



# Venture Chemical Ltd.

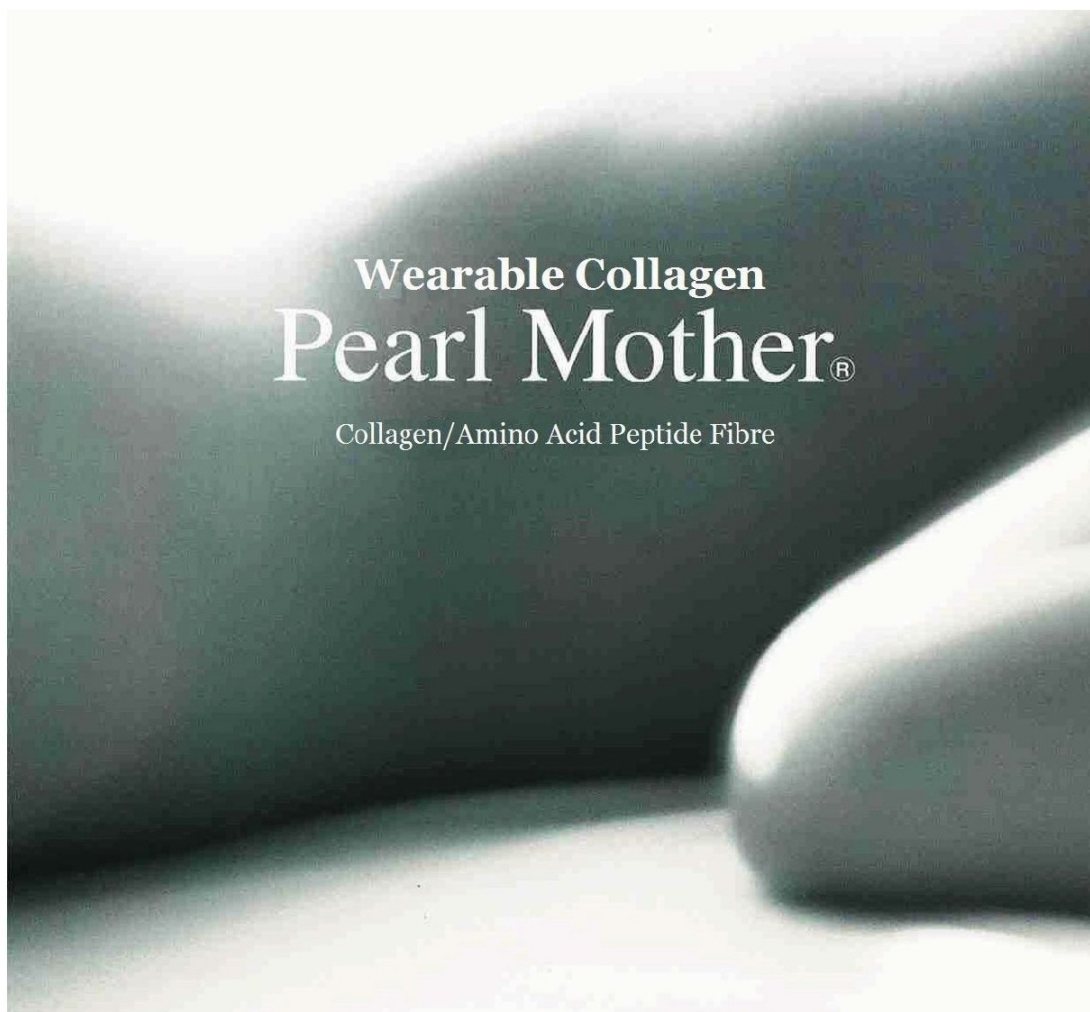
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## Wearable Collagen

# Pearl Mother® -- Collagen/Amino Acid Peptide Fibre

The fibre material nurturing the mechanism to occur at an intercellular level, developed with desire for protecting your health and skin from unfriendly environment involving UV rays, dried and polluted air

Pearl Mother® is composed of fibrous collagen, amino acid sequence of peptide. Collagen, served as connective tissue between cells, has a curious function that enhances skin texture as repairing and reproducing lipid repeatedly. Pearl Mother® is skin-friendly fibre, being wearable to sustain skin's original function as a supplemental material for the beauty of modern women. Development of Pearl Mother® involving biological mechanism that occurs at an intercellular level is originated with desire for protecting human's health and skin from unfriendly environment involving UV rays, dried and polluted air.

Structure of fibrous collagen, connective tissue between cells



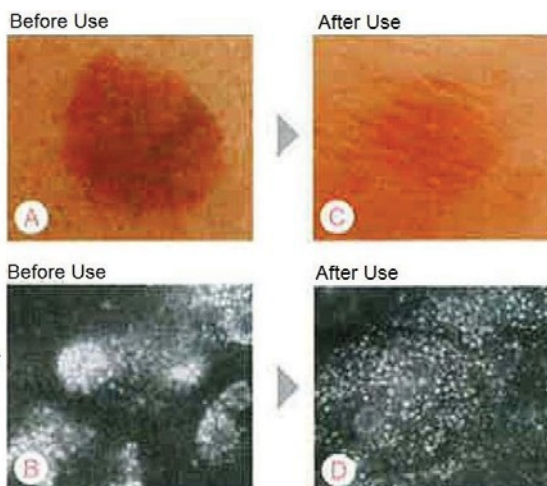
Collagen accounts for about 6 % of the weight of mammals and makes up about 1/3 of the whole-body protein content.

- **Wearable collagen for skincare**  
Keep your skin fresh and healthy as retarding the generation of melamine and improving skin transparency
- **Improving Elasticity**  
Collagen, promoting intercellular connection, develops skin elasticity
- **Maintaining Moisture-retaining property**  
The fibre has moisture-retaining property to keep your skin watery
- **UV shield property to protect your skin**  
The fibre has UV shield property to protect your skin from the natural enemy to skin
- **Odour eliminating property to refresh your skin**  
The fibre may decompose the source of offensive odour

## Pathological Study Data

### Diagram 1.

Spot (keratosis) on the skin surface (upper) and melamine layer in the skin (lower) after exposed a part of subject's upper arm to sunlight (UV radiation).



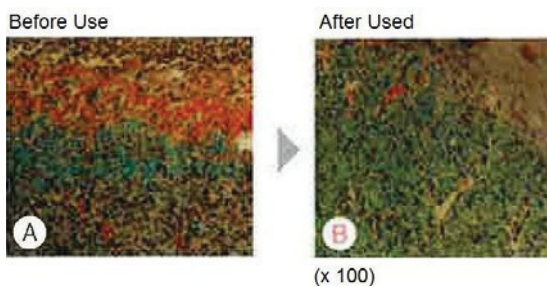
Eczema had been broke out on a part of upper arm of a subject 60 days ago, and it had not been cured by applying an ointment for 2 weeks. After that, it had turned to a brownish spot, deepened in color, and finally turned to

papular keratosis (18 – 22 mm diameter as per diagram 1-A). It had been identified as a spot caused by exposure to UV rays. The affected part had been observed by using in-vivo confocal laser microscope and lumps of accumulated melamine had been detected on the basement membrane layer (shiny spots on diagram 1-B).

The affected part had been swaddled with knitted cloth containing Pearl Mother®. As the result of observing the transition for 28 days, keratotic papule had disappeared (diagram 1-C). The spot had been then almost invisible, being paled as shrinking the other colour area (7 – 9 mm in diameter). Besides, the same part been observed by using in-vivo confocal laser microscope and melamine component (shiny spots on diagram 1-D) had been scattered which was equivalent to state of a normal basement membrane layer.

### Diagram 2.

Collagen formation in the subcutaneous tissue and histopathological observation through Massan's trichrome staining



Histopathological observation was carried out by using Massan's trichrome staining method to dye collagen in green or blue distinguishingly. Diagram 2-A shows a segment of the subcutaneous tissue before using cloth containing Pearl Mother® where little distribution of collagen coloured in green and blue was seen, and no clear boundary was seen between epidermis, dermis and basement membrane. On the other hands, diagram 2-B shows the same but after using cloth containing Pearl Mother® where overall distribution colored in green and blue was found as well as clear boundary between each layer.

The above pathological study was directed by Takashi Watanabe (MD) by which cloth containing Pearl Mother® performed to remedy damaged skin including the surface and inner part.



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## Quality Specification Data

- Moisture retention

Substrate: 70/30 % spun rayon/polyester

Moisture regain	Moisture retention
15.87 %	91.42 %

Condition: 20°C 65% RH (Av. of 24 hrs.)

Substrate: 100 % nylon filament

Moisture regain	Moisture retention
5.01 %	82.79 %

Condition: 20°C 65% RH (Av. of 24 hrs.)

- UV shield property

Substrate: tubular knitted cloth (white)

42 % Pearl Mother®

42 % Cotton

16 % Polyurethane/nylon

UV shield rate
91.9 %

By spectrophotometer UV3010

Range: 280 – 400 nm

- Odour eliminating property

Substrate: tubular knitted cloth (white)

42 % Pearl Mother®

42 % Cotton

16 % Polyurethane/nylon

Odour (isovaleric acid) eliminating rate
94.3 %

By detecting tube method (gas chromatography)

The above examinations were carried out by Japan Textile Products Quality and Technology Center.

Note: The above data are presented for distributors only, and shall not be presented to general consumers without prior consent.