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Bright-NP (Nonapeptide-1)

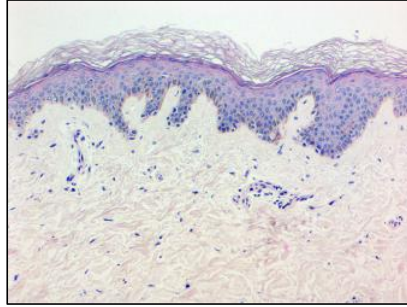
Readline® Skincare

Histological mechanism of skin aging - Decreased extracellular matrix



Cells aging

Metabolic disorder



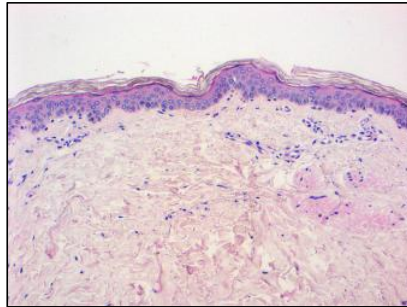
UV irradiation

Environmental pollution



Sagging skin

Elasticity decline



Deeper wrinkles

Hyper-pigmentation

Epidermis

- Keratinocyte activity decreased, the rate of differentiation slowed, and the ability of epidermal repair was weakened
- Keratin filaments crosslinked, causing hardening of the stratum corneum.
- Intercellular lipid structure change, loss of natural moisturizing factor, the stratum corneum hydration ability is abated, causing pigmentation

Dermal-epidermal Junction

- The connections between epidermis and dermis are reduced
- Type IV and VII collagen, reduced proteoglycan, and abnormal protein skeleton structure

Dermis

- The viability and number of dermal fibroblasts decreased
- The secretion of collagen and elastin decreased, the degradation increased, the length became shorter, and the distribution was sparse
- glycosylation, abnormal crosslinking collagen
- The expression of immune inflammatory factors increased, and the inflammatory response was enhanced.

Pigmentation Disorder Treatment Market

Market value
(2023)

\$ 7.1 Billion

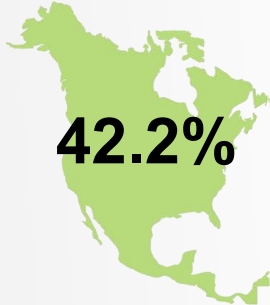
Melasma's
prevalence

5.1 Million
American are
impacted

Market value
(2032)

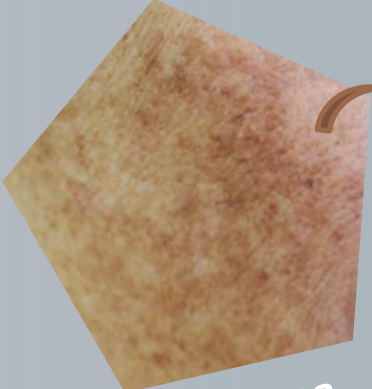
\$ 11.6 Billion

Regional
statistics



North America
Market share 2023

Common hyperpigmentation types



Melasma

Caused by hormonal changes and may develop during pregnancy



Post-inflammatory

A common cause is acne

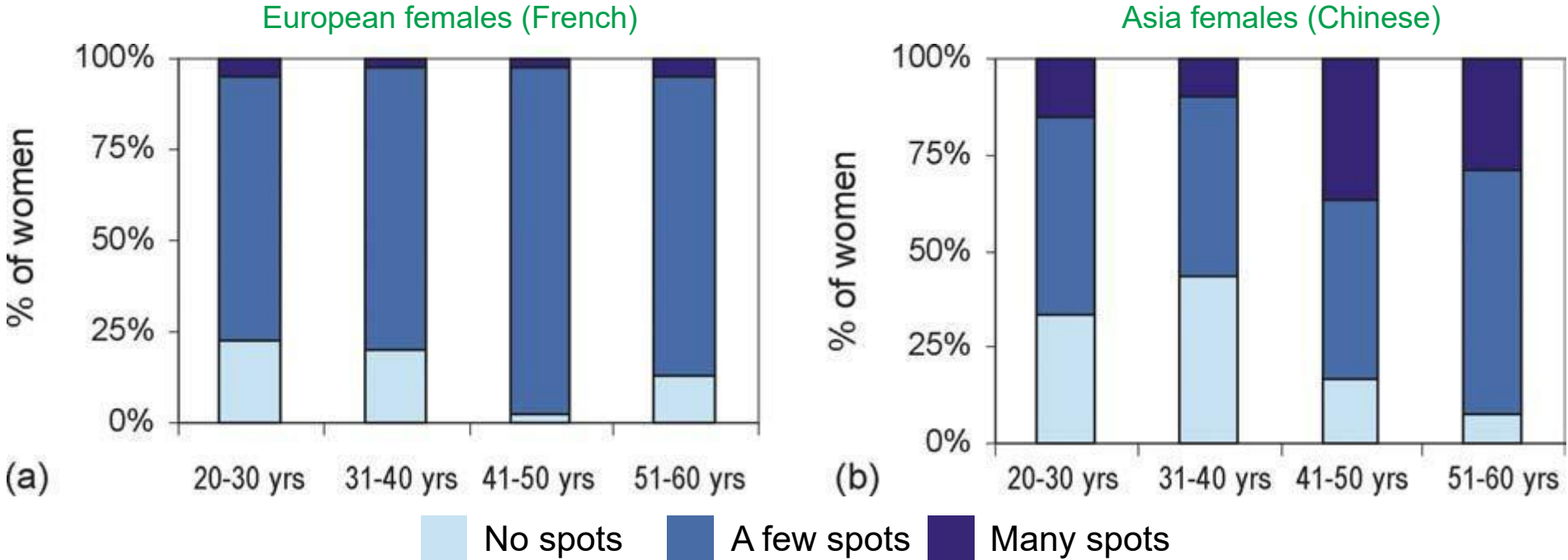


Sunspots

Related to excess sun exposure over time

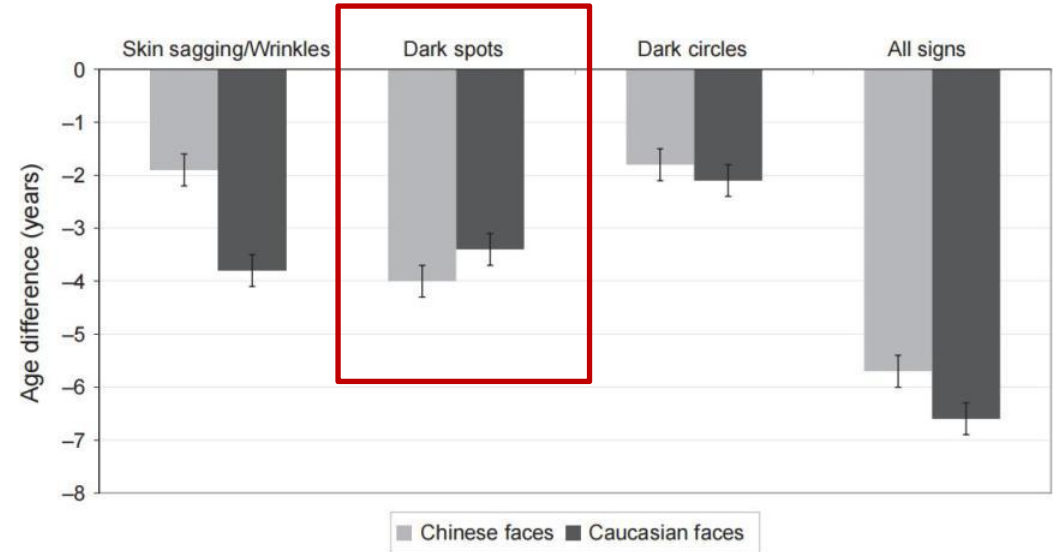


Skin aging symptoms: Spots and pigmentation



Spots and pigmentation are the main symptoms of skin aging.

How to look younger?



Spot fading has significant effect on improving the apparent age.

Popular brightening ingredients on the market

Ingredient	Arbutin	Vitamin C and its derivatives	Nicotinamide	377	Glabridin
Mildness	☆☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆☆☆
Suitable skin type	All skin	Healthy skin	Non-sensitive skin	Non-sensitive skin	All skin
Advantages	Strong sunscreen and spot-lightening effect	Strong anti-oxidant efficacy	Suitable for oily skin to reduce oil secretion	Strong anti-oxidant efficacy	Mild and stable whitening
Disadvantages	May produce hydroquinone (toxic to skin)	Unstable, easily oxidized, and photosensitivity	Highly irritating, requires tolerance building	Somewhat irritating	Difficult to extract and expensive
Suggested dosage	≤ 2% in facial cream	0.3%–10%	2%, 3%, 5%, 10%	≤ 0.5%	0.3%–1.5%

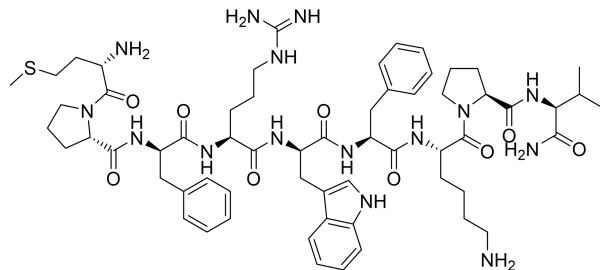
Bright-NP

MC1R receptor inhibitor

- **INCI name:** Nonapeptide-1
- **Formula:** C₆₁H₈₇N₁₅O₉S
- **Molecular weight:** 1206.5 g mol⁻¹
- **Efficacy:** Brightening, spot fading
- **Suggested dosage:** 50–500 ppm



COSMOS
APPROVED



Met-Pro-D-Phe-Arg-D-Trp-Phe-Lys-Pro-Val



Bright-NP: Versatile market application



**Peace Out
Dark Spots Serum 30 mL**

Price: \$ 36.1
Efficacy: Brightening, reduces dark spots



**Elizabeth Arden
PREVAGE® ANTI-AGING
EYE SERUM 2.0 20 mL**

Price: \$ 169
Efficacy: Instantly brightens and de-puffs



**Jan Marini
Luminate Face Lotion 30 mL**

Price: \$ 115
Efficacy: Brightening, reduces pores



**ClarityRx
Let There Be Light Powerful
Lightening Serum 30 mL**

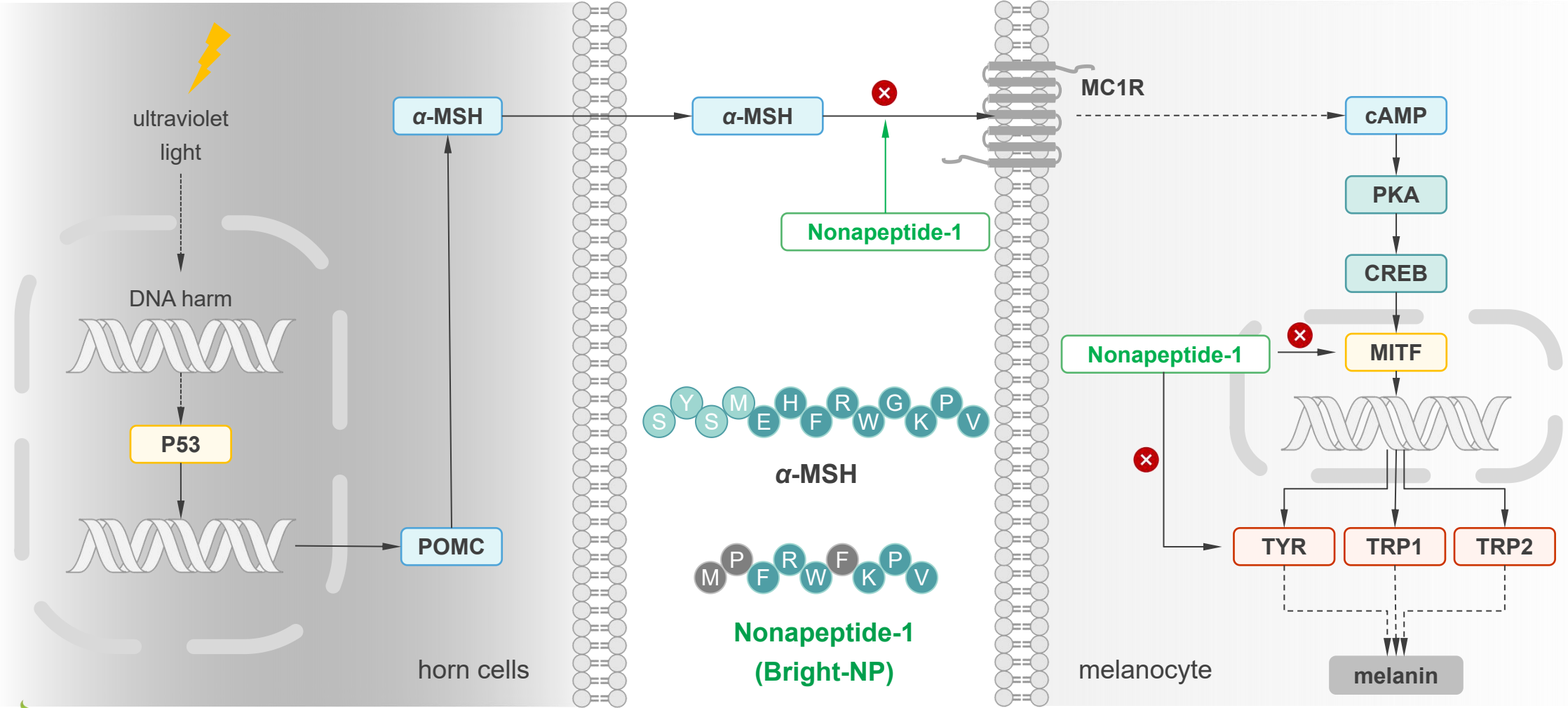
Price: \$ 110
Efficacy: Anti-aging, brightening, reduces spots



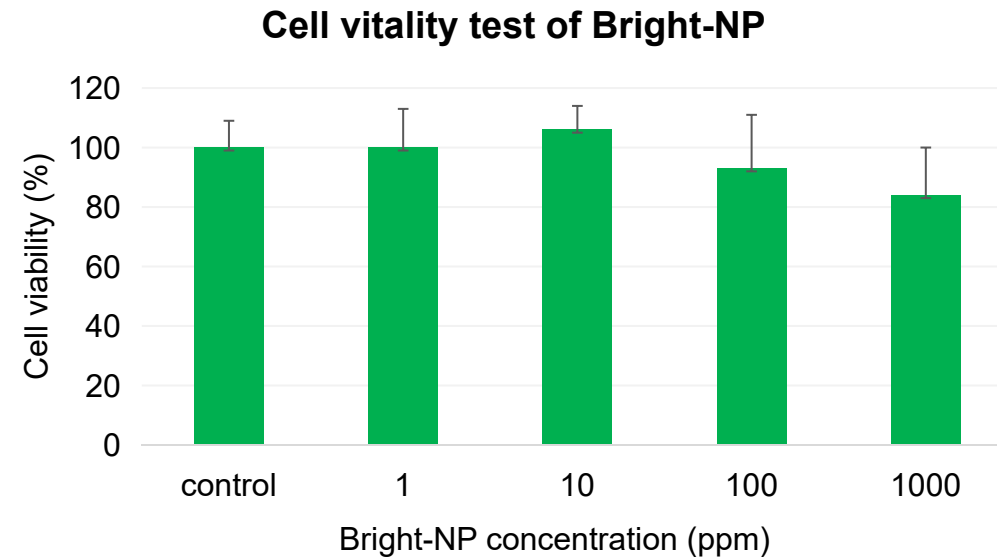
**Allies of Skin
Madelic Pigmentation
Corrector Night Serum 30 mL**

Price: \$ 105
Efficacy: Brightening, evens skin tone

Mechanism



Bright-NP: No cytotoxicity within 1000 ppm



- Cytotoxicity was not observed in the concentration range of 1 – 1000 ppm Bright-NP.

Bright-NP: Safety for use

Patch Test

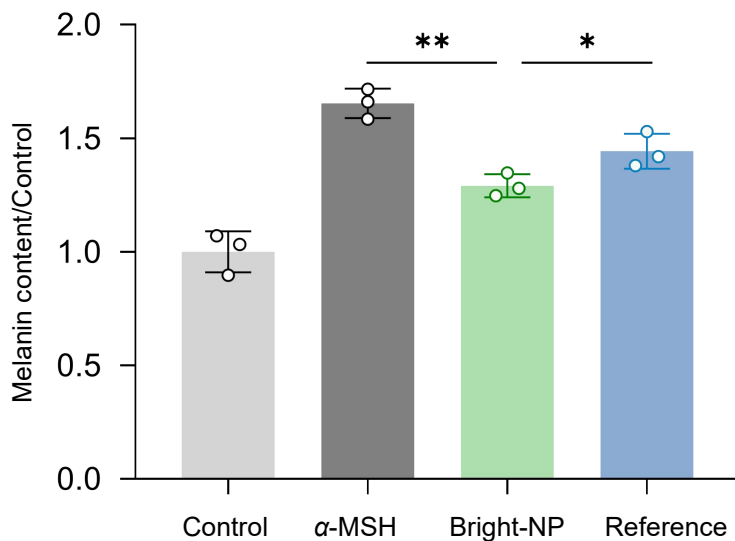
Group	Number of subjects	observe time	Patch test number of different skin reaction levels				
			0	1	2	3	4
Readline Bright-NP	30	0.5 h	30	0	0	0	0
		24 h	30	0	0	0	0
		48 h	30	0	0	0	0
Negative control	30	0.5 h	30	0	0	0	0
		24 h	30	0	0	0	0
		48 h	30	0	0	0	0

Result: Human skin patch test showed **200 ppm Bright-NP**, and 0 of 30 subjects had skin adverse reactions.



Bright-NP:

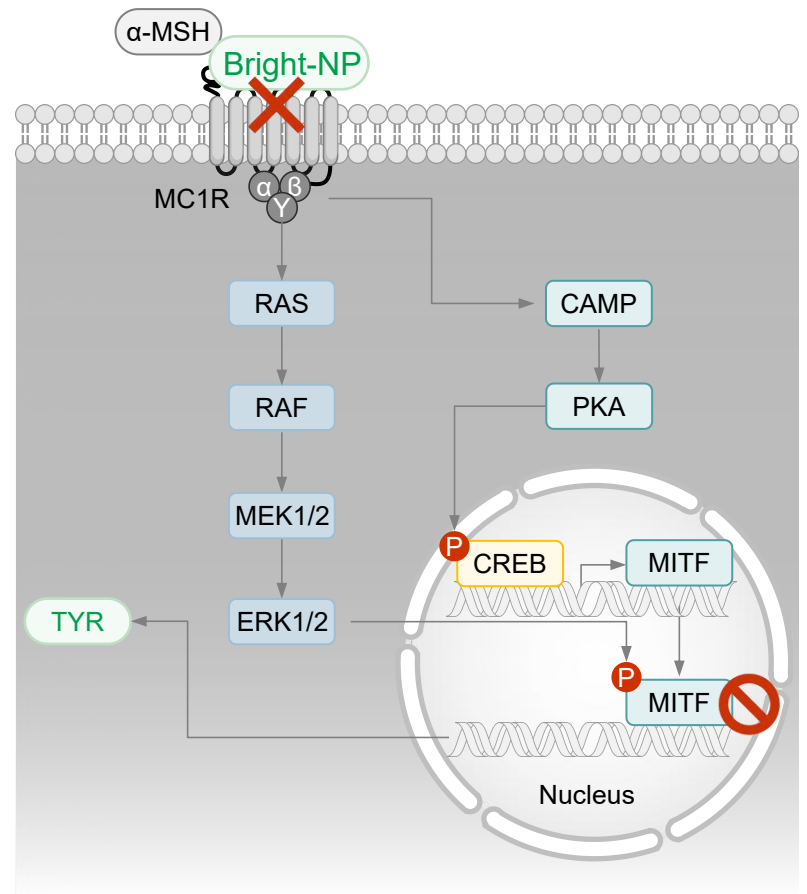
Inhibits Melanocortin 1 receptor (MC1R)



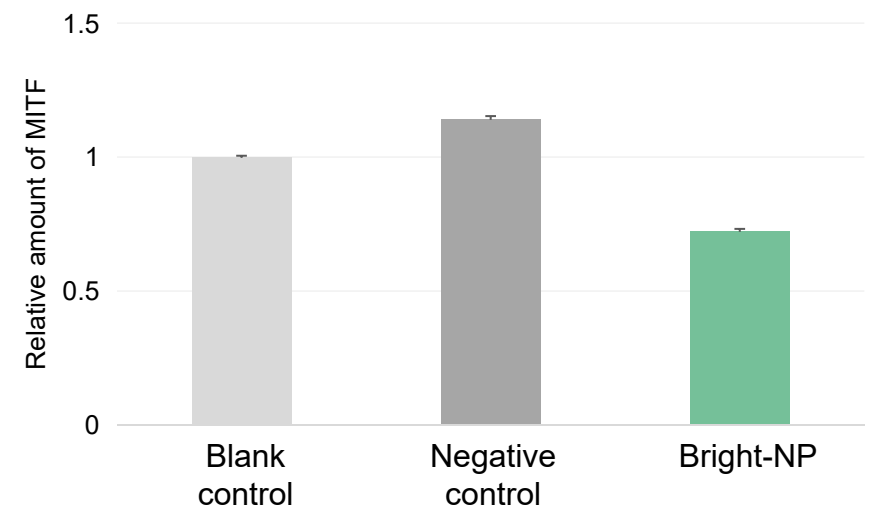
Bright-NP can inhibit MC1R and reduce the production of melanin from the source.

In vitro	Melanoma cells	Culture for 72 h
Negative control	α-MSH (5 nM)	
Positive control	N/A	
Test group	100 ppm Bright-NP	
Reference	100 ppm SEPIWHITE™ MSH	
Test method	Detect absorbance at 325 nm	
	Readline Laboratory	

Bright-NP: Inhibits MITF expression

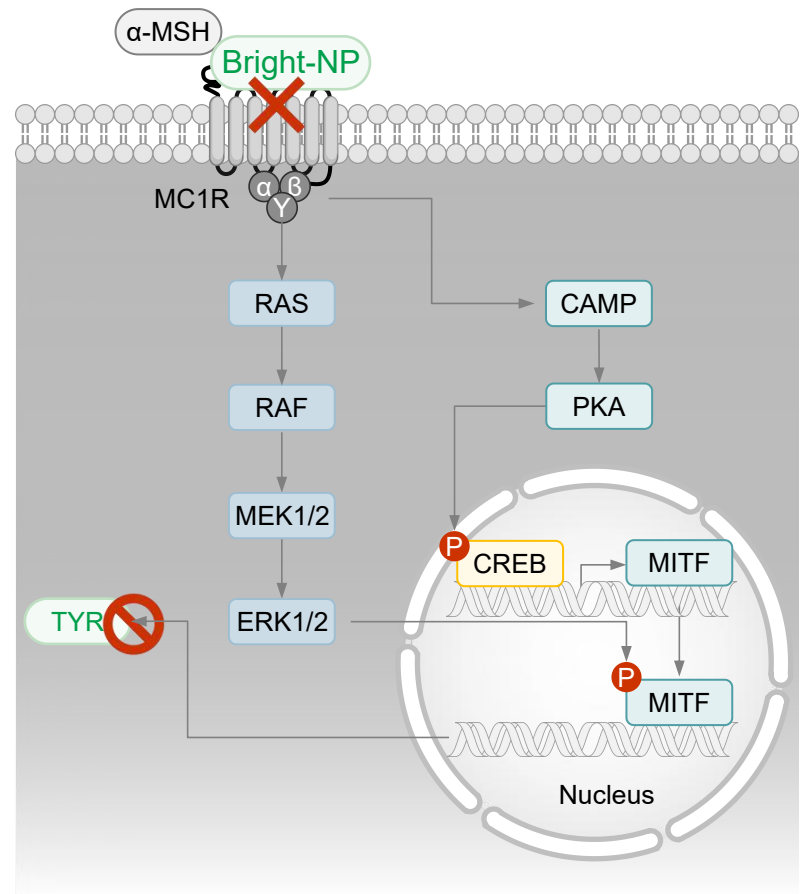


Bright-NP can inhibit MITF expression

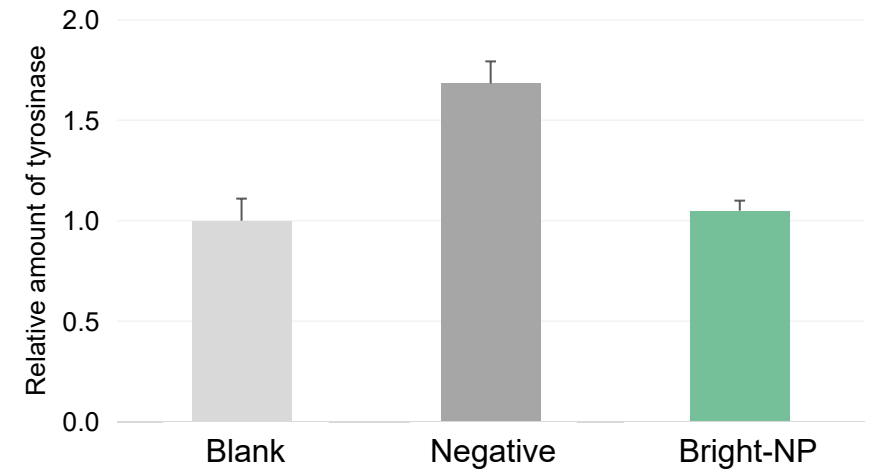


In vitro	Human epidermal melanocytes	Culture for 72 h
Blank control	Cell culture medium	
Negative control	UVA	Test group 30 ppm Bright-NP
Test method	RT-PCR	Readline Laboratory

Bright-NP: Inhibits tyrosinase expression

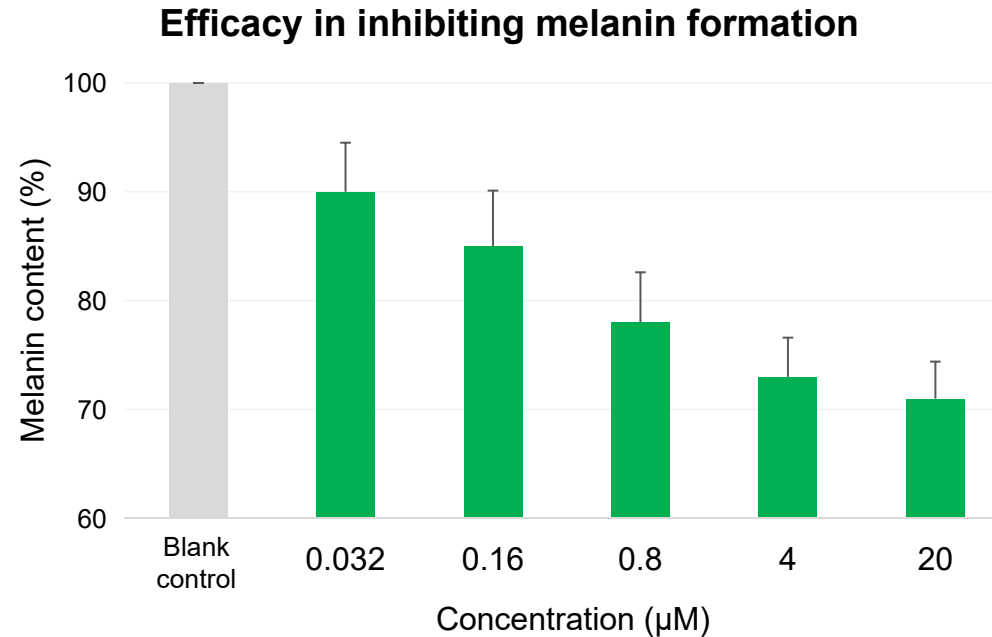


Bright-NP can reduce tyrosinase expression



In vitro	Human epidermal melanocytes	Culture for 72 h
Blank control	Cell culture medium	
Negative control	UVA	Test group 30 ppm Bright-NP
Test method	RT-PCR	Readline Laboratory

Bright-NP: Inhibit melanin formation



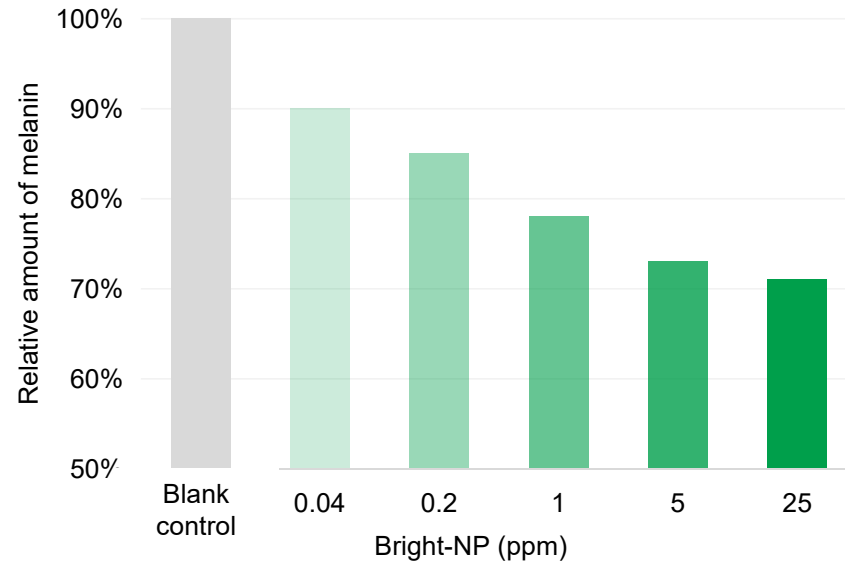
Cells: B16F10

Blank control: complete medium; Test group: Bright-NP-1+200 J/cm² UVB

Conclusion: Bright-NP can inhibit the generation of melanin in a concentration-dependent manner.



Bright-NP: Dosage research

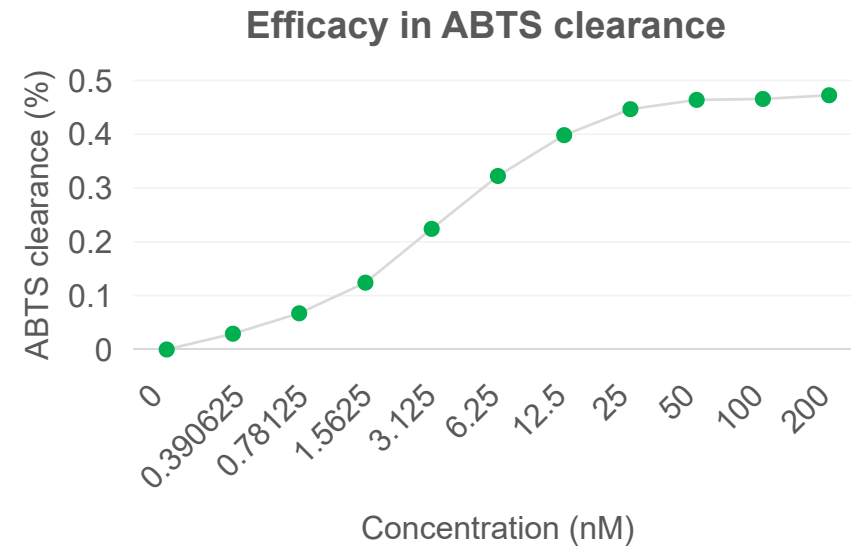
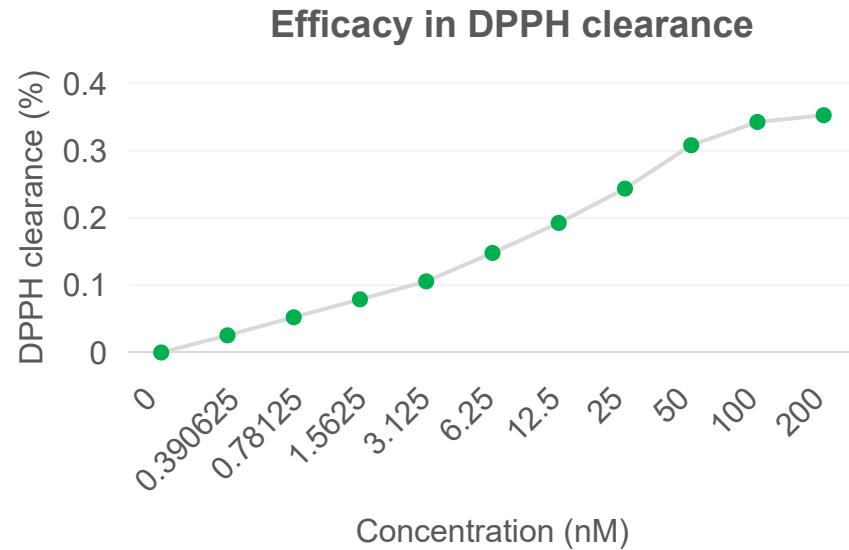


In vitro	Melanoma cells	Culture for 48 h
Blank control	Cell culture medium	
Negative control	UVB (200 mJ/cm ²)	
Positive control	N/A	
Test group	100 ppm Bright-NP	
Test method	Detect absorbance at 405 nm	
	School of Pharmacy, Lanzhou University	

The effective concentration of Bright-NP at the cellular level is 0.2 ppm. Considering the transdermal factor, the effective concentration in the corresponding formula is about 50 ppm.



Bright-NP: Effectively remove free radicals



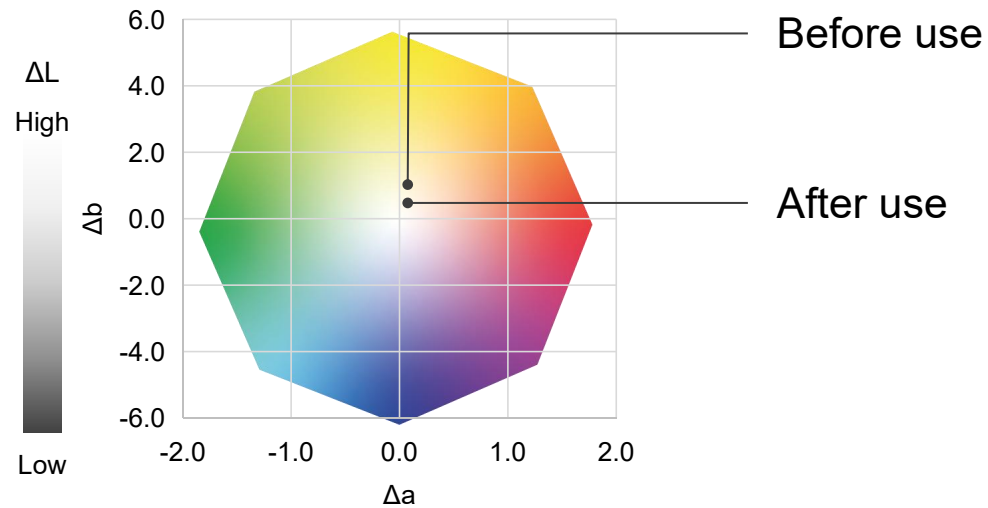
Cells: B16F10

Blank control: complete medium; Test group: Bright-NP+200 J/cm² UVB

Conclusion: Bright-NP can inhibit the generation of free radicals in a concentration-dependent manner.



Bright-NP: Human efficacy test



- Bright-NP can brighten skin tone and improve facial pigmentation
- Recommended concentration: 200–500 ppm
- Recommended use period: 4–8 weeks (the effect may vary from person to person)



Young and middle-aged women aged 26–45



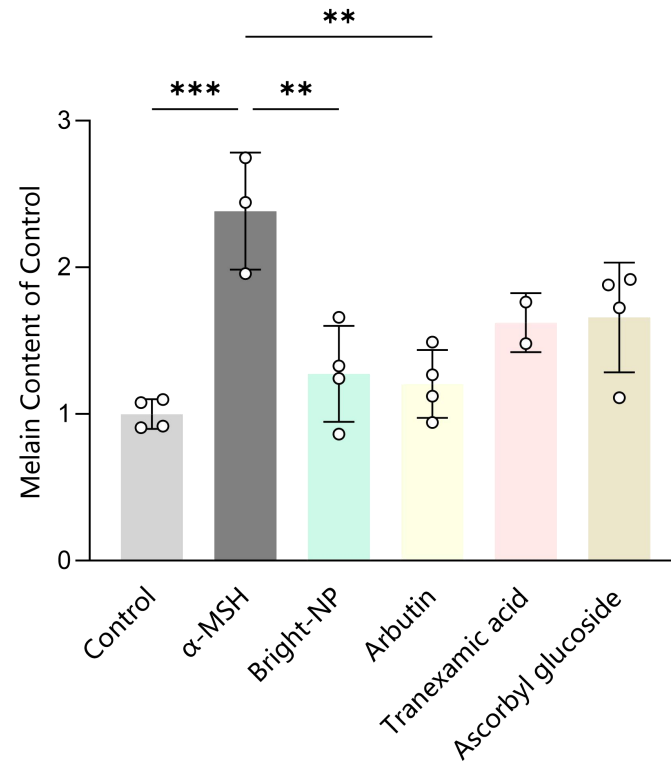
100 ppm nonapeptide-1 cream



Once a day for 90 consecutive days



Efficacy comparison of ingredients in melanin inhibition



In vitro	B16F10 cells	Culture for 24 h
Blank control	Cell culture medium	
Negative control	5 nM α -MSH	
Test group	100 ppm Bright-NP	
	100 ppm tranexamic acid	
	100 ppm ascorbyl glucoside	
Test method	Detect absorbance at 325 nm	
	Readline Laboratory	

Compared to various other ingredients, Bright-NP demonstrates superior melanin inhibition.

Bright-NP: COSMOS approved

Conformity attestation
 N°276691-20240319_0705
 Ecocert Greenlife SAS hereby confirms that:

Shenzhen Readline Biotech Co.,Ltd.
 Floor3,Building2,ShenzhenBiologyIncubator,No.10,GaoxinC,1stAve.,Maling,
 Community,YuehaiResidentialDistrict,NanshanDistrict.5, ShenzhenCity, China
 has raw materials approved in accordance with standard requirements:

COSMOS v4 in force (including all sub-versions)



For the following products categories:
 Biotechnological microbial origin, Made with chemical transformation (mono ingredients), Cosmetic formulation bases

PPAI : Physically Processed Agro-Ingredients / CPAI : Chemically Processed Agro-Ingredients / NNI : Non Natural Ingredients (Petrochemical origin) / PeMo : Petrochemical Moiety
 Without animal origin : Raw material compliant to the complementary assessment « without animal origin » in force
 The asterisk* is used to identify the commercial name of the raw materials concerned by the appendices II and/or V of the Cosmos-standard.

Attestation issued on 19 March 2024 and valid until 31 December 2024.
 ECOCERT Greenlife S.A.S
 BP 47 Lieudit Lamothe Ouest - 32600 L'Isle Jourdain
 FRANCE Phone : 05 62 07 34 24 - ecocert.com
 Capital 50 000 € - SIREN 509 534 095 RCS AUCH
 https://ap.ecocert.com/ecoproducts



Emilie CHERVAL, General Manager

FO38(GL)04en
 Accreditation by COFRAC # 5-0520 for Certification of Products and Services, scope available on www.cofrac.fr. Page 1/5

Annex to the conformity attestation
 N°276691-20240319_0705
 ECOCERT

Shenzhen Readline Biotech Co.,Ltd.
 Floor3,Building2,ShenzhenBiologyIncubator,No.10,GaoxinC,1stAve.,Maling,
 Community,YuehaiResidentialDistrict,NanshanDistrict.5, ShenzhenCity, China
 has raw materials approved in accordance with standard requirements:

COSMOS v4 in force (including all sub-versions)

- > **WrinFix-SNA**
 Dipeptide Diaminobutyryl Benzylamide Diacetate
 Skin conditioning
 %PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0
- > **Glutathione**
 Glutathione
 Skin conditioning
 %PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0
- > **D-nicotinamide mononucleotide**
 D-nicotinamide mononucleotide
 Skin conditioning
 %PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0
- > **Nonapeptide-1**
 Nonapeptide-1
 Skin conditioning
 %PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0
- > **Acetyl Tetrapeptide-5**
 Acetyl Tetrapeptide-5
 Skin conditioning
 %PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0
- > **Palmitoyl Tripeptide-1**
 Palmitoyl Tripeptide-1
 Skin conditioning

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Recommended application formulas

Brightening Mask				
Group	Ingredient name	INCI Name	ω/%	Supplier
1	Water	Water	81.00	
2	Transparent xanthan gum	Xanthan gum	0.30	
3	Cabo 21	Carbomer U21	0.13	
4	Glycerol	Glycerol	5.00	
5	Butylene glycol	Butylene glycol	5.00	
6	Hyaluronic acid	Hyaluronic acid	0.03	
7	Tremella polysaccharide	Tremella polysaccharide	0.03	
8	HydraFix-Pro	Ectoin	0.20	Readline
9	WrinFix-Px	Hydroxypropyl tetrahydropyrantriol	1.00	
10	AntiOxd-AC	Acetyl carnosine	0.20	
11	AntiOxd-Ex	Ergothioneine	0.01	
12	Bright-NP	Nonapeptide-1	0.01	
13	Niacinamide	Niacinamide	0.20	
14	Skin care powder	Taurine	3.00	
		Glutathione		
		Tranexamic acid		
		Potassium methoxysalicylate		
		Hydroxyethylpiperazine ethane sulfonic acid		
15	Otingmin	Lactobacillus soy milk fermentation filtrate	1.00	
16	Ellagic acid	Ellagic acid	2.00	
17	Triethanolamine	Triethanolamine	0.13	
18	DM926	Caprylhydroxamic acid	0.60	
		Capryloyl glycine		
		1,2-hexanediol		
		Butylene glycol,		
19	Fragrance	Fragrance	0.05	
20	PEG-40 hydrogenated castor oil	C040	0.20	



Bright-NP: Application information



Application Guide

- **Purity:** $\geq 99.0\%$
- **Solubility:** Soluble in water, insoluble in plant-based oils
- **Condition:** Protect from light, seal tightly, and store at 2–8 ° C
- **Suggested dosage:** 50–500 ppm
- **pH:** 2.5–4.5
- **Usage Tips:** Bright-NP contains methionine and acetate, which may have a characteristic odor



Documents

<input checked="" type="checkbox"/> SPEC	<input checked="" type="checkbox"/> COA	<input checked="" type="checkbox"/> MSDS
<input checked="" type="checkbox"/> TDS	<input checked="" type="checkbox"/> Material safety information	<input checked="" type="checkbox"/> Leaflet
<input checked="" type="checkbox"/> Product PPT	<input checked="" type="checkbox"/> Safety assessment report	<input checked="" type="checkbox"/> Test method
<input checked="" type="checkbox"/> HPLC spectrum	<input type="checkbox"/> Stability study	<input checked="" type="checkbox"/> Structure confirmation report
<input type="checkbox"/> Literature	<input checked="" type="checkbox"/> In vitro study	<input type="checkbox"/> Human efficacy report
<input type="checkbox"/> Permeability report	<input checked="" type="checkbox"/> Flow chart	<input checked="" type="checkbox"/> Declaration of ingredients
<input checked="" type="checkbox"/> COSMOS certificate	<input checked="" type="checkbox"/> HALAL	<input type="checkbox"/> Formulation guide
<input checked="" type="checkbox"/> Hazardous substances statement	<input type="checkbox"/> Natural origin index	<input checked="" type="checkbox"/> Declaration of origin
<input type="checkbox"/> Patent	<input checked="" type="checkbox"/> Hazardous substances statement	<input type="checkbox"/> Others



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