











# HAIR CARE FROM SCALP TO TIP

January 2022



# Quali-B<sup>®</sup> Vitamin B6 ID Card



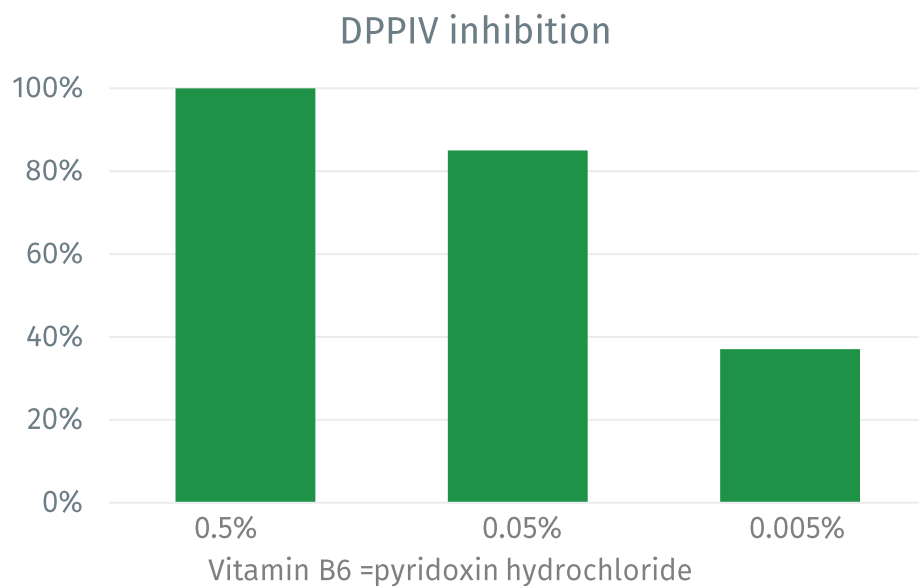
KEY BENEFIT	<div>&gt;</div> <div>Sebum reduction Scalp Care (scaling, itch and flaking reduction) Hair Thickening (helps Increase hair diameter)</div>	<div>&gt;</div> <div></div>
INCI NAME	<div>&gt;</div> <div>Pyridoxine Hydrochloride</div>	<div>&gt;</div> <div></div>
DESCRIPTION	<div>&gt;</div> <div>Vitamin</div>	<div>&gt;</div> <div></div>
TECHNICAL	<div>&gt;</div> <div><div><b>Form:</b> Powder <b>Use level:</b> Up to 0.2% <b>pH of use:</b> 4.5 to 7</div><div><b>Preservative:</b> Free <b>Solubility:</b> Water soluble</div><div><b>Target:</b> Hair fiber and scalp <b>Biodegradability:</b> Readily biodegradable</div></div>	<div>&gt;</div> <div></div>
REGISTRATION CERTIFICATION	<div>&gt;</div> <div><div></div></div>	<div>&gt;</div> <div></div>



# Quali-B<sup>®</sup> Vitamin B6

*Regulates lipid synthesis in sebaceous glands- Sebum reduction*

In vitro Studies



Vitamin B6 is able to inhibit the DPPIV enzyme activity in a **dose dependent** manner.

Inhibition of DPPIV decreases neutral lipids and saturated free fatty acids in a sebocyte cell line suggesting decreased sebum synthesis

DSM Nutritional Products  
**own study**

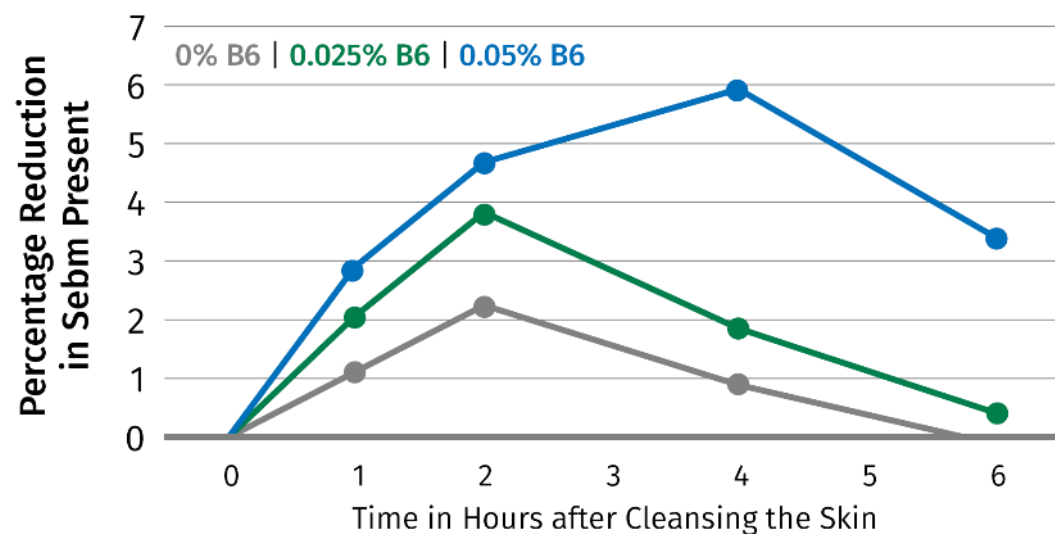
DPPIV : Dipeptidyl peptidase IV

# Quali-B<sup>®</sup> Vitamin B6

## Promotes healthy scalp

In Vivo Studies

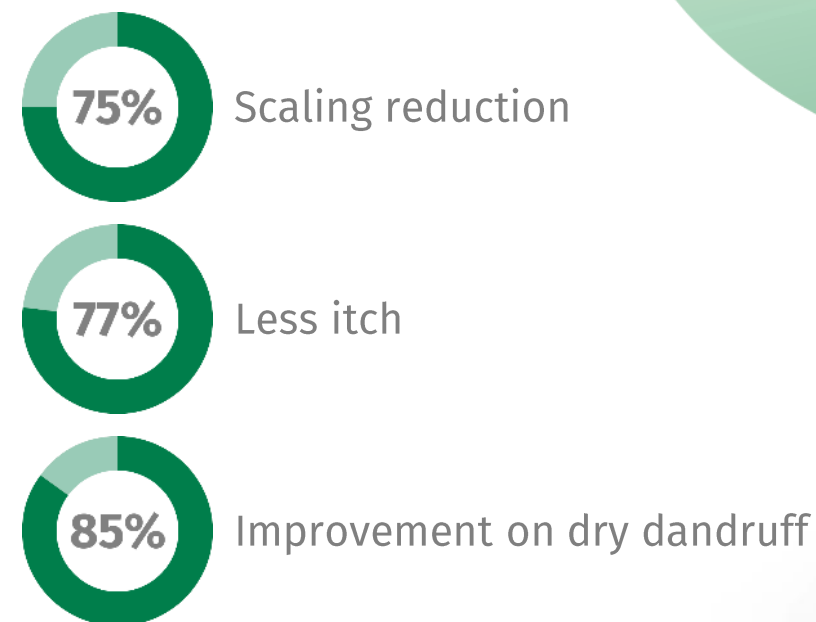
Vitamin B6 at 0.05% **reduces sebum by 6%** in one single application after 4 hours



- Facial Cream – in vivo
- Half face: treated vs untreated
- Vitamin B6 at 0.025% and 0.05%
- One single application
- After rinsed-off
- Extrapolation to scalp

Patent: US2000/6403110. Vitamin B6 = Pyridoxin Hydrochloride.

Vitamin B6 at 0.02% **improves scalp conditions**



- 162 volunteers with Seborrhea capitis
- 0.02% Vitamin B6 in a lotion

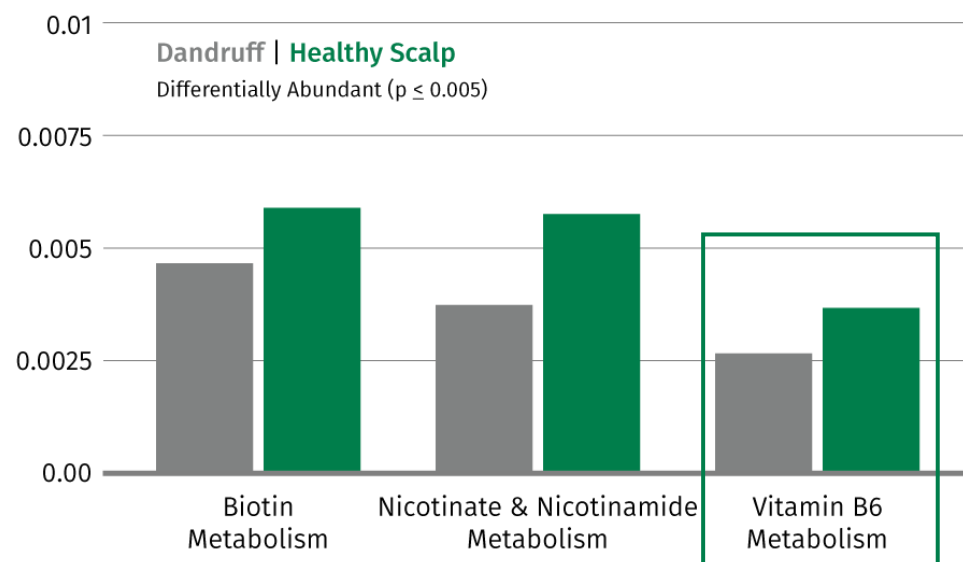
Ohta H. J Soc Cosmetic Chemists, 1965, 16:349-358. Vitamin B6=Pyridoxine-3,4-dipalmitate.



# Quali-B® Vitamin B6

## Scalp & Microbiome

### Bacterial Metabolic Pathways enriched in a Healthy Scalp vs. a scalp with Dandruff



Reduction of biosynthesis and metabolism pathways of vitamins was observed in the bacterial microbiome of dandruff scalp (vs. healthy scalp). **Enrichment in vitamins via topical application could be a solution to compensate this deficiency.**

R. Saxena et al., Comparison of Healthy and Dandruff Scalp Microbiome Reveals the Role of Commensals in Scalp Health, *Frontiers in Cellular and Infection Microbiology*, 2018, 8-346

Vitamin B6		
Concentration	0.2%	1%
<i>M. restricta</i>	●	●
<i>M. globosa</i>	●	●
<i>C. acnes</i>	↓	↓
<i>S. capitis</i>	=	●
<i>S. epidermidis</i>	=	●

incubated for 24 hours

● total antimicrobial activity  
↓ decrease microbial population  
= no variation

DSM Nutritional Products  
**own study**

*C. acnes* : total antimicrobial activity at all concentrations

*S. capitis* and *S. epidermidis* : dose dependent antimicrobial performance

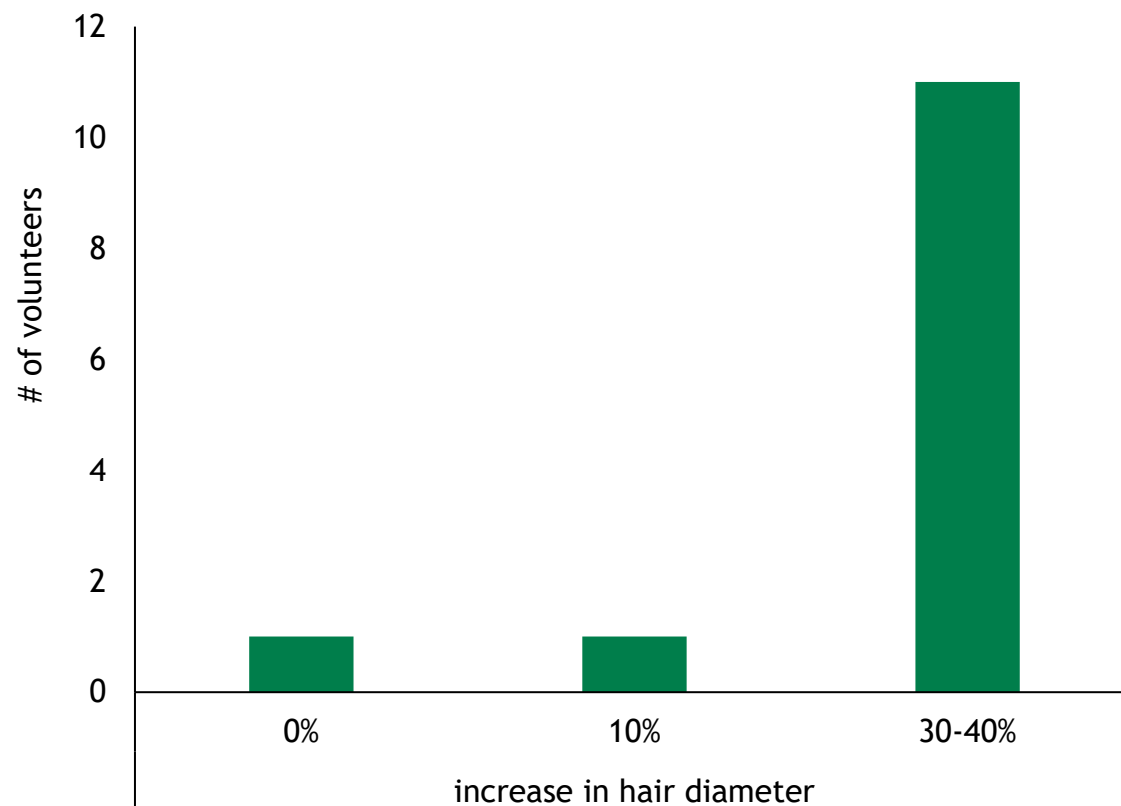
*M. restricta* and *M. globosa*: same performance in different use levels.

*M. restricta* is associated with dandruff.

Vitamin B6 =pyridoxin hydrochloride

# Quali-B<sup>®</sup> Vitamin B6

*Increases hair diameter*



Vitamin B6 increases hair diameter around 40% in 5 weeks

- Assessed by a dermatologist on the basis of magnified hair photographs
- Topically applied on scalp
- Solution with 7.5 % of Vitamin B6
- 3-5 weeks, daily use

Patent: US1974/3826834

Vitamin B6 = pyridoxin hydrochloride

# Vitamin B6

## References

### Sebum regulation and skin/scalp benefits

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- US6403110: Siddiqui et al., 2000 USA. Topical treatment for oily skin

### Hair Pigmentation & Hair thickening

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- D'Agostini et al. Chemoprevention of smoke-induced alopecia in mice by oral administration of L-cystine and vitamin B6. J Dermatol Sci (2007) 46, 189-198
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