

Vitamin B12

The Biotech pink vitamin for sensitive and stressed skin



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Vitamins | Healthy foundations



dsm-firmenich 

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Unique Product Features:

- Biotech naturally derived pink vitamin
- Active on **atopic dermatitis**, reducing erythema and pruritus *in vivo*
- Prevents inflammation *ex vivo*: **significant and strong reduction of inflammasome and inflammatory cytokines** such IL1- β .
- **Epigenetic regulation of inflammasome**: over-expression by 61% of miR-22-3p with vitamin B12 leads to a **reduction of inflammasome** *ex vivo*
- **Significantly reduction of Mast cell degranulation by 27%**, drops the **histamine release** *in vitro*
- **Maintains healthy skin microbiome**, by reducing pathogenic *S. aureus* vs beneficial bacteria *in vitro*



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Consumer benefits:

- Vitamin B12 **relieves sensitive and stressed skin**
- Helps relieve skin conditions like **itchy, irritated, inflamed, red and cracked skin**
- Helps **prevent photo-damaged skin**
- **Protects the skin barrier damage** induced by inflammation
- Plays an important part in **speeding up cell recovery and regeneration**
- **Maintain a healthy-looking skin for a more vibrant appearance**
- Provides a **nice and pleasant pink color** of the cosmetic products



dsm-firmenich scientists discovered the action of Vitamin B12 on the inflammasome **New**

Vitamin B12 reduces UV-B induced inflammasome reaction *ex vivo*

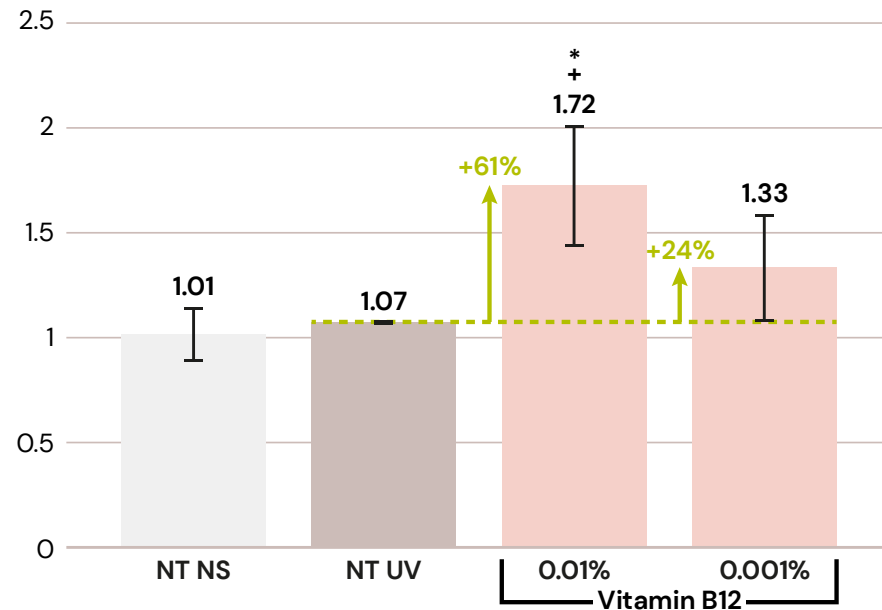
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own study

ex vivo

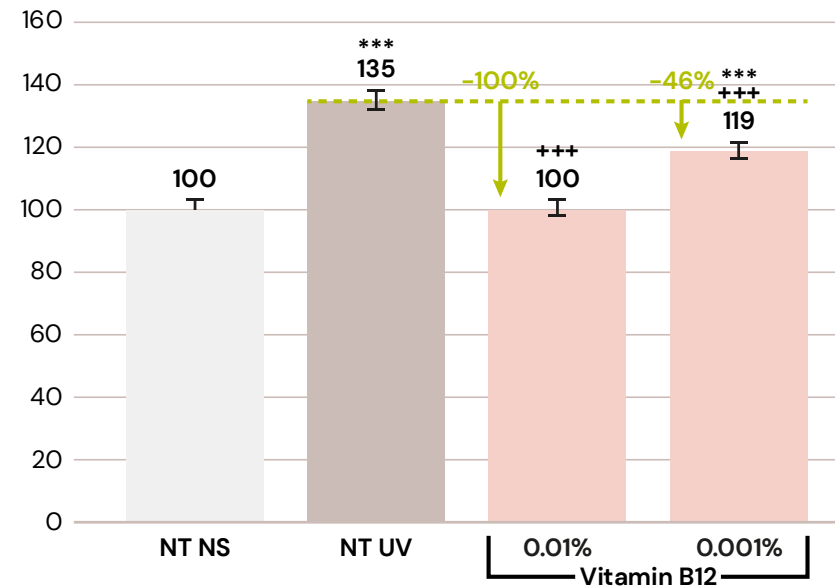
miR-22-3p expression after UV stress

Vitamin B12 significantly up regulates by 61% miR-22-3p at 0.01%



Mean ASC intensity

Vitamin B12 significantly down regulates ASC complex activation by 100%, to the level of non-treated, at 0.01% after UV-B stress



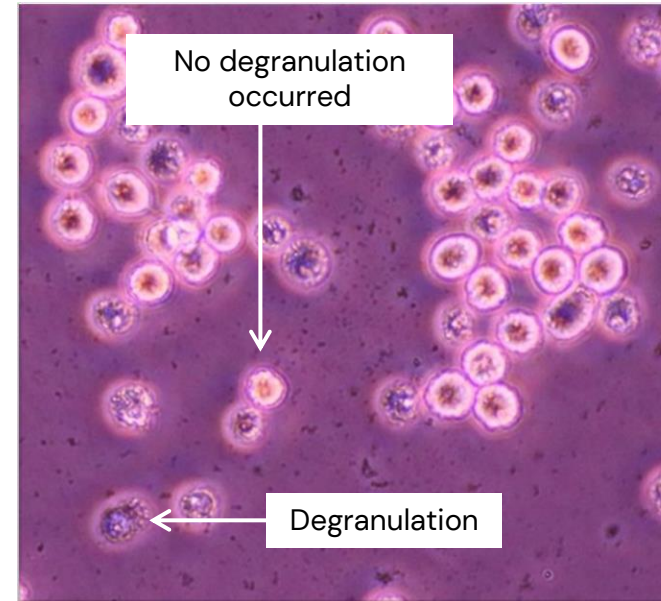
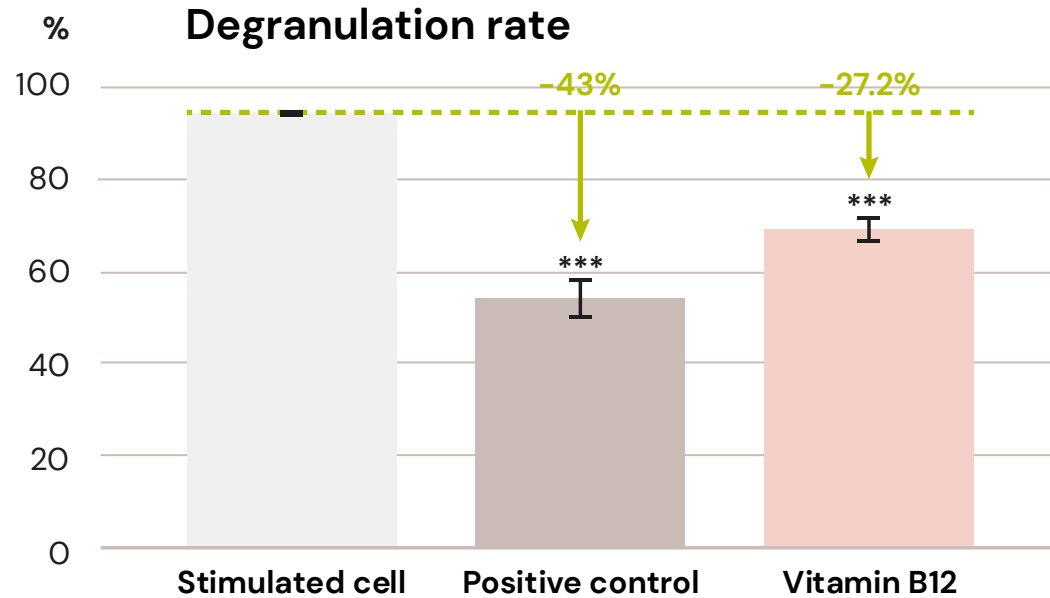
UV, pollution, bacterial invasion or any oxidative stress induce the formation of the inflammasome, especially in keratinocyte.

Its components are **pro-Caspase-1, ASC and NLRP3** which is regulated by the epigenetic factor **miRNA 22-3p**.

If it gets chronically activated, it **causes skin irritation, skin tissue damage and premature aging**.

First discovery:

First discovery: Vitamin B12 reduces histamin by inhibiting mast cell degranulation *in vitro*



Vitamin B12 **significantly inhibits mast cell degranulation by 31% at 0.00015%.**

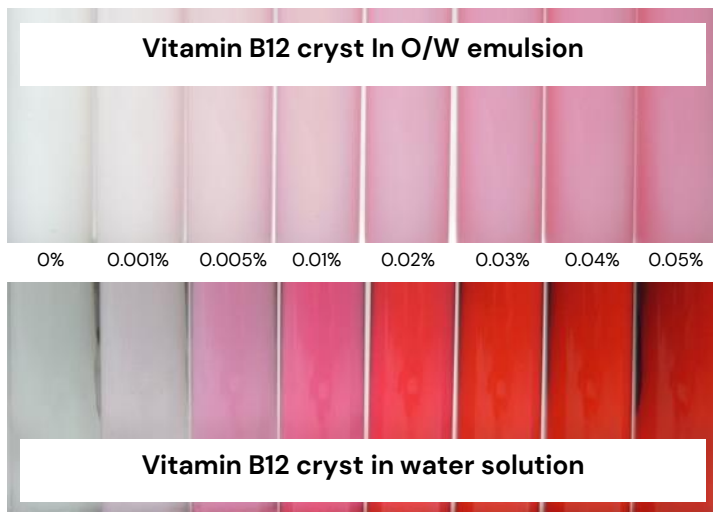
It helps to protect inflammation induced skin barrier damage and relieves sensitive and irritated skin.

Mast cells can be activated by environmental stress factors like allergens, UV light, pollution and free radicals.

Degranulation is the release of pro-inflammatory mediators such as histamine, cytokines, proteases,...leading to itching, stinging, burning, redness, dry and sensitive skin

Vitamin B12 cryst 5016420

Formulation guidelines



- Easy-to-use
- **Sparingly soluble in water**, slightly soluble in ethanol, insoluble in lipophilic components
- **Can be used for different kinds of leave-on and rinse-off** products like O/W, W/O or W/Si formulations, cream gel, clear gel, shower gel, shampoo, body wash
- Use level: **0.001–0.1%**



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