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Aloe, Skin Care, and California Proposition 65

by Ahmed Abdullah, M.D., F.A.C.S., F.I.C.S.



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When most people hear mention of the aloe vera plant, the adjectives that come to mind are soothing, nurturing, and healing. Yet, despite aloe's reputation as being beneficial to the body, in late 2015, California's Office of Environmental Health Hazard Assessment (OEHHA) added "non-decolorized, whole-leaf aloe vera extract" to the list of chemicals known to the State of California to cause cancer for purposes of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

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As would be expected, the simple mention of the words aloe vera and cancer in the same sentence has been enough to send some individuals into panic, believing that any aloe-containing product now presents a potential threat. However, the aloe referenced in California Proposition 65 is not the same aloe that is used in skin care. Unfortunately, this point is widely missed by consumers who, understandably, often fail to recognize the difference between various forms of aloe vera or any skin care ingredient, for that matter.

This situation underscores the important role that skin care professionals play in the lives of clients. While aestheticians, dermatologists, and plastic surgeons are primarily regarded as practitioners, this role is increasingly evolving to include a deeper focus on education. Regardless of the location of the professional's practice, questions about California Proposition 65 should be expected from clients as they won-



der how this development impacts the safety of the skin care products they use. The following commonly asked questions are outlined with responses professionals can use to smoothly navigate through a conversation about aloe.

What is non-decolorized, whole-leaf aloe vera?

Aloe vera, in its natural state, contains hundreds of beneficial properties, as well as a few unwanted ones. One of the undesirable properties is anthraquinone – an organic compound that has a laxative effect when ingested and can cause irritation or allergic reactions when applied to the skin. Because of these risks, most aloe processors remove anthraquinones, namely aloin and/or barbaloin, in a process known as decoloration. This name comes from the color change that aloe undergoes during the process from the start – yellow – to finish – clear.

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Products with whole-leaf aloe vera are created by grinding up the entire aloe leaf. Whole-leaf aloe contains the inner gelatinous part of the leaf, the green rind, and the aloe latex, the yellow sap found immediately below the rind. The rind and latex contain the bulk of the plant's anthraquinone content.

Many skin care companies utilize whole-leaf aloe vera that has been decolorized, while other companies utilize only the decolorized inner filet of the leaf, which is rich in vitamins, minerals, amino acids, enzymes, polysaccharides, and fatty acids and does not contain a high anthraquinone content. There is some debate in the skin care industry about which option

is better. Given that both types have negligible amounts of aloin, the choice is a personal one.

Why has non-decolorized, whole-leaf aloe vera been added to California Proposition 65?

In August 2013, the National Toxicology Program (NTP), a program run by the United States Department of Health and Human Services, published a study related to the ingestion of non-decolorized, whole-leaf aloe vera. In that study, rats and mice were exposed to freeze-dried and gamma-irradiated extracts of aloe vera leaves in their drinking water for a two-year period. At the conclusion of the study, the rats demonstrated an increase in intestinal tumors. These findings led the International Agency for Research on Cancer to declare non-decolorized, whole leaf aloe vera extract, like the one used in the study, as potentially carcinogenic to humans.

In response, California's OEHHA proposed in April 2015 to add non-decolorized, whole-leaf aloe vera to Proposition 65. A period of public comments followed and, in December of 2015, the move to add this type of aloe to Proposition 65 was made official.



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While it has not been confirmed by alternate studies, researchers associated with the NTP study suspect that the aloin content in the unpurified, whole-leaf aloe may have played a role in the tumor development that occurred in the rats.

How can I tell if the aloe used in a skin care product is truly decolorized?

When asked about skin care products following the release of the NTP study, Dr. Nigel Walker, deputy program director for science for NTP, stated, "The aloe gel, which is used in skin care products, is generally believed to be safe."

While it is reassuring for consumers to hear confirmation that aloe vera skin care products are safe,

the question, "How can you be sure?" still looms. The International Aloe Science Council (IASC) has the answer.

IASC, a not-for-profit trade organization for the aloe vera industry, was founded in 1980 to establish quality standards for aloe vera raw materials and finished products. Today, IASC standards related to aloe harvesting, processing, and usage ensure that consumers have access to aloe products of the highest quality. To be IASC certified, aloe must undergo third-party testing following the decoloration process and contain aloin content of no more than 10 parts per million, a level significantly less than the 50 parts per million allowable by the Cosmetic Ingredient Review – an organization established by the Personal Care Products Council with support from the FDA and the Consumer Federation of America. According to the IASC, the vast majority of products with IASC-certified aloe vera actually contain aloin at less than one part per million.

Beyond ensuring proper implementation of the decoloration process, IASC certification demonstrates that aloe has been properly harvested and processed to maintain optimum purity and bioactivity. This distinction is vital, as aloe's active

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properties begin to break down soon after harvesting if they are not handled properly.

IASC certification is not always easy to spot. While many manufacturers list the IASC seal on their products, others do not. If a client is unsure, they should contact the product manufacturer or IASC directly to verify that certified aloe is utilized.

The most important takeaway is that use of unpurified, non-decolorized, whole-leaf aloe vera, like that referenced in California Proposition 65, is nearly unheard of in skin care products sold in the United States. Consumers generally have no reason to worry about the use of aloe vera in their skin care products. Rather, when high-quality aloe is used in high enough concentrations, it is proven to be beneficial to skin tissue.

As the skin care marketplace becomes increasingly crowded, it should be assumed that nearly every ingredient used in mainstream formulations will come under some level of scrutiny. This examination is a good thing. As researchers look even closer at the ingredients that comprise skin care prod-

ucts, safety and efficacy improves. As the experts to whom consumers will continue to turn to receive guidance regarding the products that are best for their skin, it is more imperative than ever that skin care professionals stay on top of big and small developments in the industry and are armed with the facts that will allow them to play the educator role to the best of their ability.



Ahmed Abdullah, M.D., F.A.C.S., F.I.C.S. is author of the forthcoming book, "Simple Skincare, Beautiful Skin: A Back-to-Basics Approach," CEO and founder of Lexli International, Inc., and formulator of the company's Lexli® line of professional skin care products. A board-certified plastic/reconstructive surgeon and a leading aloe researcher, Abdullah

travels the world, educating licensed professionals and consumers alike about the proper ways to utilize aloe in skin care applications, the essential steps to ensuring the skin's basic needs are met, and setting the record straight on prevalent skin care myths. He regularly sees patients at his practices in Fargo, N.D. and Dubai, United Arab Emirates.

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