

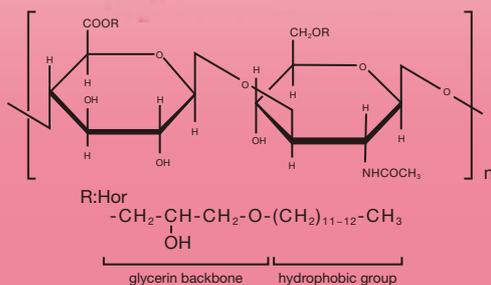
# Hyalorepair®

## 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<sup>®</sup> Hyaluronic acid featuring “Barrier Function Recovery”

## 1. in vitro test / Confirmation of lamella structure formation

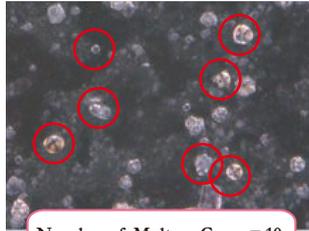
Microscope photographing

With water



Number of Maltese Cross = 1  
(Average)

With Hyalorepair<sup>®</sup>



Number of Maltese Cross = 10  
(Average)



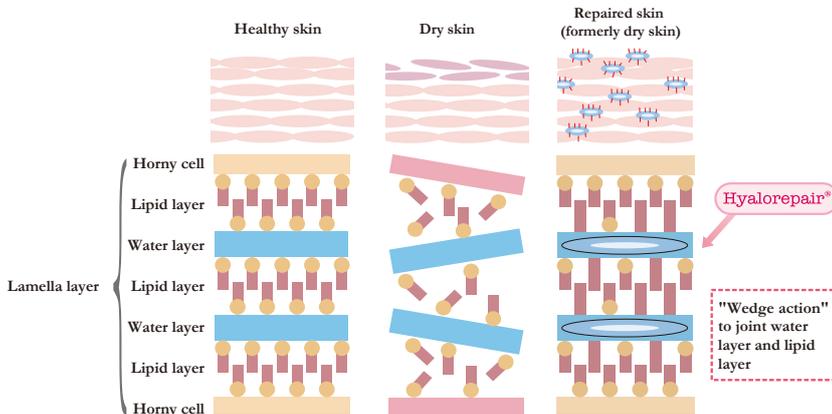
*Test method*

Replicated intercellular condition of dry skin

*Test result*

Lamella structure being confirmed  
(Circled in red)

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

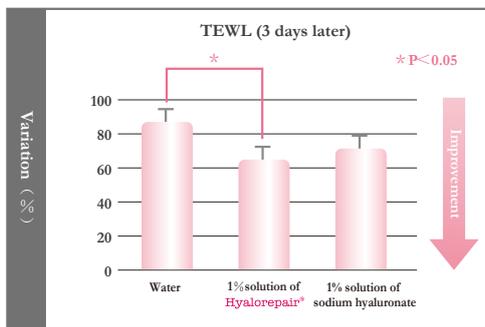


Healthy skin: Lamellar layer acts as barrier to prevent skin moisture from evaporation.

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

Repaired skin: Hyalorepair<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> improved the moisturization of the skin.  
(Presented at the Pharmaceutical society of Japan, March 2012.)