

ALARMIST RUMORS IMPACT THE FUTURE OF SUNSCREENS

HEADLINES BLARE: "Can Sunscreens Cause Cancer?" "By the Ounce or by the Tumor?" "Sunscreen or Smokescreen?" Articles bearing scare-tactic titles such as these appear in daily blogs, in the press and in TV reports declaring that sunscreens are more damaging than protective. All of it affects both the user and the manufacturers.

The industry and, more importantly, the consumer, are still reeling from the 2010 sunscreen report by the Environmental Working Group (EWG). I suspect that even the EWG did not predict how destructive and unhelpful its report would be to our efforts to protect the consumer from the ravaging rays of the sun. There has been a surge in reports on the issue. For example, the number of Google hits that I personally monitor for "sunscreens" have more than doubled in June and July with more than half referencing the pros and cons of the negative findings of that report. Rumors can be damaging and premature conclusions may lead to such horrible consequences.

"The Story of Cosmetics" a seven-minute video released by "Free Range Stu-

dios" in close cooperation with The Campaign for Safe Cosmetics (a coalition that includes the EWG, Friends of the Earth and others) has already drawn sharp criticism.¹

The Personal Care Product Council (The Council) issued a statement that "the content in this harsh and unscientific shockumentary-genre video bears no relationship to the real story of cosmetics."² Rumors, like these, can blow out of control.

A State of Flux

The industry has been pushed into a state of flux. These past few months have witnessed a barrage of developments that confront the cosmetics industry in general as well as the sunscreen industry in particular, including:

- On July 19, 2010, a new report from the American Cancer Society and other world-leading health groups have identified 20 suspected carcinogens whose potential to cause cancer is as yet unresolved. Unfortunately, titanium dioxide, an ingredient used extensively in sunscreens, was among the 20 suspected carcinogens that need additional study and research.³

- The Safe Cosmetics Act of 2010, H.R.5786, was introduced by Representative Janice Schakowsky (D-IL) and other lawmakers on July 20, 2010.⁴ This bill would give the FDA the authority to ensure that personal care products are free of harmful ingredients. (The existing law, passed in 1938, granted decision making about ingredients safety to the cosmetic industry.) The Council's chief executive officer Lezlee Westine responded the next day to that criticism by stating: "We are concerned that the Safe Cosmetics Act of 2010 as written is not based on credible and established scientific principles, would put an enormous if not impossible burden on FDA, and would create a mammoth new regulatory structure for cosmetics, parts of which would far exceed that of any other FDA regulated product category including food or drugs. The measures

the bill would mandate are likely unachievable even with the addition of hundreds of additional FDA scientists and millions more in funding and would not be a meaningful contribution to product safety."

- The pending FDA Globalization Act of 2009, H.R.759, was introduced by Congressman John Dingell (D-MI) on January 28, 2009 "to amend the Federal Food, Drug and Cosmetic Act to improve the safety of food, drugs, and devices and cosmetics in the global market, and for other purposes."⁵ On July 15, 2010 Westine wrote a letter to Chairmen Rep. Henry Waxman (D-CA) and Sen. Tom Harkin (D-IA), "outlining a number of new science based regulatory changes that we believe should be adopted in legislation that would further strengthen the effective FDA regulation of our products including FDA reviews of cosmetic ingredients."

- The 10% tax on tanning salons was instated on July 1, 2010. This milestone legislation has become law without too much fanfare. The effect this tax, if any, will have on consumers frequenting tanning salons remains to be assessed. However, one thing is certain: the revenues from this tax will be totally insignificant to reduce the health care costs and pale in comparison to the "Botox" tax that was originally planned.

Unfortunately, most of the news on cosmetics and sunscreens has been bleak with few exceptions. For example, the Cosmetic Boot Camp, a U.S. organization that provides ongoing training and education to doctors and their staff has concluded that sunscreen benefits far outweigh the risks.

A recent survey conducted by Harris Interactive found that only one in five people (20%) wear sunscreen on a daily basis, yet 94% of Americans know that prolonged exposure to the sun can cause skin damage and even skin cancer.⁶

An excellent review article was recently published in July, which addressed enhancing sunscreen efficacy for realistic applica-



Nadim Shaath
Alpha Research
& Development Ltd

Dr. Nadim Shaath is the president of Alpha Research & Development Ltd., a consulting firm in White Plains, NY, specializing in sunscreen formulations and new product ideas in cosmetics, essential oils and ultraviolet filters. He has over 30 years of experience as chairman of the chemistry department at SUNY-Purchase, the technical director at Felton, the president of Nickstadt-Moeller, Inc. and the CEO of Kato Worldwide. He can be reached at alphamd@aol.com or visit his website at www.alphamd.com

tions.⁷ While the vast majority of consumers are aware that the sun can cause damage, they are baffled when the efficacy of sunscreens is called into question so vehemently in the press. Yellow journalism and alarmist reporting work to undermine consumer confidence. Sunscreen's reputation has been tarnished, but innovative research provides a beacon of progress amid this bad news.

On August 10, the American Academy of Dermatology issued a press release highlighting Dr. Steve Wang's (Memorial-Sloan Kettering Cancer Center, New York) independent analysis published online in the *Journal of the Academy of Dermatology* which determined that there is no evidence that the inclusion of retinyl palmitate in sunscreens can cause cancer in humans.

"This report should help dismiss the (EWG) misinformation that sunscreens are not safe, as sunscreens are vitally important in reducing your risk for skin cancer, not causing it," said Dr. Henry Lim, a co-author of this report and chairman of the dermatology department at Henry Ford Hospital, Detroit.⁸ Interestingly, numerous blogs have already echoed these findings with Mary Barrow of "Sunaware" stating "...the EWG used misleading data to suggest that most sunscreens accelerate the development of skin cancer. Thanks to researchers at Memorial-Sloan Kettering Cancer Center, that report has been authoritatively refuted."⁹

Strategies that Reduce Risk

New research appeared in the *Journal of the Federation of American Societies for Experimental Biology* entitled "Melanocortin 1 receptor genotype: an important determinant of the damage response of melanocytes to UV radiation."¹⁰ It describes, for the first time, the chain of molecular events that increase one's risk to skin cancer. These results give researchers strategies to reduce or prevent skin cancer, develop drugs or a new generation of sunscreens.

Researchers at the University of Tennessee have isolated nanoparticles in English ivy that may make sunscreens safer and more effective.¹¹ From the yellowish mate-

rial that is secreted by the ivy (to enable the ivy to climb steep concrete surfaces), researchers isolated nanoparticles that exhibit unique physical and chemical properties. These particles have a large surface to volume ratio, which allows them to absorb and scatter light. They claim that these ivy nanoparticles are more uniform than ZnO and TiO₂ enhancing their absorption properties and scattering the light characteristics. Since the plant's nanoparticles are more adhesive to surfaces, the sunscreens made with them may not wash off as easily as traditional sunscreens. They also claim that these new particles were less toxic to mammalian cells, have a limited potential to penetrate through human skin and are easily biodegradable. Considering the ongoing controversy on the use of nanoparticles and sunscreens,¹² this present research would be a welcome development. The safety of nanotechnology-based sunscreens, which was challenged by many groups including the Friends of the Earth, is being debated at the FDA, and other regulatory agencies, as well as in academia and on the internet.

For an interesting debate on the subject, consult the work by Andrew Maynard, the director of Risk Science Center at the University of Michigan School of Public Health.¹³

More energy must be expended in these positive directions to counteract the dissemination of inaccuracies and false information in the media. To this end, I have organized a mini-symposium at the HBA conference in New York City, which will be held at the Jacob Javits Convention Center, Sept. 28-30, 2010. It will feature a number of prominent scientists with timely presentations by Dr. Wang, Uli Osterwalder (BASF), Dr. Olga Dueva-Koganov (IBT) and Dr. Charles Jones (Dow Chemical). Topics will include skin cancer, a response to the negative allegations especially the presence of retinyl palmitate in sunscreens, testing of sunscreens, photo protection with inorganic particulates, the ideal sunscreen and, of course, regulatory concerns. I initially invited Dr. Matthew Holman from the FDA but he declined. His presence would have been crucial in view of the publication of the Final Monograph in

October 2010. Although, to date, no announcement from the FDA has been made, presumably the status of the Time and Extent Application (TEA) ingredients should have been finalized in July.

Weigh the Facts

All parties, including the concerned groups and citizens, the sunscreen industry, the FDA and legislators, must weigh the facts carefully and apply due diligence and good science prior to broadcasting far-reaching conclusions. The adoption of final regulations should be a decision based on sound scientific facts. We cannot issue verdicts based on a frenzy of reactionary reporting. Green Jobs Czar Van Jones was forced to resign from the Obama Administration last September. He said about the rapid-fire media world, "the moral is that when people make up a rash decision based on sound bites, they are playing spin-doctor instead of acting upon the whole truth."¹⁴

Dialogue is crucial in the development of the science used for sunscreen products that are vital for the effective protection of a vulnerable population. Promoting the use of sunscreens as a primary protocol in protection from the skin cancers and the harmful rays of the sun is defensible! •

References

1. www.storyofstuff.org
2. www.personalcarecouncil.org
3. pressroom.cancer.org/index.php?s=43&item=256
4. frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h5786h.txt.pdf
5. www.govtrack.us/congress.bill.xpd?bill=h111-759
6. www.cosmeticbusiness.com/news/article_page/cosmetic_bootcamp_says_sunscreen_benefits_outweigh_the_risks/55230
7. E. Jungman and H. Maibach, "Enhancing Sunscreen Efficacy for Realistic Applications," 2010, *Cosmetics and Toiletries*, 125(7), pp 28-31.
8. www.aad.org/media/background_news, "Analysis finds sunscreens containing Retinyl Palmitate do not cause skin cancer", August 10, 2010.
9. www.sunaware.org/2010/08/11.
10. Z. Abdel Malek, et al., "Melanocortin 1 receptor genotype: an important determinant of the damage response of melanocytes to UV radiation" 2010, *Face B*, 10-158485
11. www.sciencedaily.com/releases/2010/07/100719162955/html
12. P. Moos, et al., "Zinc oxide particulate matter requires cell contact for toxicity in human colon cancer cells," 2010, *Chem. Res. Toxicol.*, 23 (4), pp. 733-739.
13. A. Maynard, "Reflection on the safety of nanotechnology-based sunscreens," <http://www.ieet.org/index.php/ieet/more/maynard20100719>
14. www.blogs.wsj.com/washwire/2010/07/23/van-jones/on-sherrod-a-teachable-moment