

## Moisturizing effect of Hymagic™-4D

The moisturizing effect of 4D Hyaluronic Acid (Hymagic-4D) was carried out using skin hydration and skin TEWL.

### 1. Method

Test the skin hydration and skin TEWL of lotion containing Hymagic-4D or HA in 10 hours.

### 2. Materials

Samples: The only difference between control and test samples was the lotion of test samples contained 2% Hymagic-4D (*Solution*) or 0.05% HA (*Powder*;  $M_w$ : 1000k~1800kDa) .

Instruments: Corneometer CM825, Tewanmeter TM300.

### 3. Volunteers

30 healthy women of 20~45 years old.

### 4. Operation

$3.0 \pm 0.1$  mg/cm<sup>2</sup> of control and test samples were respectively applied on the left and right forearm ( $4 \times 4$ cm<sup>2</sup>).

The skin moisture of test area was measured before and after application of samples.

### 5. Results

#### 5.1 Skin hydration

Results show that, after 1hr application, the skin hydration of Hymagic-4D group is increased quickly by 155.1%, compared with 108.3% of HA group and 71.5% of control group. After 2hrs application, the skin hydration of Hymagic-4D group is increased quickly by 127.5%, compared with 84.4% of HA group and 33.6% of control group.

Table 1. The comparison of skin hydration

	Time	Control	2%Hymagic-4D	0.05%HA
Corneometer (%)	0h	21.46	21.22	21.32
	1h	36.81	54.13	44.41
	2h	28.67	48.27	39.31
	4h	25.27	42.25	33.15
	6h	23.81	36.28	28.76
	8h	23.04	30.19	24.17

## 5.2 Skin TEWL.

Results show that, after 1hr application, the skin TEWL of Hymagic-4D group is decreased quickly by 32.3%, compared with 25.3% of HA group and 21.3% of control group. After 2hrs application, the skin hydration of Hymagic-4D group is decreased quickly by 45.5%, compared with 30.9% of HA group and 19.2% of control group.

Table2. The comparison of skin TEWL

	Time	Control	2%Hymagic-4D	0.05%HA
TEWL (g/hm <sup>2</sup> )	0h	9.12	9.14	9.14
	1h	7.18	6.19	6.83
	2h	7.37	4.98	6.31
	4h	8.44	6.05	7.45
	6h	8.89	6.81	8.25
	8h	9.01	7.51	8.97

## 6. Conclusion

In a word, Hymagic-4D, the molecular sponge for water-replenishing and water retention, can provide instantly three-dimensional moisturizing efficacy, and keep skin hydrated continuously while improving skin moisture enhancement from inside and making skin smooth and elastic.