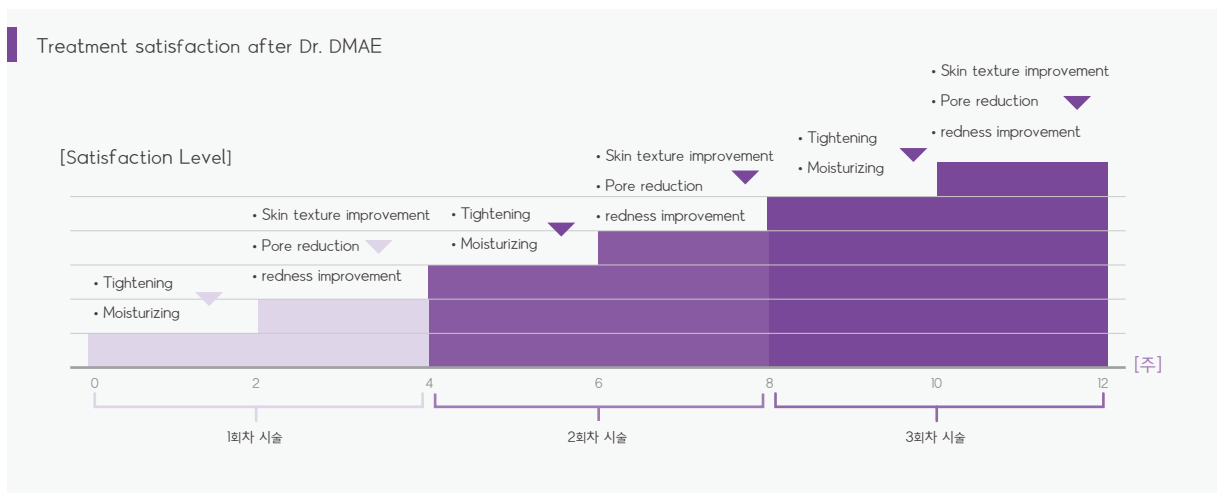
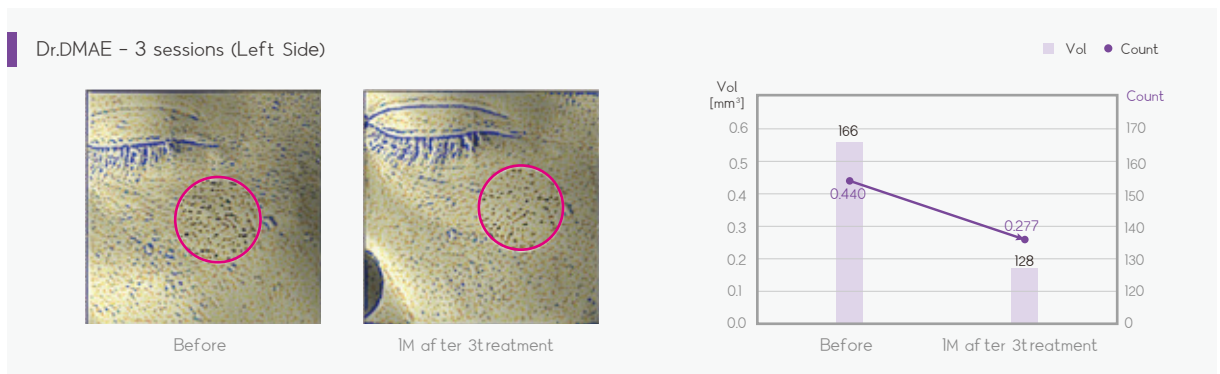


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Dr. DMAE Solution Essence Purple is a skin booster consist of DMAE, PDRN and non-crosslinked hyaluronic acid. The active ingredients are absorbed into the skin to provide strong tightening, skin rejuvenation and moisturizing effects.



After being absorbed into the skin,

DMAE keeps the tightening effect continue for 4 to 8weeks after the procedure.

Thanks to that, the patient's satisfaction much increases as every repeated treatment.<sup>1)</sup>

1) Ref. 기문상 외 23명, 『피부 진피재생 스킨부스터와 피부장벽, 물광주사』 엠디월드 (2019), 592-601



Skin tightening

Skin rejuvenation

Hydrating

## DMAE (Dimethylaminoethanol)

- A precursor of acetylcholine (neurotransmitter) - increase the synthesis of acetylcholine
- As a hydrophilic molecule with a very small molecular weight, it easily penetrates into the epidermis and dermis
- Improves Skin elasticity, Fine lines, Pores / Improves dermal layer environment

## PDRN (Polydeoxyribonucleotide)

- DNA fragment purified from salmon
- Excellent biocompatibility (sequence similar to the human body), minimal side effects
- Skin rejuvenation, Promote wound healing

## HA (Hyaluronic Acid)

- Natural moisturizing factor contained in the human body, Main component of extracellular matrix (ECM)
- Excellent water holding capacity, moisturizing and soothing effect
- Together with collagen, it is involved in skin elasticity and skin aging

1) Ref. Paula Souza Prestes(2013). Development, physical-chemical stability and rheological behavior of silicones formulations containing Dimethylaminoethanol (DMAE). Journal of Applied Pharmaceutical Science Vol. 3 (02), pp. 001- 005

2) Ref. Francesco Squadrito (2017). Pharmacological Activity and Clinical Use of PDRN. Frontiers in Pharmacology 8:224.

3) Ref. Vic A Narurkar(2016). Rejuvenating Hydrator: Restoring Epidermal Hyaluronic Acid Homeostasis With Instant Benefits. J Drug

Ref. Weindl G.(2004). Prevention of Skin Diseases: Molecular Biological, Pharmaceutical and Clinical Aspects. Skin Pharmacol Physiol ; 17:207?213

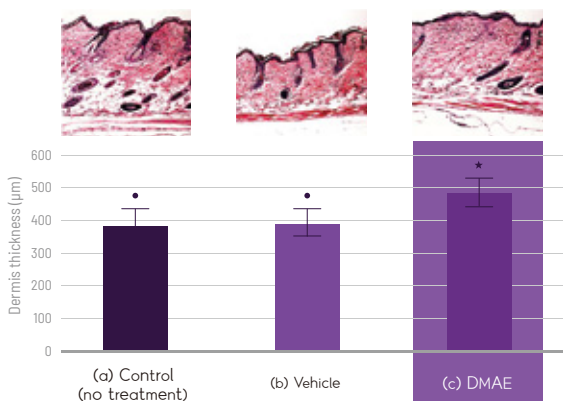
# DMAE Academic reports

## 1. Clinical application <sup>1) 2)</sup>

- ① According to Su Liu, when DMAE compound reaches the target tissue, it has an anti-aging effect by increasing collagen synthesis and improving skin thickness.
- ② Rachel Grossman has found that applying DMAE Gel helps to reduce wrinkles on the forehead, around the eyes and improves the lip shape and skin condition.

## 2. Action in the dermis <sup>2) 3)</sup>

DMAE has the effect of reducing protein cross-linking (characteristic of cell aging) as well as antioxidant effect and cell membrane stabilization. In addition, it slows down the aging of the dermis and controls various cytokines to show anti-inflammatory effects.



### Increase in skin layer thickness

As we age, collagen and skin thickness decrease.

K.A. Tandini et al. confirmed that the overall skin condition was restored by improving the thickness of the dermis with a compound containing DMAE.

Ref. K.A. Tandini (2009). In vivo skin effects of a dimethylaminoethanol (DMAE) based formulation. Pharmazie 64: 818-822

### Skin improvement effect

DMAE improves facial wrinkles, sagging skin and increases lip volume <sup>2)</sup>

Statistical differences <sup>3)</sup> between DMAE [n=105] and placebo (n=51) groups in secondary efficacy parameters following 16 weeks of 3% topical DMAE facial gel application in a double-blind, placebo-controlled trial <sup>[17]</sup>

| Parameter                  | Week2   | Week4   | Week6   | Week12  | Week16  | Week18<br>(2-week regressing phase) |
|----------------------------|---------|---------|---------|---------|---------|-------------------------------------|
| Forehead lines             | p<0.068 |         | p<0.023 | p<0.012 | p<0.068 | p<0.012                             |
| Under-eye dark circles     |         | p<0.08  |         |         |         |                                     |
| Increased lip thickness    | p<0.034 | p<0.058 | p<0.021 | p<0.130 | p<0.023 | p<0.024                             |
| Increased lip shape        |         | p<0.05  | p<0.05  | p<0.050 |         | p<0.073                             |
| Improved sagging neck skin |         |         |         |         |         | p<0.088                             |

a) Values of p<0.05 appear in bold and indicate statistically significant differences in the DMAE group compared with the placebo group; values of p>0.05 but ≤0.1 indicate trends in improvement with DMAE facial gel application compared with placebo gel application.

1) Ref. Su Liu(2014). Effects of Dimethylaminoethanol and Compound Amino Acid on D-Galactose Induced Skin Aging Model of Rat. The Scientific World Journal:507351

2) Ref. Rachel Grossman(2002). The Role of Dimethylaminoethanol in Cosmetic Dermatology. Am J Clin Dermatol; 6 (1): 39-47

3) Ref. G. Morissette, L. Germain (2007). The antiwrinkle effect of topical concentrated 2-dimethylaminoethanol involves a vacuolar cytopathology. Br J Dermatol;156(3):433-9.

# Ensuring Quality

## Dermatology Tested

This is a test of application to the human skin to evaluate the safety of Dr.DMAE Solution Essence Purple in a total of 32 subjects.

It was judged that

Dr.DMAE Solution Essence Purple fell under “the category of non-irritating.”



Test report of application to the human skin

of the test result

the human skin to evaluate the safety of Dr.DMAE Solution Essence

|             |   |            |         |
|-------------|---|------------|---------|
| Test sample | Dr.DMAE Solution Essence  | Sample No. | EDMS001 |
| Test method | <p>1. Subject: 32 adult males and females who meet the exclusion criteria, and do not fall under the exclusion criteria</p> <p>2. Test area: The back of subjects</p> <p>3. Evaluation method: Close patches that were loaded with test by 20 µL were applied for 24 hours, an observed at 30 minutes, 24 hours and 48 h the patch.</p> |            |         |
| Test result | <p>A total of 32 subjects participated in all the and the Human skin patch test for safety was a total of four days. As a result, the skin Solution Essence was 0.00 Based on the non-irritant criteria of 0.00-0.75, all samples were judged to be non-irritating.</p>   |            |         |

\* Regarding this result, we submit a report on the samples provided by the applicant.

### Application to the Human Skin

- Test period : 2021.05.25 - 2021.07.14
- Participant : 32 females
- Test site : KTR(Korea Testing&Research Institute)
- Test results : Non-irritating

A total of four days. As a result, the skin reaction of Dr.DMAE Solution Essence was 0.00 Based on the non-irritant criteria of 0.00-0.75, all samples were judged to be non-irritating.

Ref. Test Report of Application to the Human Skin by KTR

| Type of Conducted Test      | Results      | Test Report Date | Test Site |
|-----------------------------|--------------|------------------|-----------|
| Limit Test for Heavy Metals | Not Detected | 2021.07.23       | KTR       |
| Allergy Screening Test      | Allergy Free |                  |           |

### Dr.DMAE Purple Effects





### Ingredients

DMAE(Dimethylaminoethanol)  
PDRN(Polydeoxyribonucleotide)  
HA(Hyaluronic Acid)  
  
Endotoxin Unit: 0.1 EU/ml or less\*\*  
\*Molecular weight: 2.5 million kDa

### Main effects

- DMAE(Dimethylaminoethanol) for facial skin tightening and pore minimizing
- PDRN(Polydeoxyribonucleotide) for quick skin healing
- Non-crosslinked hyaluronic acid restores skin moisture and elasticity

### How to use

- Take an appropriate amount of this product and apply it gently on the face.

### Storage

Keep it stored in room temperature(1~30°C) and out of direct sunlight

### Package

1 Box: 3.5mLX5vials

### Precautions

1. Don't apply it in the infected wounds (wounds that turn red, have a greasy, feverish or edema)
2. If you have rash, fever, allergic reaction or infection symptoms while using this product, do not use it and consult a specialist
3. In case of hypersensitivity to the products ingredients, please use it under the direction of a doctor.



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