

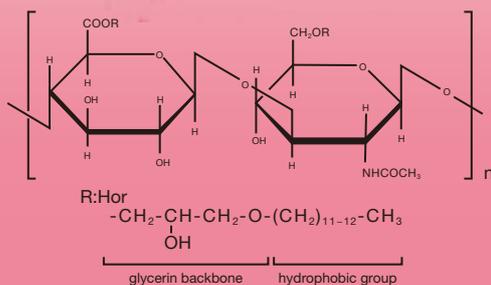
Hyalorepair®

Brand new hyaluronic acid featuring barrier function recovery in the skin

PAT. JP4845071 B2

PAT.P. WO2011/102462 A1

Hyalorepair®



- * Chemically modified to have hydrophobic group through glycerin backbone
- * In addition to "Moisture retention" function, it also has "Barrier function recovery" property
- * Repairs out-balanced lamellar layer to acts as barrier to prevent skin moisture from evaporation
- * Improves damaged skin to healthy skin condition



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Hyalorepair[®] Hyaluronic acid featuring “Barrier Function Recovery”

1. in vitro test / Confirmation of lamella structure formation

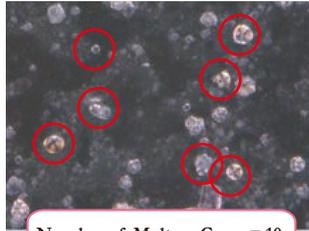
Microscope photographing

With water



Number of Maltese Cross = 1
(Average)

With Hyalorepair[®]



Number of Maltese Cross = 10
(Average)



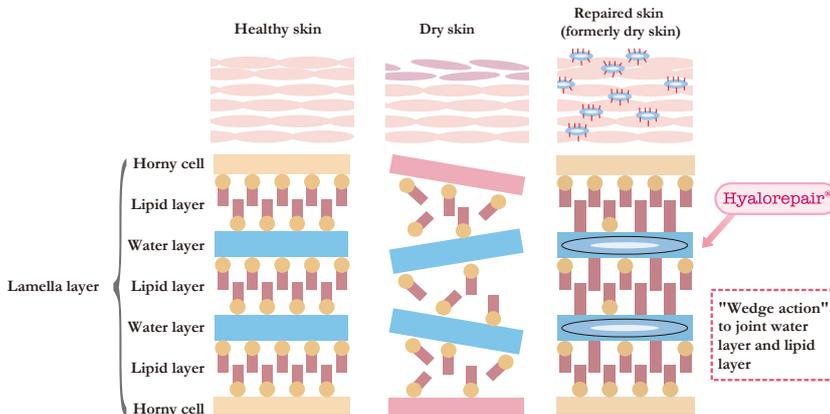
Test method

Replicated intercellular condition of dry skin

Test result

Lamella structure being confirmed
(Circled in red)

2. Approach to Barrier function recovery mechanism (including hypothesis)

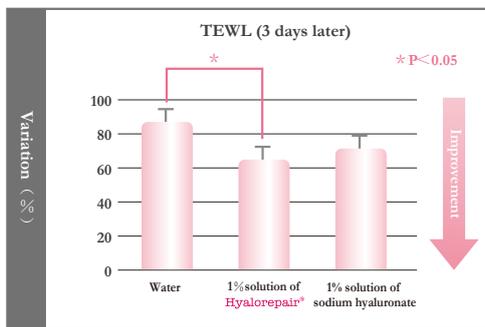


Healthy skin: Lamellar layer acts as barrier to prevent skin moisture from evaporation.

Dry skin: Out-balanced lamellar layer causes disorder of barrier function, resulting in dry skin by water evaporation.

Repaired skin: Hyalorepair[®] repairs out-balanced lamellar layer. When it's repaired, the barrier function gets recovered, which helps skin to retain moisture.

3. Recovery of the barrier function



Measurement of transepidermal water loss (TEWL) (※)

Test result

Hyalorepair[®] prevents skin moisture from evaporation
(Presented at the Pharmaceutical society of Japan, March 2012.)

4. Improvement of damaged skin



Observation by microscope photographing (※)

Test method

Damage the forearm skin with mixed solution of acetone and ether. Apply 1% solution of Hyalorepair[®] everyday to the damaged skin before bedtime (※) Testing method of 3(left) and 4(here) are the same.

Test result

It was confirmed that Hyalorepair[®] improved the moisturization of the skin.
(Presented at the Pharmaceutical society of Japan, March 2012.)