

USC Alumni Newsletter

The Makucell Marvel: from molecule to market

Late in 2006, Dr. Michael Kahn was recruited to USC from the University of Washington and the Institute for Chemical Genomics in Seattle, Washington, as the first professor named in the USC Provost's new initiative to hire interdisciplinary researchers. As evidenced by his titles — a joint appointment in both the Department of Biochemistry and Molecular Biology at the Keck School of Medicine and the Department of Pharmacology in the School of Pharmacy, *and* co-leader of the GI Oncology Program at the Norris Comprehensive Cancer Center — he is at once a chemist and cellular biologist. However, lest anyone be swayed by titles, he is equally proficient at entrepreneurship, translating the intellectual property developed over years of work in his lab to novel chemotherapeutic agents and subsequently, creating start-up companies to bring the intellectual property and products to market.

USC has been the perfect environment for Dr. Kahn. He continued his pioneering research and brought his newest company, Makucell, to fruition through the Stevens Institute for Innovation, the university's center devoted to nurturing key relationships within a robust ecosystem designed to support USC research scientists. By encouraging communication, access to intellectual property and sources of funding, the Stevens Institute provides a fertile environment to foster early stage product development; USC scientists have the opportunity to translate intellectual property into marketable technologies and products, and the network of key relationships to go to market. Makucell is an excellent example of the effectiveness of the Institute's approach and impact.

Dr. Kahn's lab is a leader in chemical genomics — the use of small molecules to dissect complex signaling pathways. Initially, the lab focused on Wnt signaling in development, cancer and cancer stem cells. As studies progressed, Dr. Kahn noted the class of molecules he was testing had a definitively beneficial impact on skin and hair growth; once perfected and patented, the molecule and technology named, Asymmtrate™ (due to its induction of asymmetric divisions), could be commercialized with a potential enormous upside. With the patented technology platform and intellectual property in place, he worked with the Stevens Institute to found Makucell, Inc.

Dr. Kahn became Board Chairman of the new company which is dedicated to the development, manufacture and distribution of non-prescriptive topical products formulated to address the challenges of aging skin. In March, 2012, Makucell announced its distinguished senior management team: Lawrence A. Rheins, Ph.D., President and CEO, Vice President and Chief Medical Officer, Mark Dahl, MD, Vice President for Product Development, Allison Wren, Ph.D., and Michael Casanova, Vice President of Sales.

"The members of Makucell's senior management team are all leaders in the commercial skin care business, scientific research and medical dermatology fields, each with more than 20 years of experience."

Michael Kahn, Ph.D., Makucell Co-Founder and Board Chairman

Stem Cells and Skin Aging

In order to function properly, skin cells must continuously replace themselves. These replacement skin cells arise from skin stem cells. The number of stem cells remains relatively constant throughout life. However, as we age, stem cell *divisions* become sluggish and occur less frequently, slowing the activities that make skin youthful looking.

The Science Behind Makucell's New Approach

The decision of the skin stem cells to remain dormant, divide or differentiate (become normal, active tissue cells) is critical, and determined by the body's signal pathways. Multiple paths funnel into a

common signaling pathway called “Wnt” (pronounced “wint”). Asymmtrate™, is a selective modulator of the Wnt signaling pathway and encourages optimal signaling. Optimal signaling stimulates the skin stem cells to begin the process leading to more skin cells such as fibroblasts, which produce collagen, elastic tissue, and other substances in the supporting skin matrix. The end result of using the Renewnt™ products containing Asymmtrate™ is tighter, more luminous and younger-looking skin. ***This essential regenerative process is the key differentiator in Makucell’s Renewnt™ skin care products.***

Makucell launched Renewnt™, (pronounced “Re-new-int”), its revolutionary new skin care line using this unique science and novel approach to cellular aging, at the American Academy of Dermatology’s (“AAD”) 70th Annual Meeting in San Diego, the third week in March, 2012. Not a retinoid, nor a botanical, not a growth mediating protein, biologic, or antioxidant, the Renewnt™ brand proprietary molecule, Asymmtrate™, is an original technology platform never before offered in the cosmeceutical market. Dr. Mark Dahl, Chief Medical Officer, past president of the AAD and former Chair of the Department of Dermatology of Mayo Clinic Arizona, formulated the Renewnt™ brand portfolio of non-prescription products. The products have been clinically tested for safety and efficacy.

Each product targets a specific area of the body, and all Renewnt™ formulations reduce the appearance of fine lines, wrinkles, roughness, thinning skin and pigment irregularities. Products include a day/night moisturizer, brightener serum to even-out spots and skin tone, strengthener for fragile skin on the hands and arms, and tightener for the neck and décolleté.

“Renewnt™ is an easy-to-use product line that produces visible results without a prescription or an exorbitant price tag. It is currently offered exclusively through aesthetic skincare professionals.”

**Lawrence Rheins, Ph.D.
President & CEO**

The launch of Renewnt™ is the culmination of years of laboratory research by a gifted team at the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at the Keck School of Medicine, along with the tremendous commitment and initiative of the Makucell senior managers. Dr. Kahn led the Broad Center team which developed the technology commented, “We believe that our proprietary molecule, Asymmtrate™, is a real breakthrough — a research advance transferred to a technology platform used in skin care designed to combat the visible signs of aging. As the skin’s

texture and strength improves, it has a rejuvenated, more youthful appearance.” Makucell has a full portfolio of products in its pipeline directed toward improving the appearance of skin, hair and nails which uses the Asymmtrate™ core technology platform.

For additional information and investment inquiries, please contact Lawrence Rheins at: lrheins@makucellinc.com or 1-855-MAKUCELL.