



Good Quality Comes
From Qualified Materials

SpecPed[®] SC-PT38

Powerful Anti-wrinkle Peptide

Spec-Chem Group
May, 2022

Visualise the results



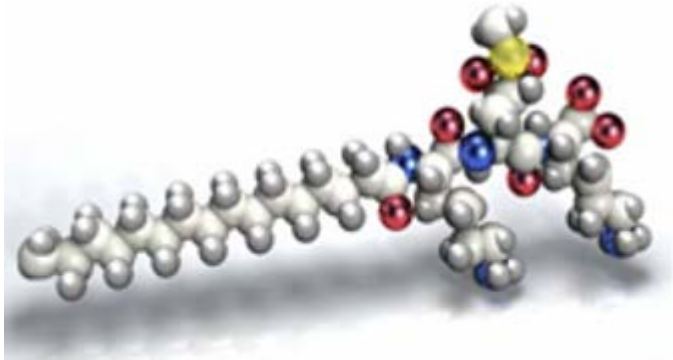


Fig 1. Pal-KMO₂K

- **SpecPed® SC-PT38** is palmitoyl tripeptide-38, a peptide produced from derivatives of the amino acids lysine and methionine sulfone.
- Palmitoyl tripeptide-38 is a matrikine-mimetic compound that regulates cell activity, wound repair and collagen tissue remodeling.
- **SpecPed® SC-PT38** was designed to provide an alternative to hyaluronic acid and collagen injections while supporting an anti-ageing claim. Its active ingredient, Pal-KMO₂K peptide, provides visible, proven filling and anti-wrinkle effects on the epidermis, the dermal-epidermal junction and the dermis, particularly on the forehead and crow's feet.

Action Mechanism

- **SpecPed® SC-PT38 is a powerful anti-wrinkle peptide** that stimulates the synthesis of the 6 major constituents of the matrix and dermal-epidermal junction. With the help of the protein HSP47, it is able to manage the architectural organisation of the molecules, thus allowing for the complete maturation and stabilization of fibres.
- The 6 major constituents play an important role in the skin:
- **Collagen I** –It is the major component of the dermis. With collagen III, it constitutes the most abundant amount of collagen in the tissues (approx 30%) and overall in the dermis (80%). The collagen molecules auto assemble one another in order to form the characteristic fibres of the tissues. Collagen I makes up the cross-linked structure that is able to resist the various physical stresses the skin undergoes.
- **Collagen III** – known as the collagen of youth, collagen III is produced during the early phases of wound healing. Is thought to be partly responsible for skin smoothness. This type of collagen is produced in the earliest phases of wound healing, before type I collagen synthesis initiation. It is mostly found in elastic tissues, including the skin, muscles and blood vessels, and it diminishes with age in favor of collagen I.

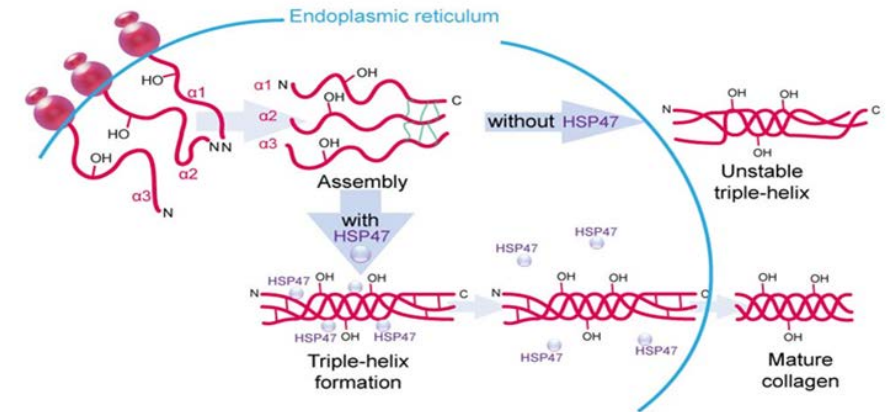


Fig 2. the important role of HSP47 in collagen formation

- **Collagen IV** – is an anchorage protein (that is also a part of Laminin-5) found at the base of the membrane, at the interface of the extracellular matrix of the dermis, as well as the basal layer cells. This has important wound healing stimulation properties, as it interacts with keratinocytes, which induce epidermal cell proliferation immediately after a skin injury.
- **Fibronectin** – are multi adhesive soluble proteins that help attach cells to the various types of collagen. They also have an important function in cell migration and differentiation. A glycoprotein that appears to have a role in the stimulation and acceleration of in vivo tissue repair.
- **Hyaluronic Acid** – Known as an important component responsible for water retention in the tissue, and for regulating cell proliferation and wound healing. Known for facilitating wound repair, hyaluronic acid is thought to improve skin moisture and elasticity. Hyaluronic Acid has a demonstrated ability to promote the delivery of active ingredients to the inner layers of the skin. Its free radical scavenging properties indicate that it may also have a role in UV protection

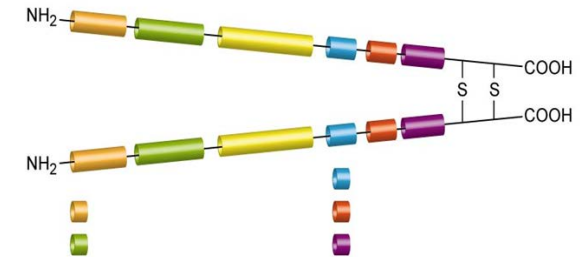


Fig 3. the structure of fibronectin

Action Mechanism

- **Laminin-5** – is an adhesive glycoprotein involved in the healing of injured dermis. Alongside collagens and proteoglycans, laminins are important components of the basement membrane. Laminin-5 anchors the epidermis to the dermis. It also regulates keratinocyte migration, facilitating the healing of injured epidermis.
- **HSP47** – A collagen-specific molecular chaperone exists in the endoplasmic reticulum, specifically binds to the procollagen peptide chain, and participates in the folding, assembly, modification, transport and other processes of procollagen in the endoplasmic reticulum, playing an important role in collagen metabolism and fibrosis pathology.
- **SpecPed® SC-PT38** manages the appropriate structural tissue through chaperone HSP47 to achieve fiber stability and maturation.

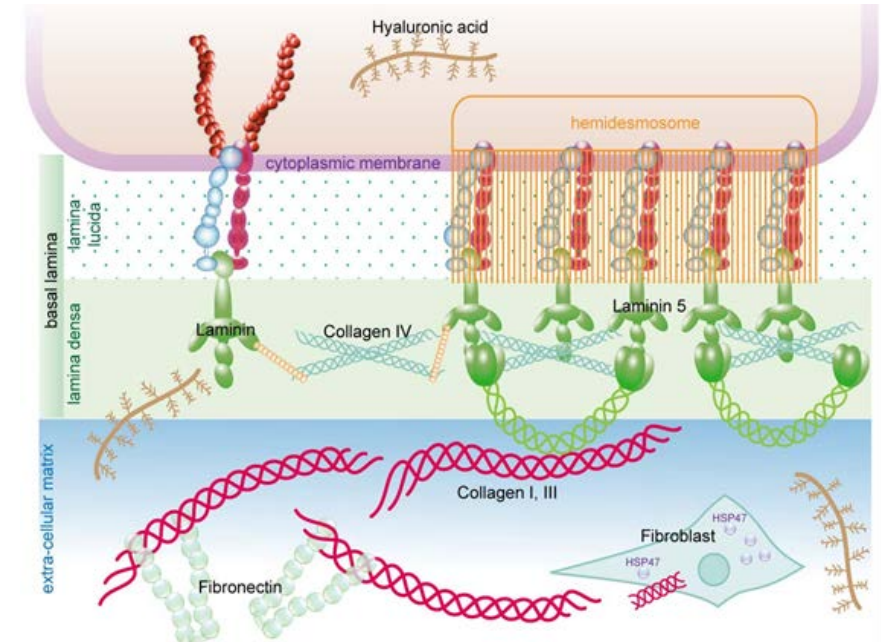


Fig 4. the important role of HSP47 in collagen construction

- The synthesis of 6 major constituents *IN VITRO – EX VIVO*
- Anti-wrinkle efficacy *IN VIVO*



Stimulates the synthesis of 6 major constituents *in vitro*

An in vitro study was carried out on human fibroblasts over a period of 5 days.

The aim of the study was to analyze the efficacy of 2.0% SpecPed® SC-PT38 with regard to the synthesis of 6 major constituents.

Test protocol:

- Subject Human fibroblasts
- Test Product 2% SpecPed® SC-PT38 and placebo
- Application Duration 5 days
- Test Method ELISA, Western blot, Immunolabeling



Fig 5. Collagen I

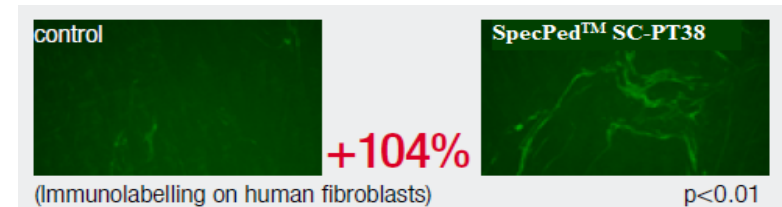


Fig 6. Collagen III

RESULTS: In vitro tests of twice daily applications of a formulation containing 2.0% SpecPed® SC-PT38 for five days found that type I, and III collagens significantly increased ($p<0.01$) by 105% and 104%.

IN VITRO

Stimulates the synthesis of major constituents *in vitro*

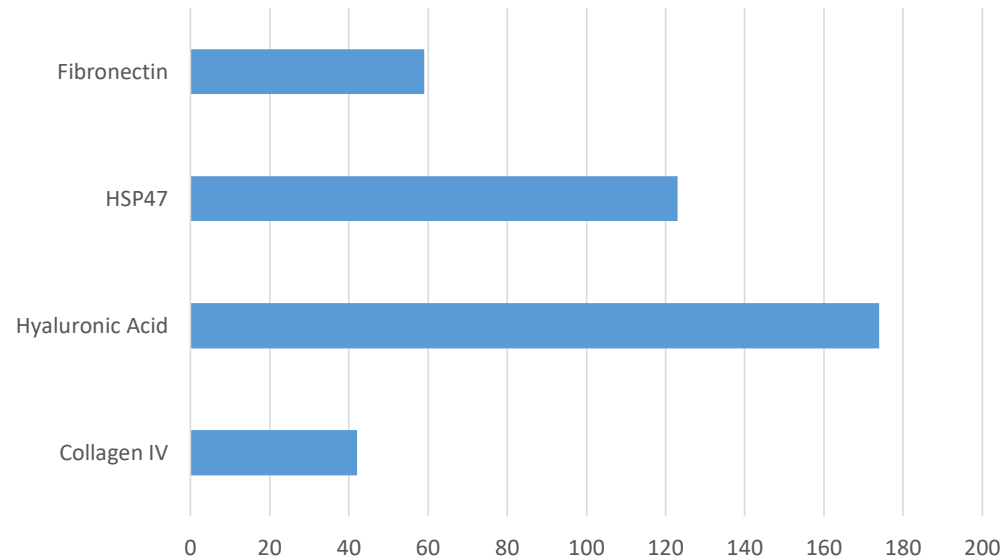


Fig 7. Compositional change, % (p<0.01)

RESULTS: In vitro tests of twice daily applications of a formulation containing 2.0% SpecPed® SC-PT38 for five days found that type collagen IV, fibronectin, HSP47 and Hyaluronic Acid significantly increased (p<0.01) by 42%, 59%, 123% and 174%.

IN VITRO

Stimulates the synthesis of major constituents *in vitro – ex vivo*

An in vitro study was carried out on skin explants over a period of 5 days.

The aim of the study was to analyze the efficacy of 2.0% SpecPed® SC-PT38 with regard to the synthesis of 6 major constituents.

Test protocol:

- Subject skin explants (53 years old)
- Treatment method 2% SpecPed® SC-PT38 and placebo
- Application Duration 5 days
- Test method Immunolabeling



Fig 8. Laminin-5

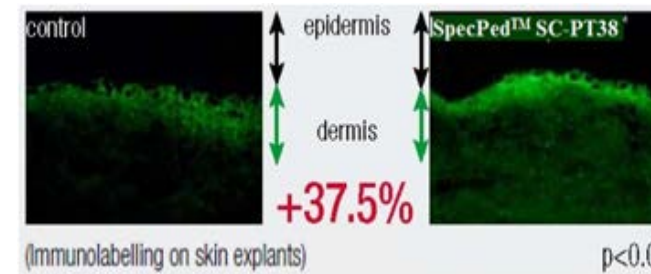


Fig 9. The dermal structure

RESULTS: In vitro tests of twice daily applications of a formulation containing 2.0% SpecPed® SC-PT38 for five days found that laminin-5 significantly increased ($p<0.01$) by 15%, the strength and elasticity of the dermal structure were improved.

IN VIVO

Anti-wrinkle efficacy *in vivo*

An in vivo study was carried out on 25 female volunteers over a period of 2 months.

The aim of the study was to analyze the efficacy of 2.0% SpecPed® SC-PT38 with regard to the reduction of wrinkles in the forehead and the crow's feet by the eyes.

Test protocol:

- Subject the forehead and the crow's feet by the eyes (42-70 years old)
- Treatment method cream containing 2% SpecPed® SC-PT38 and placebo 2x/day
- Application Duration 2 months
- Test method optical measurements
- measured parameters mean wrinkle depth, deepest wrinkle, wrinkle volume, waveness depth, mean roughness

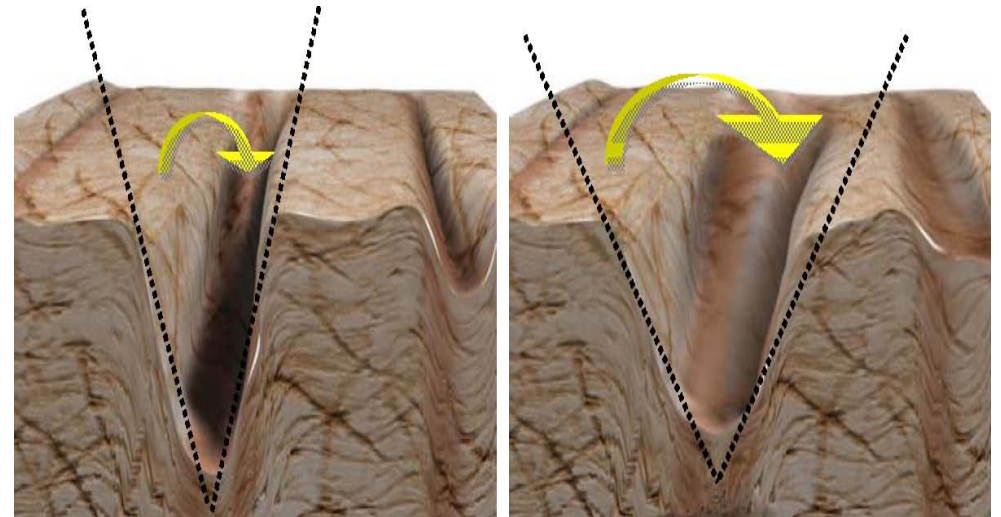
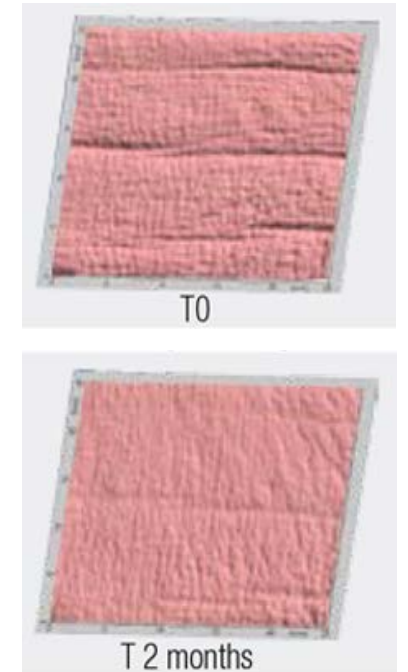


Fig 10. Wrinkle spreading parameter (Angle)

IN VIVO

Results of Wrinkle spreading parameter after 2 months of 2x daily application with 2.0% SpecPed® SC-PT38 vs. placebo:

| Items | Volume (mm ³) | | Roughness (%) | | Deepest wrinkle (µm) | |
|---|---------------------------|-------------|--------------------|-------------|----------------------|------------|
| | T0 | T 2 months | T0 | T 2 months | T0 | T 2 months |
| Average ± standard deviation | 3.12 ± 1.68 | 2.16 ± 1.54 | 1.25 ± 0,92 | 0.90 ± 0.44 | 124 ± 57 | 103 ± 30 |
| Change (%) most significant observation | -31% p=0.055 Æ -100% | | -28% p<0.05 Æ -77% | | -16.3% p<0.05 Æ -62% | |



RESULTS: A 2 months treatment with 2.0% SpecPed® SC-PT38 showed a remarkable improvement of all wrinkle parameters in the forehead. Forehead wrinkle volume and depth decreased by 31 and 16.3%, respectively, and lifting improved by 28%.

IN VIVO

Results of Wrinkle spreading parameter after 2 months of 2x daily application with 2.0% SpecPed® SC-PT38 vs. placebo:

| Items | Volume (mm ³) | | Main wrinkle average depth (%) | | Deep wrinkle (μm) | |
|---|---------------------------|------------|--------------------------------|------------|-------------------|------------|
| | T0 | T 2 months | T0 | T 2 months | T0 | T 2 months |
| Change (%) most significant observation | -21.1% p<0.05 | | -15% p<0.05 | | -28.5% p<0.05 | |



RESULTS: A 2 months treatment with 2.0% SpecPed® SC-PT38 showed a remarkable improvement of all wrinkle parameters in the crow's feet by the eyes. On the crow's feet, wrinkle surface, volume, and maximum depth diminished by 28.5, 21.1, and 15%, respectively.

Product Features

- **SpecPed® SC-PT38** acts as an anti-aging, anti-wrinkle, repairing, smoothing and skin conditioning agent. It fills in wrinkles from the inside, both on the forehead & the crow's feet for a visibly smoother and plumper skin. It stimulates 6 major constituents of the skin matrix & the dermal–epidermal junction (DEJ) and ensures an optimal architecture of the tissue.
- **SpecPed® SC-PT38** is recommended for face/ neck skin care and eye contour care products, prevents and fights against the first signs of ageing.



Product Information & specs

Product No.: 135021

Trade Name: SpecPed® SC-PT38 (0.025%)

INCI name: Palmitoyl Tripeptide-38, Hydroxypropyl Cyclodextrin, Aqua, Caprylyl Glycol, Ethylhexylglycerin, Glycerin, Trehalose

Sequence: Pal-Lys-Met(O₂)-Lys-OH

CAS No.: 1447824-23-8, 128446-35-5, 7732-18-5, 1117-86-8, 70445-33-9, 56-81-5, 6138-23-4

Application: Anti-wrinkle, anti-aging, moisturizing, repairing agents and etc.

Dosage: Daily care: 0.5-3%, Special care: 3-10%

Storage: Cool and dry place, protect from light, storage temperature: 2-8°C.

Shelf life: 2 years

Package: 1kg, 5kg, 25kg

| Items | Specification |
|--|--|
| Appearance | Colorless to pale beige viscous liquid |
| Relative Density (d ₂₀ /20) | 1.205 - 1.325 |
| Refractive index (n ₂₅) | 1.435 - 1.555 |
| Peptide content | 0.02-0.027% |
| Water content | 15-25% |
| Aerobic plate count | ≤100 cfu/mL |
| Yeast & mould | ≤100 cfu/mL |

*contact Specchem sales representative for the updated specs. and technical documents.

Efficacy Claims

- Anti-aging Agents
- Anti-stress / Relaxing Agents
- Anti-wrinkle Agents
- Conditioning Agents
- Repairing Agents
- Repairing
- Relaxing
- Restructuring
- Smoothness

Application Guide

- **Method of addition**
 - Liquid, easy to use
 - Add it in the final stage of production below 40°C
- **Recommended use level**
 - Daily care: 0.5-3%
 - Special care: 3-10%



- **Ingredients**

- Aqua (Water, Eau), Glycerin, Propanediol, Caprylic/Capric Triglyceride, C12-16 Alcohols, Squalane, Ethylhexyl Palmitate, Albizia Julibrissin Bark Extract, Benzyl Alcohol, Hydrogenated Lecithin, Palmitic Acid, Isododecane, Sodium Polyacrylate Starch, Glyceryl Stearate, Peg-100 Stearate, Sucrose Palmitate, Polyacrylate-13, Behenyl Beeswax, Hydrogenated Polydecene, Stearyl Beeswax, Chlorphenesin, Disodium Edta, Parfum (Fragrance), Polyisobutene, Glyceryl Linoleate, Prunus Amygdalus Dulcis (Sweet Almond) Oil, Sodium Chloride, Ci 77891 (Titanium Dioxide), Hydrogenated Vegetable Oil, Sodium Hydroxide, Mica, Trihydroxystearin, Polysorbate 20, Hydroxypropyl Cyclodextrin, Sorbitan Isostearate, Silica, Sodium Hyaluronate, Panthenol, Crithmum Maritimum Extract, Glucose, Phenoxyethanol, Dipeptide Diaminobutyroyl Benzylamide Diacetate, Sodium Benzoate, Citric Acid, Potassium Chloride, Potassium Sorbate, Calcium Chloride, Sigesbeckia Orientalis Extract, Magnesium Sulfate, Glutamine, Sodium Phosphate, Biotinoyl Tripeptide-1, **Palmitoyl Tripeptide-38**, Ascorbic Acid, Sodium Acetate, Tocopherol, Lysine Hcl, Arginine Hcl, Alanine, Histidine Hcl, Valine, Leucine, Threonine, Isoleucine, Tryptophan, Phenylalanine, Tyrosine, Glycine.



- **Ingredients**

- AQUA, GLYCERIN, DICAPRYLYL ETHER, BUTYLENE GLYCOL, DICAPRYLATE/DICAPRATE, CAPRYLIC/CAPRIC TRIGLYCERIDE, DI-C12-13 ALKYL MALATE, PENTYLENE GLYCOL, TREMELLA FUCIFORMIS (MUSHROOM) EXTRACT, FERRIC HEXAPEPTIDE-35, HYDROXYPROPYL CYCLODEXTRIN, **PALMITOYL TRIPEPTIDE-38**, THERMUS THERMOPHILUS FERMENT, BOSWELLIA SERRATA (INDIAN FRANKINCENSE) GUM, GLYCYRRHIZA GLABRA (LICORICE) ROOT EXTRACT, CERAMIDE NP, TOCOPHEROL, SUCROSE STEARATE, DEXTRAN, HYDROGENATED PALM GLYCERIDES CITRATE, DIPROPYLENE GLYCOL, GLYCERYL STEARATE CITRATE, ETHYLHEXYLGLYCERIN, ARGININE, ACRYLATES/C10-30 ALKYL ACRYLATE CROSSPOLYMER, PHENOXYETHANOL, POTASSIUM SORBATE, ALCOHOL, SODIUM PHYTATE, XANTHAN GUM, PARFUM



- **Ingredients**

- Water/Aqua/Eau, Propanediol, Squalane, Glycerin, Cetyl Ethylhexanoate, Aloe Barbadensis Leaf Juice, Ammonium Acryloyldimethyltaurate/VP Copolymer, Polyester-5, Sodium Hyaluronate, Avena Sativa (Oat) Kernel Flour, Sodium PCA, Panthenol, Ceramide NP, Arnica Montana Flower Extract, Laminaria Digitata Extract, Centella Asiatica Extract, **Palmitoyl Tripeptide-38**, Niacinamide, Acetyl Glucosamine, Arginine, Aspartic Acid, PCA, Glycine, Alanine, Serine, Valine, Proline, Threonine, Isoleucine, Phenylalanine, Histidine, Sodium Lactate, Caprylhydroxamic Acid, Glyceryl Stearate, Disodium EDTA, Sodium Hydroxide, Polyglyceryl-3 Methylglucose Distearate, Sodium Benzoate, Citric Acid, Hydroxypropyl Cyclodextrin, Xanthan Gum, Potassium Sorbate, 1,2-Hexanediol, Propylene Glycol.

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20 ml

- **Ingredients**

- Water, Glycerin, Methylpropanediol, Pentylene Glycol, Propanediol, 1,2-Hexanediol, Zinc PCA, Ammonium Acryloyldimethyltaurate/VP Copolymer, Caprylic/Capric Triglyceride, Betaine, Butylene Glycol, Adenosine, Xanthan Gum, Cleome Gynandra Leaf Extract, Pistacia Lentiscus (Mastic) Gum, Ethylhexylglycerin, Hydrogenated Lecithin, Anthemis Nobilis Flower Extract, Melia Azadirachta Leaf Extract, Hydroxypropyl Cyclodextrin, Tromethamine, Phenethyl Alcohol, Melia Azadirachta Flower Extract, Coccinia Indica Fruit Extract, Solanum Melongena (Eggplant) Fruit Extract, Aloe Barbadosensis Flower Extract, Allantoin, Caffeine, Ocimum Sanctum Leaf Extract, Curcuma Longa (Turmeric) Root Extract, Corallina Officinalis Extract, **Palmitoyl Tripeptide-38**, Tocopherol



- **Ingredients**

- Water (Aqua), Glycerin, PEG-8 Dimethicone, Glyceryl Polymethacrylate, Butylene Glycol, Polysorbate 20, Sodium Hyaluronate, Propylene Glycol, Hydrolyzed Vegetable Protein, Adenosine Triphosphate, Sodium Chondroitin Sulfate, Palmitoyl Oligopeptide, Dipeptide-2, Palmitoyl Tetrapeptide-7, Dipeptide Diaminobutyryl Benzylamide Diacetate, Acetyl Octapeptide-3, Palmitoyl Tripeptide-5, **Palmitoyl Tripeptide-38**, Acetyl Hexapeptide-30, Cyclotetrapeptide-24 Aminocyclohexane Carboxylate, Butyryl Pentapeptide-24, Palmitoyl Tripeptide-37, Palmitoyl Hexapeptide-19, Acetyl Tetrapeptide-2, Tetrapeptide-30, Macrocystis Pyrifera (Kelp) Extract, Hydrolyzed Wheat Protein, Centella Asiatica Extract, Echinacea Purpurea Extract, Imperata Cylindrica Root Extract, Spiraea Ulmaria Flower Extract, Centella Asiatica Extract, Camellia Sinensis Leaf Extract, Leucine, Valine, Tyrosine, Arginine, Lysine, Hesperidin Methyl Chalcone, Phenoxyethanol, Caprylyl Glycol, Ethylhexylglycerin, Hexylene Glycol, Acrylates/C10-30 Alkyl Acrylate Crosspolymer, PEG-8/SMDI Copolymer, Arginine, Ectoin, Lecithin, Hydroxypropyl Cyclodextrin, Steareth-20, PVP, Alcohol, Triethanolamine, Carbomer, Disodium EDTA.



- **Ingredients**

- Aqua, Glycerin, Butylene Glycol, Pentaerythrityl Tetraethylhexanoate, Simmondsia Chinensis Seed Oil, Dimethicone, Butyrospermum Parkii Butter, Sorbitol, Squalane, Hydrogenated Castor Oil Isostearate, Mangifera Indica Seed Butter, Panthenol, Trehalose, Pseudoalteromonas Ferment Extract, Caprylic/capric Triglyceride, Octyldodecyl Myristate, Cetyl Alcohol, Polysorbate 60, Stearyl Alcohol, Bis-behenyl/isostearyl/phytosteryl Dimer Dilinoleyl Dimer Dilinoleate, Capparis Spinosa Fruit Extract, Hydroxyethyl Acrylate/sodium Acryloyldimethyl Taurate Copolymer, Stearic Acid, Beeswax, Dimethyl Isosorbide, Glyceryl Stearate, Cappaphycus Alvarezii Extract, Peg-100 Stearate, C30-45 Alkyldimethylsilyl Polypropylsilsesquioxane, Sorbitan Stearate, Tocopherol, Pentaerythrityl Tetra-di-t-butyl Hydroxyhydrocinnamate, Sigesbeckia Orientalis Extract, Citrus Aurantium Amara Peel Oil, Lactobacillus Ferment, Sodium Citrate, Radosia Rubescens Extract, Decarboxy Carnosine Hcl, Dipotassium Glycyrrhizate, Sesamum Indicum Seed Extract, Methylglucoside Phosphate, Sea Water, Adenosine, Sorbitan Isostearate, Arachidyl Alcohol, Disodium Edta, Caprylyl Glycol, Lavandula Angustifolia Flower, Copper Lysinate/proline, Hydroxypropyl Cyclodextrin, Sodium Hyaluronate, Tetrahexyldecyl Ascorbate, **Palmitoyl Tripeptide-38**, Acetyl Tetrapeptide-2, Dextran, Phenoxyethanol, Sodium Salicylate, Sodium Benzoate, Potassium Sorbate, Limonene

Thank you for your attention!

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