



Good Quality Comes  
From Qualified Materials

## SpecPlex™ PCalm —First-Aid for skin

Multilevel and all-dimensional relieving,

from the outside to the inside,

Help restore skin balance

Intervention and prevention of neurogenic inflammation

(For Customer Only)

Spec Chem 2020.5.11



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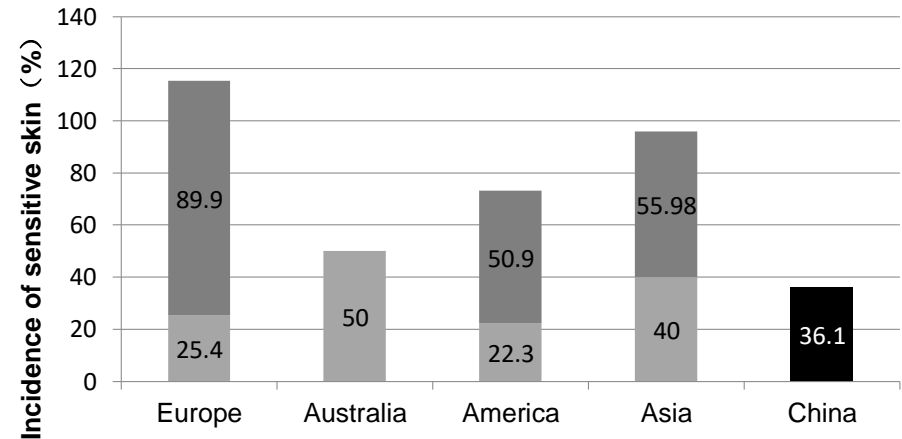
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# 1—Development Background of SpecPlex™ PCalm

**Sensitive skin** refers specifically to a high-responsive state of the skin that occurs under physiological or pathological conditions, mainly on the face. The clinical manifestations are as follows: when stimulated by physical, chemical, mental and other factors, the skin is prone to appear subjective symptoms such as heat, tingling, pruritus and tightness, with or without objective signs such as erythema, scales and telangiectasia.

According to the data disclosed by the Chinese journal of dermatovenerology, the incidence of sensitive skin in Asian women is 40% ~ 55.98%, among which, Chinese women reach 36.1%, that is to say, one out of every three Chinese women is sensitive muscle.(inherent needs);In addition, the external demand caused by the external causes of "mask face" under the epidemic situation.

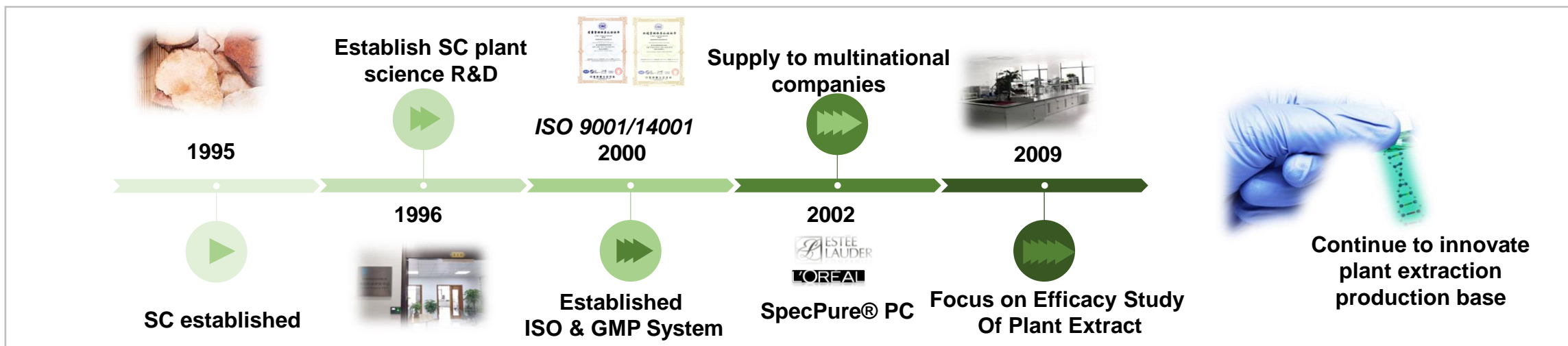
### Global incidence of skin sensitivities



Specially designed for sensitive muscle brand rise and market demand rise!

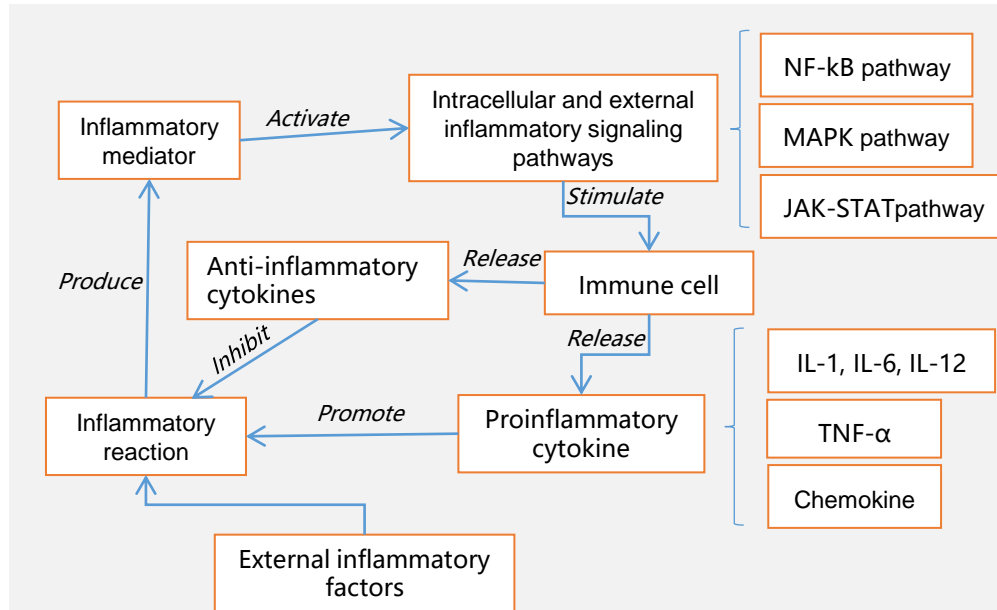
# 1—Development Background of SpecPlex™ PCalm

**Spec Chem Group**, since founded, had discovered the advantages of plant extracts in cosmetics, has been developing natural plant extracts for more than 20 years.



# 1—Development Background of SpecPlex™ PCalm

## Anti-inflammatory and Anti-allergic Mechanism:



\*Mitogen-activated protein kinase (MAPK) , an important transmitter of signals from the cell surface to the inside of the nucleus, is a group of serine-threonine protein kinases that can be activated by different extracellular stimuli, such as cytokines, neurotransmitters, hormones, cellular stress and cell adhesion.

\*Nuclear factor-kB (NF-kB) is an important intracellular Nuclear transcription factor. It is involved in the body's inflammatory response, immune response, can regulate cell apoptosis, stress response.

\*Non-receptor tyrosine kinase family (JAK)- signal transducers and transcriptional activators (STAT)

## Bioactive peptides generally fight inflammation and sensitivity in the following three main ways:

### ➤ Regulation of inflammatory cytokines

By regulating the secretion of cytokines, inhibiting the synthesis and release of pro-inflammatory factors, increasing the expression of anti-inflammatory factors, thereby reducing the allergic reactions induced by inflammatory factors. Interleukin (IL-1) and tumor necrosis factor (TNF) work in concert.

### ➤ Inhibit the synthesis and release of inflammatory mediators

The chemical factors involved in and mediating inflammatory anaphylaxis become chemical mediators or inflammatory mediators. According to their biochemical characteristics, they can be divided into: vasoactive amines, vasoactive peptides, complement component fragments, lipid mediators (chronic inflammation), cytokines, chemokines (chronic inflammation) and proteolytic enzymes, such as mast cell-histamine .

### ➤ Regulation of inflammatory signaling pathways

When the cell is stimulated, NF-kB nuclear factor-kB will bind to the corresponding sequence and start the transcription of relevant genes, which will promote the release of cytokines. Moreover, cytokines can further activate NF-kB and amplify the inflammation. Many bacteria will bind to the receptors on the surface of the cell membrane to activate NF-kB.

Palmitoyl tripeptide-8 (Powder: **SpecPed® PT8P**/Solution: **SpecPed® Sensi 8**) : Palmitoyl tripeptide-8 can effectively inhibit and regulate neuroinflammation, and the tripeptide structure is connected to the structure of lipid palmitoyl, which has better lipophilic permeability and can relieve sensitive and Inflammatory stimulation.

## 2—Product Information of SpecPlex™ PCalm

<b>Product No.:</b>	160045
<b>Product Name:</b>	<b>SpecPlex™ PCalm</b>
<b>Active ingredients</b>	Poria Cocos Sclerotium Extract/Portulaca Oleracea Extract/
<b>(INCI Name):</b>	Palmitoyl tripeptide-8/Dipotassium glycyrrhizate
<b>Application:</b>	Anti-inflammatory, Anti-allergy, Soothing, Calming, Stress skin Recommended for cream, lotion, essence and other cosmetics.
<b>Dosage:</b>	0.5-5.0% (common use), 5.0-10.0% (special use), It is recommended to add below 50℃ at the last step of the formulation.
<b>Storage:</b>	Store in a cool, ventilated place. Keep container tightly closed. Long- term storage: 2 ~ 8℃
<b>Shelf life:</b>	2 years
<b>Package:</b>	Customization

Items	Specification
Appearance	Clear liquid
Colour	Pale yellow
Relative density	0.980~1.030
Refractive index	1.310~1.370
Palmitoyl Tripeptide-8	≥100ppm
Aerobic plate count	≤100cfu/g
Yeasts & moulds	≤100cfu/g

**Water-soluble, easy to add, no bad compatibility problems.**

## 2—Product Information of SpecPlex™ PCalm

### Features of SpecPlex™ PCalm:

It is a skin-friendly anti-sensitivity soothing material based on Poria Cocos Sclerotium Extract and biological anti-inflammatory peptide. It can heal at multiple levels, from the skin surface to deep, restore the skin balance, intervene and prevent neurogenic inflammation by down-regulating PAR2-activated Il-6, activate corticosteroids, and effectively inhibit sodium hyaluronate enzyme. Therefore, SpecPlex™ PCalm is suitable for dry sensitive, allergy-induced red skin, itchy skin, damaged skin barrier, and urban pressure skin, which can be anti-sensitive and soothing, calm and repair, and anti-itch and moisturizing.

- ✓ Herbaceous concept, natural plant nourishing
- ✓ With bioactive peptides, high bioavailability
- ✓ Excellent Multilevel & all-dimensional relieving
- ✓ Anti-inflammatory, Moisturizing & Repairing
- ✓ From the outside to the inside, Help restore skin microbiome balance
- ✓ Intervention and prevention of neurogenic inflammation



## 2—Product Information of SpecPlex™ PCalm

### —How does sensitive skin perceive irritation and allergies?

The invasion of the external environment, such as ultraviolet radiation, pollution, cold and heat stimulation, etc., produces neural mediators (Such as the neurotransmitter neuropeptide P substance).

Pro-inflammatory response - release of pro-inflammatory factors; vasodilation; edema; rash.

Damaged skin barrier-Hyaluronidase is active; dry skin itch; the expression of related proteins was affected ( Aquaporin3、 Filaggrin、 Caspase-14) 。

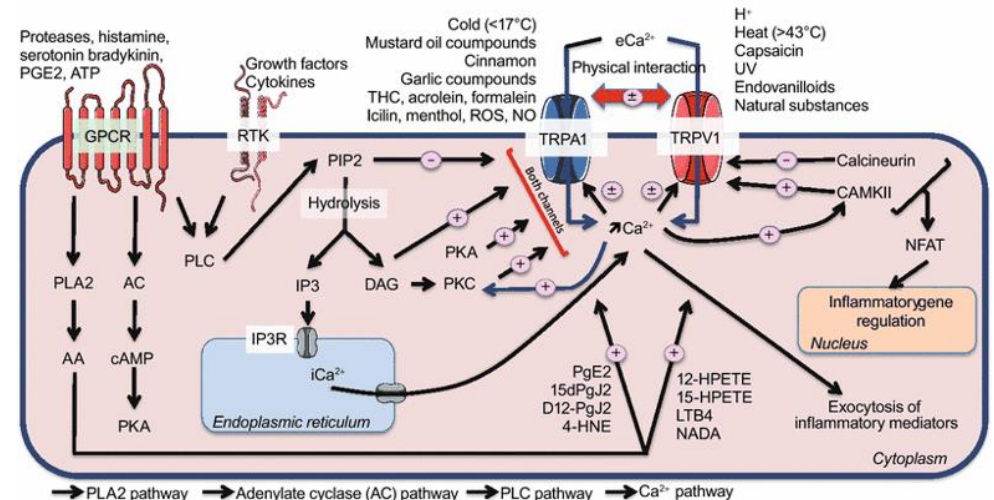
Short-term symptoms:Skin irritation, itching and tingling; Long-term consequences: premature aging.

### The effect mechanism-How does SpecPlex™ Pcalm act as an anti-allergic and soothing agent?

Reduce the release of neurotransmitter neuropeptide substance P.

Repair skin barrier - inhibit hyaluronidase, increase skin moisture; Enhanced protein expression ( Aquaporin3、 Filaggrin、 Caspase-14) 。

Effect - Short term:prevent and reduce irritation; Effect - Long term:repair the skin,maintain healthy skin condition.



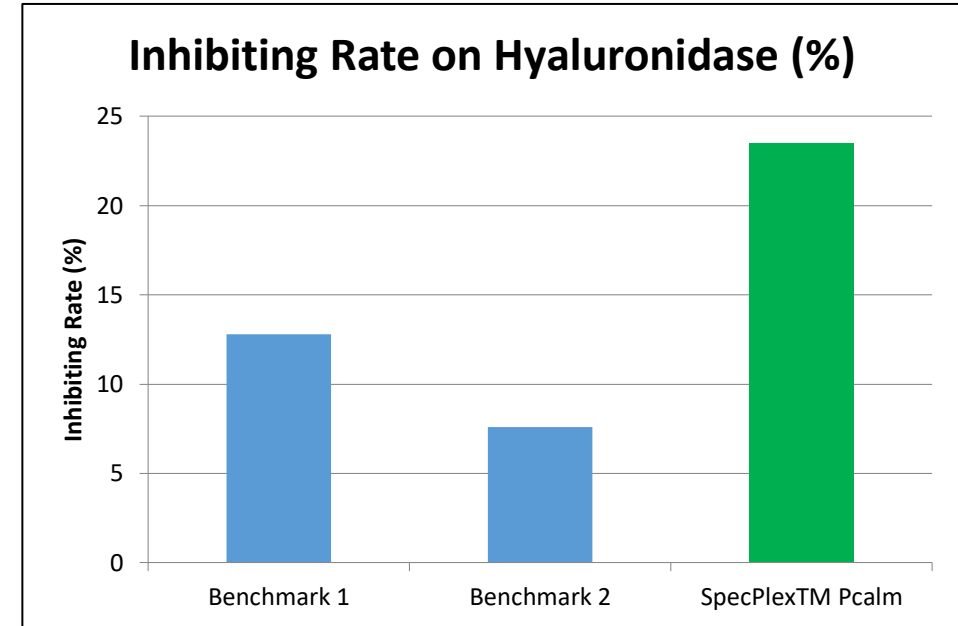
### 3—Efficacy Test of SpecPlex™ PCalm

**(in vitro) Efficacy Test:** Anti-allergic experiment (Inhibition of hyaluronidase)

**Method:** Hyaluronidase (HAase) is a specific lyase of Hyaluronic acid (HA). HA plays an important inhibitory role in many human development and regulatory processes, such as cell adhesion, organ formation, wound healing, tumorigenesis and angiogenesis. Inhibiting the activity of HAase can prevent HA from being decomposed and maintain normal physiological functions.

Kakegawa et al. reported that various drugs affecting the release of histamine by mast cells could regulate the activity of hyaluronidase.

There is a **good correlation between the inhibition of hyaluronidase activity and the inhibition of mast cell release of histamine.** By testing the inhibition rate of hyaluronidase, the anti-allergic effect of the sample can be evaluated.

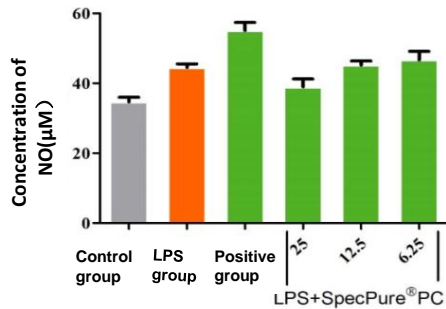


**Summary:** SpecPlex™ PCalm has better anti-inflammatory and soothing effects than two commercially available products.

### 3—Efficacy Test of SpecPlex™ PCalm

What's the left ingredients in SpecPlex™ Pcalm, except for SpecPed® Snesi 8 ?

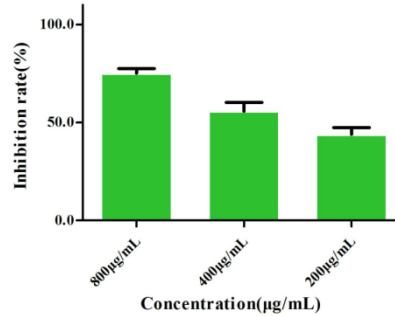
The inhibitory effect of SpecPure® PC  
(Poria cocos sclerotium extract)  
on inflammatory factor NO



Effects of different concentrations of SpecPure®PC on NO expression of RAW264.7 cells induced by LPS

When SpecPure® PC concentration reaches 25 constant g/mL, it has a certain anti-inflammatory effect and the anti-inflammatory effect is dosage-dependent.

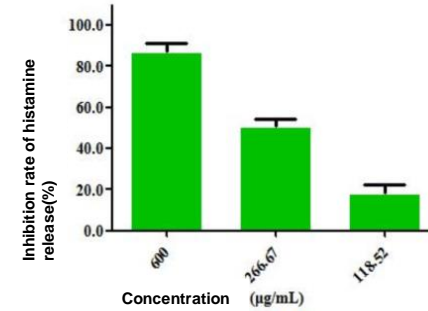
The inhibitory effect of SpecPure® PO  
(PORTULACA OLERACEA EXTRACT)  
on the release of histamine



The inhibitory effect of different concentrations of SpecPure® PO on the release of histamine

SpecPure® PO has a certain inhibitory effect on the degranulation of mast cells and the release of histamine, and the inhibitory effect is gradually enhanced with the increase of concentration of PO.

The inhibitory effect of SpecKare®NK2  
(Dipotassium glycyrrhizate)  
on the release of histamine



Inhibition of histamine release from RBL-2H3 cells by SpecKare®NK2 at different concentrations

SpecKare®NK2 has a good anti-sensitivity effect, and it has an inhibitory effect on the release of hiamine from RBL-2H3 cells induced by C48/80, and the inhibition is enhanced with the increase of the concentration.

**SpecPlex™ Pcalm Provides full and more comprehensive protection against inflammation!**

## 4—Application Guide of SpecPlex™ PCalm

### Rejuvenating & Soothing & Moisturizing & repairing mask lotion/essence(Suitable for sensitive skin) (1.0% SpecPlex™ Pcalm)

Features: As a mask lotion that can be used for sensitive skin. It incorporates SpecPlex™ Pcalm, which can heal at multiple levels, from shallow to deep, restore the broken balance of the skin, and effectively inhibit the hyaluronidas. It is a soothing and restorative product suitable for dry and sensitive skin caused by allergies such as red blood, itching, and skin barrier destruction.

	Product Name	Supplier/ INCI Name	w/w%	Function
A	SpecKare® TRHL	SpecChem/ Trehalose	2	Humectant
	SpecKare® GlyG230	SpecChem/ Glyceryl Glucoside	2	Humectant
	PrzvFree® PTG	SpecChem/ Pentylene Glycol	2	Bacteriostat, Humectant
	Steareth -20		0.5	Emulgator
B	Hydroxyethyl Cellulose		0.2	Thickener
	SpecKare® GlyG230	SpecChem/ Glyceryl Glucoside	2	Humectant
	Water		To 100	Solvent
	SpecThem® SCB21	SpecChem/ Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.1	Thickener
C	SpecKare® ARG	SpecChem/ Arginine	0.1	pHregulator
D	SpecKare® HAL	SpecChem/ Sodium Hyaluronate(1%Liquid)	5	Humectant
	PrzvFree® HE91	SpecChem/ 1,2-Hexanediol, Ethylhexylglycerin	0.5	Preservative
	SpecPlex™ Pcalm	SpecChem/ Poria Cocos Sclerotium Extract, Portulaca Oleracea Extract, Palmitoyl tripeptide-8, Dipotassium glycyrrhizate	1.0	Anti-allergic, Soothing



**Procedure:** 1. Mix part A and heat to 80°C, stirring until completely dissolved; 2. Mix part B components and stir well; 3. Mix A and B, homogenize for 5min; 4. Disperse the part C and cool the base below 60°C, then add part C; 5. Cool the base below 45°C, add part D, stirring until room temperature.

**Property:** pH: 5.61 (10% aqueous solution), Viscosity: 980 (25 °C, 4 #, 30 rpm, mpa•s)

## 4—Application Guide of SpecPlex™ PCalm

Commercial Products containing active ingredient- Palmitoyl tripeptide-8 :



Left-right: **Lancôme (2020) Hydra Zen Anti-Stress Glow Liquid Moisturizer**, **Paula's Choice Refreshing Moisture Mist**, **Dr.magic 2019 Aha Intensive Renewal Serum**, **SkinCeuticals Redness Neutralizer**, **Exuviance Antiredness Calming Serum**

## 4—Application Guide of SpecPlex™ PCalm

Commercial Products containing active ingredient- Poria Cocos Sclerotium Extract:



Left-right: **Estee Lauder** Advanced Night Repair Eye Serum Synchronized Complex II, **Estee Lauder** Advanced Night Repair Eye Concentrate Matrix, **Estee Lauder** Advanced Night Repair Eye Synchronized Complex II, **Estee Lauder** Advanced Night Repair Concentrated Recovery PowerFoil Mask, **La Mer** The Illuminating Eye Gel

*Thank you for your attention!*



**Spec-Chem Group**

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