

HotFlux®

Promote Healthier
Scalp for Stronger Hair

New Mechanism!

Warming Sensate for Healthier Scalp and Hair



HotFlux®

INCI Declaration

Vanillyl Butyl Ether

Benefits

- Mitigate hair loss and hair thinning
- Upregulate hair growth factors
- Inhibit DHT conversion
- Anti-inflammation
- Anti-pollution
- Impart exotic warming sensation

Applications

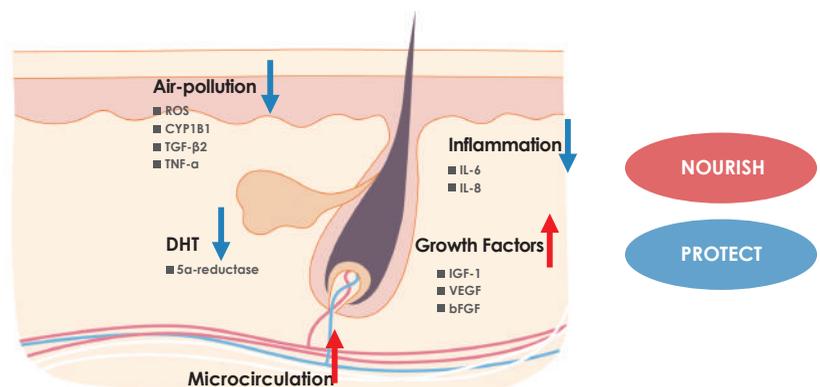
- Anti-hair loss
- Scalp care
- Massage
- Slimming
- Spa
- Pain relief
- Intimacy

HotFlux® is a mild and long lasting warming agent which concurrently imparts microcirculation enhancement effect by triggering a neuro-signaling cascade through a particular cation channel vanilloid receptor-1 (VR-1). It has been clinically studied to restore scalp environment to prevent hair thinning and promote hair growth.

Hair Loss: One of the Most Distressing Problems

Hair loss or hair thinning can be devastating to both men and women, as hair is often associated with beauty and self-esteem. The most common causes of hair loss include psychological stress, health conditions as well as external environmental triggers such as air pollutants. These factors may cause the scalp to undergo chronic inflammatory state and the hair follicle to miniaturize, affecting the hair growth cycle and eventually leading to hair loss and hair thinning.

Latest studies show that HotFlux® can effectively reduce the secretion of dihydrotestosterone (DHT) and lower the oxidative stress and inflammatory response induced by air pollutants in human hair follicle dermal papilla cells. Its clinical efficacy to mitigate hair thinning has been confirmed with anagen (growth) phase in alopecia condition increased to over 80%, representing the recovery to preferred condition of healthier scalp and stronger hair. HotFlux® offers duo effects to nourish and protect our scalp environment.



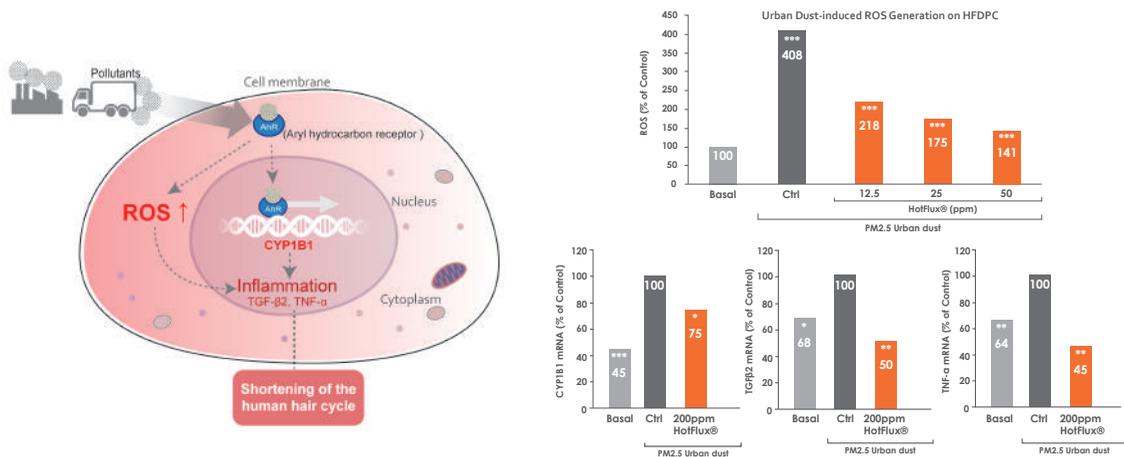
Efficacy Study

4

Anti-Pollution on Hair Follicles

HotFlux® protects scalp against environmental pollutants

Skin and scalp are always exposed to environmental dust, smoke and pollutants, which have the potentials to trigger irritation, inflammation and even damage of hair follicles. Urban dust PM_{2.5} is known to be one of the external factors that may cause alopecia by upregulating CYP1B1 gene expression in the aryl hydrocarbon receptor pathway, along with alopecia-related factors TGF-β₂ and TNF-α. Further study was conducted to investigate the anti-inflammatory effect of HotFlux®, by using qPCR, against urban dust PM_{2.5} on human follicular dermal papilla cells (HFDPC). The results show that Hotflux® is able to lower the ROS activity in dose-dependent manner, as well as downregulate the gene expression of CYP1B1, TNF-α, and TGF-β₂, to help protect scalp and prevent hair follicle inflammation induced by urban dust PM_{2.5}.

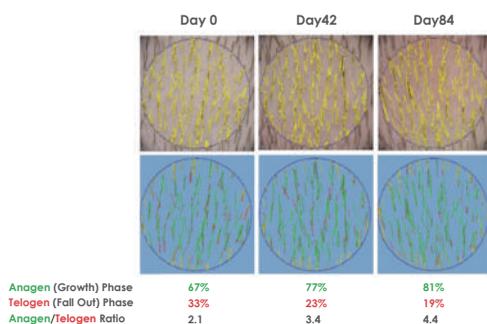


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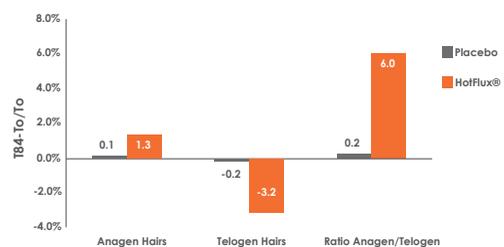
In-Vivo Anti-Hair Loss Study

HotFlux® normalizes anagen and telogen phases

A normal hair growth cycle consists of three critical phases: anagen (hair grows actively), catagen (hair stops growing) and telogen (hair rests and falls out). When scalp environment deteriorates and hair growth cycle becomes imbalanced, hair tends to grow weak and thin with telogen hair increasing to over the normal limit of 10-20%. A total of 11 volunteers, aged between 25 to 49 years old with alopecia, were recruited to participate in an *in-vivo* study conducted by Spincontrol (France) using TrichoScan®. The results show that 0.5% HotFlux® can effectively restore anagen/ telogen ratio and improve the overall hair follicles growth cycle in 3 months. On average, the anagen (growth) phase of hair growth cycle was observed to increase from 67% to 77.1% and 81.4%, while the telogen (resting) phase dropped from 33% to 22.9% and 18.6% in 42 days and 84 days, respectively. The anagen/telogen ratio is significantly improved and increased by more than double over 12 weeks, which indicates that the overall scalp condition of the test subjects became healthier after the use of 0.5% HotFlux®.



Averaged Variations of The Hair Growth Phase after 3 Months of Application



Efficacy Study

1

Upregulation of Hair Growth Factors

HotFlux® nourishes scalp with supply of nutrients

In addition to microcirculation that brings about sufficient blood flow and adequate supply of alimentation and oxygen to hair follicles, HotFlux® also increases the synthesis of hair growth factors in dermal papilla, including insulin-like growth factor-1 (IGF-1), vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF). These growth factors are essential for the proliferation and differentiation of hair stem cells to support a balanced and healthy hair growth environment.

Hair growth factors	
IGF-1	Strengthen hair by stimulating the proliferation and differentiation of hair follicles.
VEGF	Stimulate endothelial cells of blood vessels to proliferate and grow for supply of alimentation in hair follicles.
bFGF	Help hair blood circulation in the scalp and revitalize hair follicles by inducing anagen phase in resting hair follicles.

76% ↑

93% ↑

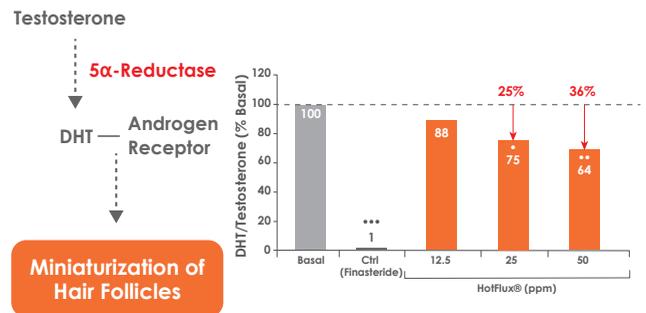
29% ↑

2

DHT Modulation

HotFlux® inhibits 5α-reductase activity

Dihydrotestosterone (DHT), an active form of testosterone converted by 5α-reductase, can bind to androgen receptors in hair follicles, causing them to shrink, weaken and eventually die. This process of miniaturization will finally lead to a complete cessation of hair growth in DHT-affected hair follicles. An *in-vitro* study, conducted by lab BioAlternative (France), shows that HotFlux® imparts inhibitory effects on 5α-reductase activity and thus lowers the DHT/Testosterone ratio in a dose-dependent manner.

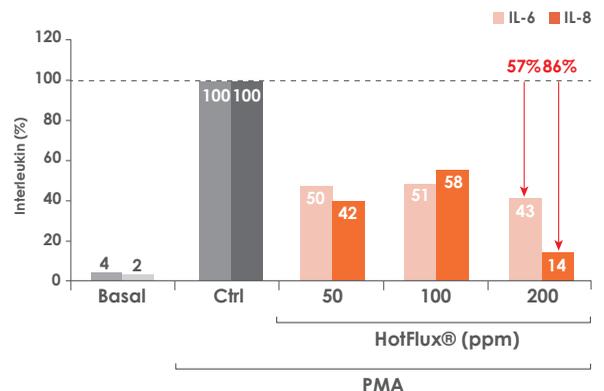


3

Anti-Inflammation on Hair Follicles

HotFlux® attenuates scalp inflammation

To better understand the role of HotFlux® in the hair loss mechanism, studies were carried out to investigate the effect on inflammatory cytokines using dermal papilla cells. Results reveal that both IL-6 and IL-8 levels were dose-dependently reduced upon treatment, suggesting the potential potency of HotFlux® in attenuating hair loss by lowering inflammatory factors that attack hair follicles.



HotFlux®

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Claim Ideas

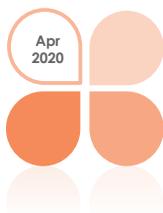
- Mitigate hair loss and hair thinning
- Reduce pollutant-induced hair follicle inflammation
- Enhance microcirculation
- Impart gentle, long-lasting warming sensation

Applications

- Anti-hair loss
- Scalp care
- Slimming
- Sport cream
- Spa and massage
- Lip Plumper
- Pain Relief
- Intimacy products

Marketing Benefits

- Safer than other warming agents
- Non mutagenic and less irritating
- Longer lasting duration
- REACH compliant, China approved and Halal approved



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