

Beautiful Skin... From the Laboratory to Retail Markets

Idebenone Still the Leading Antioxidant ...Continued Use in Cosmetic Formulations that Boast Powerful Skincare Results and the Science that is Upholding Retail Sales.

Abstract

Electron Microscopy can tell us a great deal about healthy and damaged cells. Its nano-technology provides up close and personal details about the science of a new product. However, to the average consumer it translates as a foreign language. The real proof behind microscopic success in cosmetic science is the tangible results consumers can see. Laboratory science and winning formulations that lead to retail profits due to customer satisfaction might be considered beauty in a bottle. To the chemist it is good science that supports label claims and provides consumer benefits. To the consumer it's good packaging and appearance with great results. Often worlds apart, researchers and consumers are brought together in a happy medium through strategic marketing which provide excellent reasons for discussions of formulations that lead to billion dollar sales in cosmetics and the beauty industry.



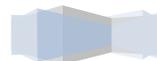
The Benefits of Idebenone

It is not surprising that topical facial cosmetic including idebenone is a top pick. The ingredient could be considered a 3-n-1 combo that reduces aging due to excess exposure to the sun and wind, as well as cigarette smoke. With its anti-inflammatory properties, it is often used in skincare products, especially anti-aging creams and serums. What the average consumer doesn't know is that idebenone may reduce nerve cell damage induced by ischemia- adding to its appeal (Baumann 2005). While the intricacies of the science may be unknown leading brands with \$1 Billion dollar sales have capitalized on the benefits. (Elizabeth Arden Annual Report 2013)

The Results

According to Elizabeth Arden Prevage idebenone has everything a woman wants, including its ability to make one look young. A study conducted by the cosmetic company indicates that 70% of women ages 25-65 chose the product over other name brands. These numbers are the result of 2-week consumer test.

Winning Formulations



Prevage is using Idebenone in conjunction with Arazine which delivers its skin renewal benefits due to its cysteine amino acid building blocks which support keratin growth in the skin. Formulas containing 0.5%-1.00% can see an increase in hydration of up to 37% including a 29% reduction in facial wrinkles and fine lines. (McDaniel, DH., Neudecker, BA., DiNardo, JC., Lewis, JA., & Maiback, HI (2005). These major results were visible only after a 6 week trial use of the ingredient. These results make it clear why idebenone is preferred in cosmetic formulations and among women across generations.

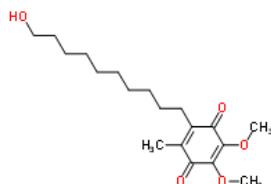


Figure 1 Idebenone Chemical Formula

Skin Renewal

Known antioxidants include vitamin A, C,E selenium often found in mango, mangosteen, blueberries, oranges, acai, and goji berries (to name a few) aid in reducing free radicals which is significant to anti-aging claims. Results show there is great advantage to formulas using idebenone, a synthetic formulation to coenzyme Q10. *Ubiquinone/ Coenzyme Q10* is the natural compound found in tissue organs and used to preserve major organs prior to transplant. A characteristic scientist find attractive in cosmetic applications.

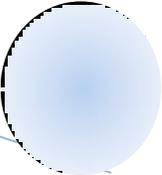
What's Next in Formulating Applications

Using natural Coenzyme Q10 is not cost affordable to the end product, a likely downside to the average consumer. Therefore a synthetic is desirable if a reduction in overhead cost can be realized in commercial manufacturing. A slight increase in consumer pricing compared to other brands is not surprising given the effectiveness and main ingredients unique features.

Future success might just be a collagen serum with a novel formula of antioxidants such as tea extracts, fruit and other types of free radical reducing complexes. Whatever the combination, the chemist who introduces a natural alternative or synthetic version of *idebenone* is sure to be praised for delivering "beauty in a bottle".

Forecasted profits a good sign for research and development investments

It's believed that a yearly demand in cosmetic chemicals will reach an estimated 9 billion by 2016 with opportunities for new products in the area of skincare. In May 2012 PR Newswire projected that rapid growth would be favorable in the organic, ethnic and anti-aging products.



There is a market for specialty chemical products that include natural extracts and nanotechnology. R&D investments to achieve an idebenone rival would be promising for new market products.

References:

Elizabeth Arden Annual Report 2013

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McDaniel, DH., Neudecker, BA., DiNardo, JC., Lewis, JA., & Maiback, HI (2005). Clinical Efficacy Assessment in Photodamaged Skin of 0.5% and 1.0% Idebenone. *Journal of Cosmetic Dermatology* , 4(), 167-173.

