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CLEAN BEAUTY

What it actually means

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“FOCUS ON LOCAL PRODUCTS”

Dr Philippe Ch. Auderset,
President Swiss SCC

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MORE THAN JUST A SCENT

Versatility | Selfcare has taken centre stage, the line between cosmetics and wellness products is blurring, and the demand for multi-functional products and ingredients has never been more important. It's no secret that versatility is in high demand across the industry.



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This shift in consumer demand is creating a huge opportunity for versatile oils. Indian sandalwood is recognised internationally as a safe ingredient – it is listed as a cosmetic ingredient in the INCI (International Nomenclature of Cosmetic Ingredients) and IECIC (Inventory of Existing Cosmetic Ingredients in China) and is considered safe for skin application by IFRA (International Fragrance Association). The oil appears in the standard monographs of ISO (International Organisation for Standardization), the British Pharmacopoeia, and the United States Pharmacopoeia. It is approved and regulated by all the national regulatory bodies.

Benefits

By **calming the autonomic nervous system (ANS)**, users feel more relaxed with a reduction in anxiety. This reduced activity also helps in aiding sleep quality. Investigations showed a harmonising effect by reducing the physiological signs of ANS activation, such as blood pressure, eye blink ratio and decreased heart rate when subjects inhaled, or the oil dermally absorbed. In addition to this, subjects who participated in studies responded positively for self-assessments and psychological measurements of increased alertness^{1,2}. Clinical study research in 2021 found it to **reduce reactive oxygen species (ROS)**, reduce production in

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keratinocyte cell cultures exposed to **blue light** and pollution simulation by 70-80%³. It has been assessed that the effect of the oil on skin exposed to simulated blue light and pollution. Squalene moohydroperoxidase (SQOOH) levels of the epidermis were measured as the indication of oxidation. The oil has shown a dose dependant reduction of SQOOH when treated with 0.1, 1 and 10% w/w. Topical antioxidant activity of protecting skin from exposomes can be compared to that of established antioxidant α -tocopherol⁴.

Another study has reported significant **lowering of Matrix Metalloproteinase (MMP)** levels of human skin explants treated with Indian sandalwood oil when exposed to ROS (ozone) and pollution stimulant³. The oil is also proven to brighten and soothe the skin as it inhibits tyrosinase enzymes responsible for melanin production when the skin undergoes stress⁵.

It soothes skin by acting as an **anti-inflammatory agent acting on four pathways** to reduce inflammation topically by inhibiting phosphodiesterase enzyme to block cytokine pathways, inhibit cyclooxygenase to obstruct prostaglandins and inhibit nuclear factor kappa B^{6,7}.

The oil has been reported to inhibit phosphodiesterase enzymes which regulates the inflammatory marker cytokine and chemokines. This mechanism of action has resulted in **blocking several inflammatory manifestations** of the skin.

Keratinocytes stimulated with lipopolysaccharides of Cutibacterium acnes showed increased IL-6 and IL-8 production simulating acne-like inflammation, when these cell lines are treated with the oil it showed a dose dependant reduction of the above inflammatory markers⁸.

In addition, the ingredient can also act as a mild antibacterial against Cutibacterium acnes⁹.

Fragrance and fixative

Naturally aromatic, Indian sandalwood oil allows for the product to make a 'fragrance-free' claim due to the lack of any added fragrance ingredients, all while appealing to a wider target market of those who have skin sensitivity issues.

The oil has a low vapour pressure of 0.06 kPa at 38°C, with a volatility index of zero at ambient temperature. These physical properties make it a fixative for other volatiles to slow release of aroma on skin, traditionally in fragrance, but also giving it the added aromatherapy benefits when used at certain concentrations in topically applied products, reducing the volatility of other essential oils for more subtle and long-lasting distribution of aroma¹⁰. □

The complete bibliography and references can be found online with the webcode 100608, www.cossma.com

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