



vytrus biotech

Natural Innovation for a Better Life

New
Anti-acne
mechanism
of action

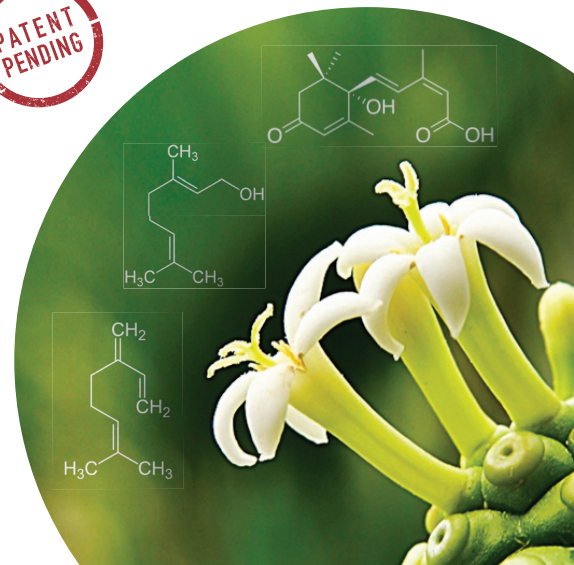
Anti-microbial Quorum Sensing

QUORA NONI^{PRCF}

The microbiome **Communication Hacker**

- Acne prone skin **microbiota re-balancing**
- **Dynamic** microbiota population **control**
- Active skin **pore size reduction**
- Guided **skin sebum reduction**

PATENT
PENDING



THE CONCEPT

Microbes talk to each other through a communication system called Quorum Sensing. **Virulence happens because bacteria speak with each other using these signals (Quorumones), forming biofilms.** Plants are constantly attacked by microorganisms, and they have developed several strategies to block and hack these communication signals, avoiding their organization into the virulent biofilm forms, by doing a real **biochemical war.** They have designed a **genuine and smart system** to fight against microbial communication, called **Quorum Quenching**, that uses **Anti-Quorumones.** VYTRUS BIOTECH has designed a product that **uses these Plant Anti-Quorum Sensing signals, disarming the bacteria by hacking their communication systems, just like plants do.**

THE PLANT

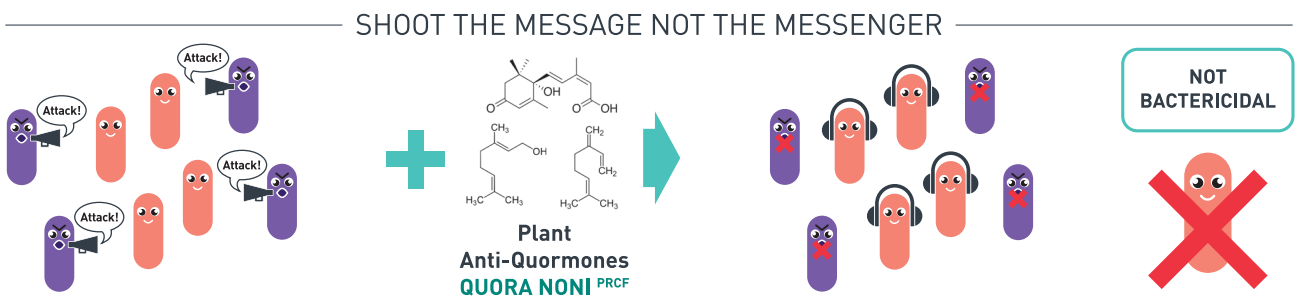
Morinda citrifolia, known as **Noni**, is native to Southeast Asia (Indonesia) and Australia. With **more than 150 actives described**, the Noni is used in **more than 40 types of ailments worldwide**, antitumor, anthelmintic, analgesic, anti-inflammatory, immuno-stimulant, several skin diseases, urinary tract disorders, fever, etc.

THE PRODUCT

QUORA NONI^{PRCF} is the **concentrated metabolome** of totipotent cells from Noni which is **rich in Anti-Quorum Sensing molecules (Anti-Quorumones)** specially designed for "**dermohacking**": to act synergistically against Quorum Sensing mediated microbial dysbiosis while perfecting the skin appearance.

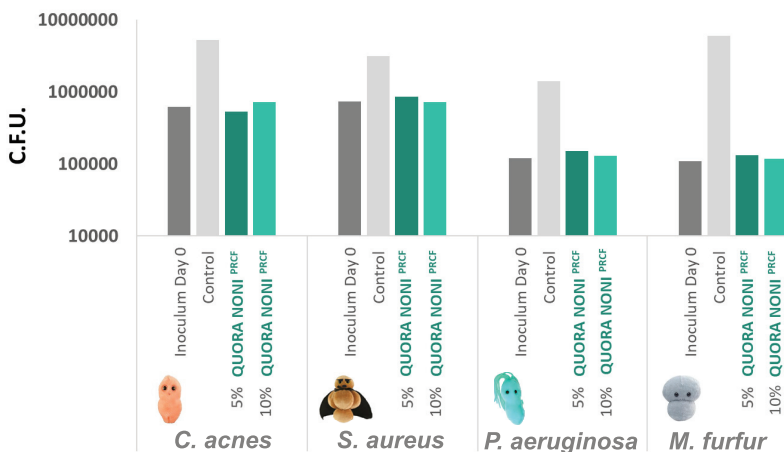
QUORA NONI^{PRCF} **blocks the microbiome communication signals** to avoid the formation of biofilms and the development of virulence, without killing or threatening the microbiota. It **doesn't contain antibiotics**, avoiding the potential resistance that microbes can develop, and it is **bacteriostatic**, maintaining the microbiome balance. The active represents a **new activity profile** for this species claiming the **Plasma Rich in Cell Factor™** as a new combination of bioactives (metabolome) from *Morinda citrifolia*.

**Did you know that microbes talk to each other through a communication system called Quorum Sensing?
What if we could hack this communication signals to avoid the attack of skin harmful bacteria?**



IN VITRO

1. Broad spectrum bacteriostatic effect (G+, G- & Fungi).

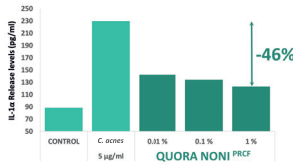


Anti-inflammatory activity against Lipopolysaccharide (LPS) and IL-17. Restoring TNF- α and IL-8 levels Up to 97% and 69%, respectively.

Bacteriostatic Effect on Gram +, Gram - & Fungi

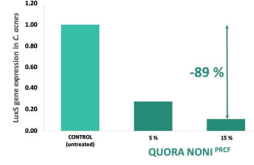
Inhibition of the growth and reproduction of *C. acnes*, *S. aureus*, *P. aeruginosa* and *M. furfur* showing and excellent bacteriostatic effect.

2. Blocking the Toll-Like Receptor-2 (TLR2).



Modulation of Microbial interaction with keratinocytes

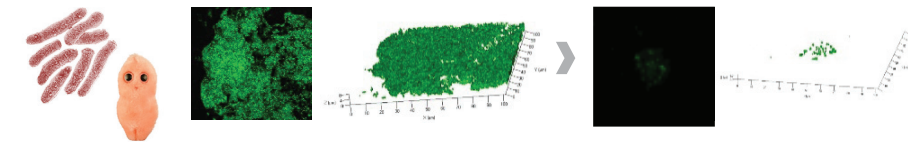
3. Inhibition of LUX-S gene expression.



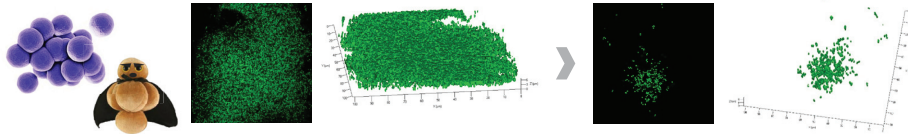
C. acnes Lux-S gene expression vs. QUORA NONI PRCF

4. Broad spectrum anti-biofilm effect.

Cutibacterium acnes (G+)



Staphylococcus aureus (G+)



First time claimed mechanism of action

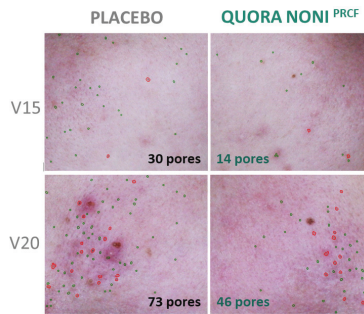
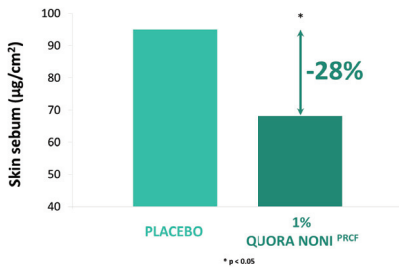
Inhibition of Lux-S gene expression: Quorumones synthesis

Up to -99% inhibition of biofilm formation, while preserving alive the planktonic cells of C. acnes & S. aureus. (Data also available for M. furfur).

Anti-biofilm Effect

IN VIVO EFFICACY

1. Sebum levels & Pore size Decrease.

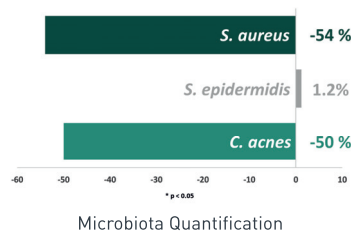
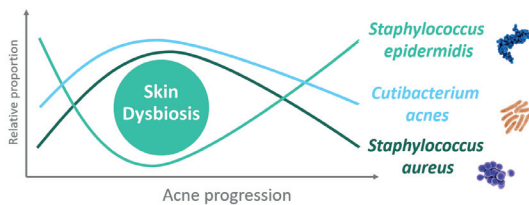


Up to 58% reduction of sebum production at 30 days compared to placebo.

Reduction of pores by -48% on average compared to placebo, reaching up to -92%.

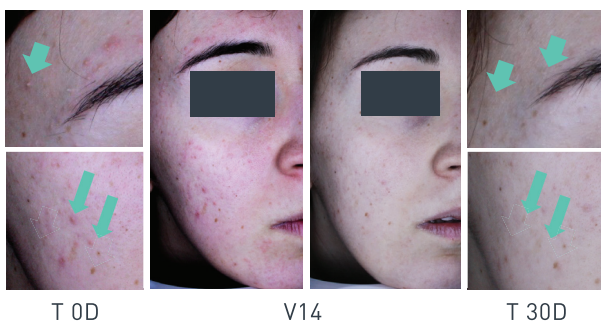
Up to -92% Pores

2. Re-balancing the Dysbiosis.



Reduction of the relative proportion of virulent bacteria (S. aureus & C. acnes), while maintaining the most favorable skin microbiota (S. epidermidis).

3. HD-Visioface® Macrophotographs.



No use of antibiotics

Skin surface perfecting

Acne prone skin microbiota re-balancing

Reduction of the presence of open comedones by -15%, reaching up to -80%.

APPLICATIONS

- Protection & balance of the microbiome, skin health & detoxification.
- Treatment & prevention of oily, acne prone skin, regulation of sebum & skin imperfections.
- Prevention of the epidermal barrier disruption, protection & homeostasis of skin.
- Treatment of dandruff, oily scalp & hair, sensitive scalp.

FORMULATION

Soft cleansing gel that provides an efficient skin friendly hygiene.

Its refreshing formula and soft feel leaves a very comfortable feeling on the skin once it is rinsed out.

Specially recommended for daily hygiene, even for delicate, sensitized and sensitive skins, since, together with **Quora Noni** ^{PRCF}, it contains the active **Sensia Carota** ^{PRCF}, that protects and strenghtens the skin barrier.

SUPRA CLEAR. MILD FACIAL CLEANSER

INCI	% (w/w)
A	
WATER (AQUA)	69.70
DISODIUM EDTA	0.20
POLYACRYLATECROSSPOLYMER-6	2.50
ZINC GLUCONATE	0.50
B	
ALCOHOL DENAT	5.00
MENTOL	0.10
C	
COCOYL METHYL GLUCAMIDE, DEHYDROACETIC ACID, SODIUM BENZOATE	5.00
WATER (AQUA)	10.00
D	
SODIUM LAUROYL GLUTAMATE	2.00
PHENETHYL ALCOHOL, CAPRYLYL GLYCOL	0.60
QUORA NONI ^{PRCF}	2.00
SENSIA CAROTA ^{PRCF}	2.00
E	
CITRIC ACID	0.04
WATER (AQUA)	0.36

TECHNICAL INFORMATION

INCI

Glycerin, Morinda Citrifolia Callus Culture Lysate, Citric acid.
China listed INCI also available.
Preservative free.

DOSAGE

Suggested use level: 0.5 - 2%.

FORMULATION

Water and ethanol dispersible.
Incorporation during the cooling phase(<40°C).

DECLARATIONS

Free of: GMO, BSE, listed CMR, VOC, heavy metals, listed allergens, parabens, phenoxyethanol, aflatoxins, pesticides and contaminants.