SCCoop

The Midwest Chapter of the Society of Cosmetic Chemists

September 2013 • Vol. XLV No. 6

Next Meeting: September 10th

Dave and Buster's and Residence Inn Canal (Indianapolis)

Please RSVP to Reservations@ midwestscc.org
The Meeting is Free
Dinner is $35 for Members, $45 for Non-Members, $20 for Emeritus and Retired Members
There will be a $10 no show fee

This Issue

LOCAL SCC EVENTS

Save the Date:
Technical Symposium
October 10

2013 MWSCC Dinner and Education Meetings

September 10
November 12

Additional Events

Teamworks 2014
April 9, 2014

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Newsletter editor is Janelle Asumang: Newsletter@midwestscc.org or Phone (317) 544-9204

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MWSCC CHAPTER EDUCATIONAL DINNER MEETING

"Legal Environment Impact on Cosmetic Companies"
Steven M. Gerenraich, Foley & Lardner LLP

Abstract

Please visit www.midwestscc.org for the abstract.

Biography

Steven M. Gerenraich is a partner with Foley & Lardner LLP. He is a member of the Transactional & Securities and Private Equity & Venture Capital Practices as well as the Health Care and Food & Beverage Industry Teams. His practice focuses in the areas of mergers & acquisitions (M&A), private equity and venture capital, joint venture and other commercial transactions, with a focus on health care, health care related companies, and the food industry.

Mr. Gerenraich also represents manufacturers, processors, operators and private equity and other investors in a wide variety of food and food service related transactions, including acquisitions and divestitures, both in and out of bankruptcy; financings; co-packing arrangements; joint venture agreements and general corporate counseling matters.

Mr. Gerenraich also works with companies in a variety of industries for day-to-day legal and business issues , including securities law compliance, corporate governance, supply agreements, sales representative agreements, licensing arrangements, employment agreements, consulting agreements and purchase arrangements, as well as more complex commercial arrangements such as joint ventures and other strategic alliances.

Prior to joining Foley, Mr. Gerenraich practiced with Freeborn & Peters. He speaks Mandarin Chinese and was a sales and marketing coordinator for Chrysler in Taiwan for more than three years.

Mr. Gerenraich is a magna cum laude graduate of the University of Illinois Law School (1996). His bachelor of arts degree was awarded, with honors, by the University of Michigan in 1989.

SCC

Midwest Chapter 2013 Board Members

Tom's Fireside Chat...

Dear MWSCC,

Greetings again colleagues and friends. It's time to start thinking about upcoming MWSCC events again to close out a wonderful 2013. Before we go into the new programs, I'd like to thank everyone who organized and participated in our events up to this point. Special thanks to Margie Best for a wonderful Social/Educational Night. Also a big thank you to Mike Mack and George Concar for an excellent MWSCC Golf Outing that just took place. As far as our upcoming events go:

1. We have our next Educational Dinner meeting on September 10th. The venue will be at Dave & Buster's, and keep an eye on the website for the address. We're very lucky to have Foley and Lardner as our educators, speaking on topics such as Patents, Confidential Information, and other relevant legal topics of interest.
2. Our Technical Symposium will be Thursday October 10th. The venue is Belvedere Events and Banquets. We have 8 excellent speakers lined up to discuss "The Future of Formulation." You won't want to miss this event
3. The Teamworks committee has been hard at work during our break. Teamworks booths are now available, please visit www.midwestscc.org for more details and how to sponsor/sign up!

As it turns out, it is time to update our MWSCC logo! Our previous logo references that Michigan is part of the territory of our chapter, so let's put together an updated version, less region specific and more focused on our meetings located in Chicago. Any member interested in submitting a logo design is encouraged to do so and there will be a special prize for the winner!

Next year will be our 65th anniversary as a chapter. You may not know this, but the MWSCC was the very first official chapter of the SCC in the US. We have a very long and proud history, and we're looking for volunteers to help assemble a 65th anniversary book. If you're interested, please let me know.

I'm very happy to mention that Gina Cosby has been hard at work with our newly formed Community Outreach committee. I know she has several events already planned, and the city of Chicago is starting to learn about our group. If you're interested in volunteering for these activities, which include teaching children about the Cosmetic Sciences, please let Gina know.

If we haven't seen you for a while, try your best to make it to one of our upcoming Dinner Meetings or the Technical Symposium. It's going to be an amazing time and it's always good to see friendly faces.

Best,
Tom

September 10th MWSCC Chapter Meeting
TWO Locations - Skype Event!

Chicago Area Venue:

Dave & Buster's
1155 North Swift Road
Addison, IL 60101
(630) 543-8642

Schedule:

5:00 pm CST Board Meeting
5:30 pm CST Cocktail Hour
6:30 pm CST Speaker
7:30 pm CST Dinner

Menu:
Fiesta Buffet

Grilled fajita steak and chicken with peppers and onions
Spicy taco beef and spicy chicken
Crispy taco shells and soft flour tortillas
Tortilla Chips with queso and fire-roasted salsa
Spicy rice medley
Black Beans

Indianapolis Area Venue:

Residence Inn by Marriott at the Canal
350 West New York Street
Indianapolis, IN 46205
(317) 822-0840

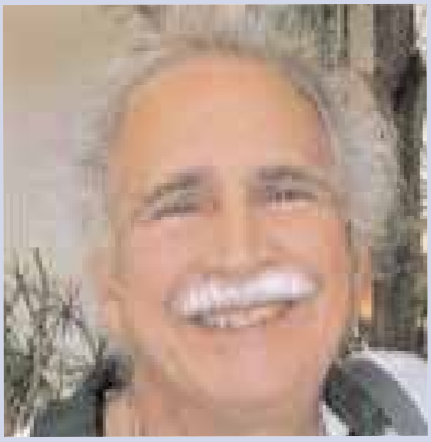
Schedule:

6:30 pm EST Dinner
7:30 pm EST Speaker

Menu:
Italian Dinner Buffet

Manicotti Stuffed with Ricotta Cheese &
Grilled Chicken Topped with Fresh Vegetables
Penne Pasta Tossed in Basil Tomato Sauce
Garlic Bread
Green Beans
Caesar Salad

Social Night Photos



Barry Pava, 69, resident of Palm Coast, Florida, passed away June 6, 2013. He was born December 15,1943 to Joseph and Rose Pava. He is survived by his long-time companion Jessica Meyer; daughters and granddaughters. Barry was awarded a full-ride scholarship to the University of Illinois and graduated with a degree in chemistry. He was both a gifted student and athlete.

Barry spent a career (over 40 years) as an accomplished chemist, perfumer, formulator and marketer working with some of the largest and most famous companies in the world such as Florasynth and American Vitamin Company. He has been associated with some of the best upscale brands in the USA. Barry was an old-time member of the STINKERS and Midwest SCC and will be missed by many of us.

He was always ready with a few funny comments. He enjoyed solving the New York Times crossword puzzles and was passionately involved with animal rescue services as well as a food and wine epicure. Barry will be fondly remembered for his wit and humor as well as his genius IQ. He was a loving father and a dear and loyal friend.

Calendar of Events

Sep 19-21, 2013	2013 Sunscreen Symposium, Orlando, FL "Beyond Broad Spectrum: The Next Horizon of Sun Care", for more information visit www.flscc.org
Sept. 24 & 25, 2013	California SCC 2013 Suppliers Day, Long Beach Convention Center, for more information visit http://www.caliscc.org/
Oct 23-24, 2013	Personal Care Products Council (PCPC) 2013 Cosmetic Science Symposium & Expo, Newark, NJ, for more information visit www.personalcarecouncil.org/live-meeting/2013-cosmetic-science-symposium
December 12-13, 2013	2013 Annual Scientific Meeting and Technology Showcase, New York, for more information, visit www.scconline.org.

SCC Continuing Education

September 12, 2013	PRACTICAL COSMETIC PRODUCT DEVELOPMENT*
September 12, 2013	ORGANIC CHEMISTRY FOR THE COSMETIC CHEMIST*
September 23, 2013	BASIC CELL BIOLOGY, SKIN CELLS AND CELL-TARGETED INGREDIENTS*
October 23-24, 2013	INTRODUCTION TO POLYMER SCIENCE AND ITS APPLICATIONS IN THE COSMETIC INDUSTRY
November 14, 2013	SKIN DISEASES AND DERMATOPHARMACOLOGY*
November 14-15, 2013	REGULATORY UPDATE
December 11, 2013	MOLECULAR BIOLOGY, GENE EXPRESSION FOR THE COSMETIC CHEMIST
December 11, 2013	LOW-ENERGY EMULSIFICATION*

*NEW COURSE
For more information, visit www.scconline.org.

VOLUNTEERS NEEDED

The Chapter is always looking for folks to help with running things; everything from finding speakers, helping to plan events, and run for elected office. There are plenty of people who are willing to assist anyone who would like to volunteer. Your volunteering would not only be beneficial to the Chapter, which of course it would, but can help you to demonstrate your organizational/leadership skills - always helpful when looking to enhance your career.

The Midwest Chapter is what it is today because of those who volunteer their time and energy.

You can help take our Chapter to the next level by making your contribution. If you are interested contact: Tom Lehman at **Chair@midwestscc.org** for more information.

Allosterism: How to Boost Signaling Molecules

Hervé OFFREDO - Senior VP & Marketing, BARNET PRODUCTS, USA

INTRODUCTION

The function, structure and beauty, of the skin are maintained via a well-coordinated and highly regulated epidermal and dermal metabolism. The metabolism is controlled by endogenous growth factors including many which bind to receptors on both fibroblast and keratinocytes cell membranes. During aging the activity of many growth factor decreases and in many case receptor binding is decreased, either via a reduced number of available receptors, or binding affinity, or decreased effector concentration. The end result is an altered metabolism and the skin looks older.

Allosteric modulation results from the binding of allosteric modulators at a different site other than the active site and enhances or inhibits the effects of the endogenous ligand .The modulation typically acts by causing a conformational change in a receptor molecule , which results in a change in the binding affinity of the ligand . The pharmaceutical industry uses this approach to their advantage in drug development. Inspired by this approach, we looked at an under explored method of allosteric activation with the use of active fractions to modify the cell membrane structure. Receptors and enzymes are embedded throughout cellular membranes. The biophysical structure and composition of the surrounding membranes can influence receptor conformation and thus activity.

I. THE VARIOUS TYPES OF SIGNALING MOLECULES

Retinoids are bioactive with receptors within the skin, but also peptides or growth factors have specialized receptors on keratinocytes, fibroblasts …such as EGF, TGF-b, etc …During aging changes in membrane form and function of the keratinocytes and fibroblasts reduce their ability to bind these factors. Thus aging cells are starved of key signals and become under stimulated.

One way to reverse the effects the aging of cellular membranes on cellular activity is to consider the concept of allosteric modulation. The concept is to develop an active which will work in synergy with numerous epidermal and dermal growth factor enhancing biological activity.

This is how the idea of an optimized blend was designed to the effect on reversing this aging process.

The complex is composed of three different components isolated from soybean: the family of polar lipids and phospholipids, the amino acid/sugars and the poly amino acids and cross linked polypeptides all obtained via extraction or fermentation. The combination of these actives is expected to modify the cell membrane structure. The theory was tested on various signaling molecules: Green Protein, Retinol and an hexyl tetrapeptide (HTP) .

II. IN VITRO TEST

A model system to measure receptor affinity on biological cell membranes evaluated was developed and we analyzed the effects of Allosteris to modify this binding. Fibroblasts were grown in culture in (early) log growth phase in a supplemented minimal medium with and without the addition of the active blend. Cells were incubated for two hours which in our test system would allow for at least three cell division cycles. To the growing cultures GFP (green fluorescent protein) was added a several concentrations and incubated for various time periods.

GFP is a natural fluorescent protein with cell binding affinity and no biological effects on fibroblasts. This placebo membrane binding protein was used because of the ease of identification (a strong emission peak at 508 nm) and lack of activity in culture so no influence on cell growth was observed. We previously determined in cultures cell numbers were the same without and without the addition of GFP.

After incubation, fibroblasts were harvested via centrifugation, washed and assessed for GFP binding via fluorescent microscopy with emission at 508nm.

Results demonstrated that incubation of growing fibroblast cells with the active blend increased the ability of GFP to bind to the membranes. As cells age membrane structure becomes disorganized and the membrane segments into active fluid domains and less active or inactive crystalline domains. The crystalline domains have almost no biological function, receptor sites are inactive, and binding of external proteins is minimized.

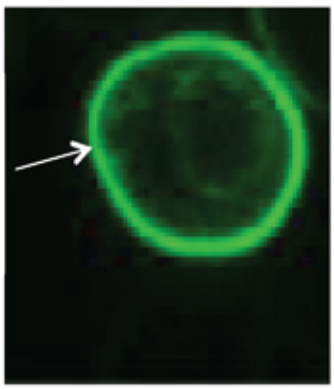
The active, because of unique lipids, will bind to membranes and increase fluidity, minimizing the per cent of non-functional membrane domains. As the results show at the highest concentration Allosteris more than doubled binding of GFP to membranes (Table 1).

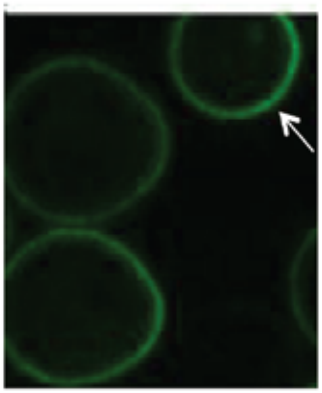
Table 1

Test Cell	Addition	Incubation Time	Fluorescence at nm
Fibroblast	None	2 hours	1.00* normalized
	0.01mg/ml AL		1.23
	0.07mg/ml AL		2.04
	0.15mg/ml AL		2.56

Another system used were engineered liposomes.

The active boosts the receptivity, fluorescence is increased





Fluorescence without the active

Pictures were taken by a Leica DFC345FX.

III. IN VIVO TESTING

The dansyl chloride technique was used to measure rates of skin cell turnover. Briefly the stratum corneum is stained with fluorescent dansyl chloride by applying semi-occlusive patches of 5 % dansyl chloride milled into petrolatum for 24 hours. After assuring that the stain is completely taken up by the stratum corneum layers by viewing under a quartz mineral lamp, subject will be instructed to apply water or to test the product. Visual inspection of the sites under UV lamp will be made until the stain disappears reflecting the time (in days) required for complete turnover of the full thickness stratum corneum . The allosteric activation is checked with retinol and HTP.

A. Retinol / Retinoid

Retinoids have been well studied , applied on the skin they can reduce the signs of aging and this results in changes in both the dermis and epidermis .Cells from both these regions have defined receptors retinoid binding proteins (RBP) which bind extracellular retinoids and mediate a change in bio-cellular metabolism , resulting in a rejuvenating effect . Studies have also demonstrated however that during aging the activity or the number of receptors decreases resulting in a general slowing of metabolism. As the receptor activity is decreased higher concentrations of retinoids are necessary, leading to untoward side effects: irritation for example.

Retinol is a known cell renewal agent, increasing rates by more than 30 % however at higher concentrations it can have serious side effects .In this study we tested retinol alone and in combination with Allosteris in a simple gel system . From previous evaluation we learnt that 0.1 % of retinol achieve a desirable reduction in cell replacement times of more than 20 %; therefore that concentration is the benchmark.

As Table 2 is showing 0.1 % of retinol is very effective but at this level some consumers starts to get irritation. However with 3 times less retinol, at a level of 0.03 % in combination with Allosteris at 0.5 % there was no significant loss in cell renewal activity. This allows for the development of retinoid(ol) based anti–aging products with much less retinoid and much less potential for irritation and photosensitization.

Table 2

Retinol Concentration	Blend Concentration	Pre-Study Replacement Time	Post Treatment Replacement Time	% Change in Rate
0	1%	19.4	18.6	4%
0.03%	0	19.4	18.2	6%
0.05%	0	20.6	18.4	10%
0.10%	0	20.2	15.1	25%
0.03%	0.5%	20.4	16.1	22%
0.03%	1%	20.3	16	22%
0.05%	1%`	19.9	15.3	24%

B. Hexyl –tetrapeptide (HTP)

We also examinated the activity magnifying of Allosteris on a bioactive peptide (HTP) .
HTP works well at 3 % but this high concentration has an impact on the cost of the formula …Using Allosteris at 2 % with 0.3 % of HTP (one tenth of its original concentration) yielded increases in cell renewal rates equivalent to the 3 % concentration as reported in table 3.

Table 3

HTP Concentrate	Blend Concentration	Pre-Study Replacement Time	Post Treatment Replacement Time	% Change in Rate
0	1%	19.4	18.6	4%
0.5%	0	20	18.2	9%
3%	0	19.6	16.7	18%
0.3%	2%	19.2	16.1	16%
0.5%	1%	20.3	17.2	15%
0.5%	2%	19.9	16	20%
3%	1%	18.9	14.4	23%

CONCLUSION

Inspired by the magnifying effect of the allosteric modulation commonly used in the pharmaceutical industry we developed a soy based active. Tested in vitro we proved that the membrane receptivity of the cells was improved.
Tested in vivo this active was able to show the opportunity to reduce the potential irritation of retinol by using less of it for the same final results.
Tested in vivo with a signaling peptide the active allows for a reduction of the use level of an expensive active, the advantage here is economic.
In the future it will be possible to evaluate further this active to boost other signaling molecules.

Herve Offredo

Bibliography

1. Shiraha H et al.; The Journal of Biological Chemistry (2000); “Aging fibroblasts present reduced epidermal growth factor (EGF) responsiveness due to preferential loss of EGF receptors”; (275): 19343-19351.
2. Roth GS; Federation Proceedings (1979); “Hormone receptor changes during adulthood and senescence: significance for aging research”; 38(5):1910-4.

DF http://www.scientificamerican.com/article.cfm?id=a-biochemical-way-to-reduce "

MWSCC FALL TECHNICAL SYMPOSIUM

Thursday, October 10th 2013

Belvedere Events and Banquets
1170 West Devon
Elk Grove Village, IL 60007

During the Technical Symposium, a Student Poster Session will be held from 9 a.m. - 3 p.m.

We are looking for students from across the Nation to present their scientific work.

The posters will be judged and awards will be given. This will be a great opportunity for students to present their ideas and findings and meet members of the MWSCC.

If you would like to submit an abstract for a student poster, please write to symposium@midwestscc.org .

Microbiologist
Alliant Formulations

Alliant Formulations is a cosmetic and OTC manufacturing facility. Full-Time Microbiologist needed for a fast paced laboratory environment in Quality Control.

Microbiologist Duties and Responsibilities Include:

- Testing and releasing incoming raw materials, in-process and finished products
- Administer final microbiology reports and give final release to products
- Participate in ISO and customer audits and FDA inspections
- Assist with issuing and enforcing Corrective and Preventive Actions when incident reports are issued
- Perform environmental and equipment testing on a regular basis
- Perform other types of qualitative and quantitative testing as needed

Microbiologist interacts with all levels of personnel internally and communicates with customers. Good writing and verbal communication skills required. Must have the ability to work with all levels of personnel.

Education required - Bachelor's Degree in Microbiology, Biology or related field.

If interested, please email Todd Kamal at talhak@raanicorp.com.

SCCoop

Midwest Chapter of the Society of Cosmetic Chemists

Janelle Asumang, Newsletter Editor
Midwest SCC Chapter
4740 N. Cumberland Ave. #364
Chicago, IL 60656