

nutmeg newsletter



February 2021

CTSCC 2021 Executive Board Members



Jennifer Macary

Henkel

Chair

See Jen's member profile in the January 2020 newsletter.



Faith Corbo

Alzo

Chair-Elect

See Faith's member profile in the September 2019 newsletter.



Tiffany Fielder

Henkel

Treasurer, Employment

See Tiffany's member profile in the November 2020 newsletter.



Nina Miotto

Henkel

Secretary, Website

See Nina's member profile in the October 2019 newsletter.



Susan Sperring

Symrise

Advisor

See Sue's member profile in the October 2020 newsletter.

CTSCC 2021 Board Members



Michele Margherita

Brenntag Specialties

Sponsorship, Chapter Liaison



Mansi Parikh

Edgewell

Arrangements



Dan O'Neill

Charkit

Golf Outing



Yingxia Wang

Unilever

Newsletter

See Yingxia's member profile in the March 2020 newsletter.



Cynthia Valovich

Henkel

Reservations



Jaclyn Marchetta

Unilever

Sponsorship

See Jaclyn's member profile in this newsletter.



Rana Zaki

Henkel

Photographer

Inside this issue:

- Letter from the Chair
- Technology corner: Biodesigned Ingredients
- Member spotlight: Jaclyn Marchetta
- Upcoming Events

Interested in joining the board? Reach out to any board member to learn more!

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Henkel
ctscchair@gmail.com

Chair-Elect

Faith Corbo
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Advisor

Susan Sperring
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Chapter Liaison | Sponsorship

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Brenntag Specialties,
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Photographer

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Letter from the Chair

Dear CTSCC Members and Friends,

We are now well into 2021, and already it feels like a more hopeful, encouraging year. With every new person vaccinated, the reality of all being together again moves closer and closer and I for one am very optimistic that day will be here soon!

Until then, the Connecticut SCC will provide you with great information and content through our newsletter – the Nutmeg Newsletter. Our incredible editor, Yingxia Wang, did a fantastic job of delivering quality material and scientific knowledge to our members throughout 2020. Lucky for us, she has agreed to continue as our editor and provide the same great content to you in 2021! Please look out for our quarterly publications to find out more information on what our plans are for this year, as well as what educational opportunities are available to you as a CTSCC member. If you have a scientific article you would like to publish in the Newsletter, please reach out to Yingxia. If you would like to sponsor the CTSCC through an advertisement in our Newsletter, please reach out to Michele Margherita or Jaclyn Marchetta.

Since we could not celebrate with our normal end of year BBQ party, we wanted to thank everyone who continued to support the Connecticut chapter of the Society of Cosmetic Chemists by renewing their membership. As a thank you, you should all be receiving a special succulent at the address you provided. Our intention is that this little plant can bring brightness to your everyday. Thank you so much to Nina Miotto for leading this initiative and for all of her hard work thought the year.

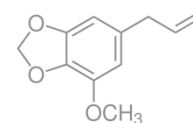
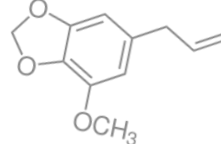
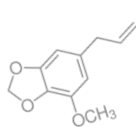
I finally would like to thank our CTSCC board members who have continued to navigate the challenges 2020 brought with positivity and comradery. I very much appreciate all of the connections I have made through the SCC, but the support of Nina, Tiffany, Sue, Faith, Yingxia, Michele, Dan, Rana, Cynthia, Jaclyn, Mansi and Patricia is next level. If you would like to join this amazing team of people, please let anyone on the board know! We are looking for anyone to help with our website, to lead our educational programing, as well as to join the 2022 board in leadership positions.

Again, keep an eye on our newsletters for information on events taking place later in the year. Until then, stay happy and healthy!



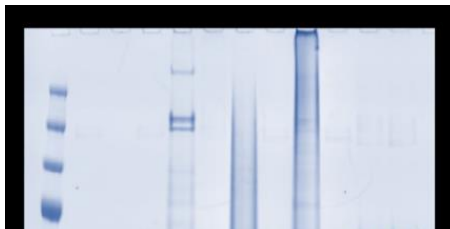
Jen Macary

2021 Chair, Connecticut Chapter
Society of Cosmetic Chemists



Technical Corner

Thank you to Beatriz Blanco for coordinating and contributing this article to the CTSCC newsletter.



Delighting Conscious Consumers with Biodesigned Ingredients

Beatriz Blanco, MS, MBA and Erin Kim, JD
Geltor



Biotechnology is technology based on biology. Biotechnology utilizes cellular and biomolecular processes to develop technologies and products which, when applied consciously, can help improve lives and consumer products, while being kinder to the planet.

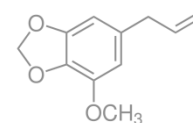
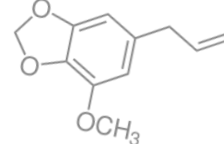
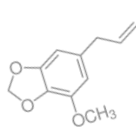
One of these biological processes is called fermentation. Fermentation is the breaking down of sugar molecules into simpler compounds by microorganisms to produce substances that can be used in making chemical energy. You're more familiar with microbial fermentation than you may think. It has been used for making bread, wine, cheese, soy sauce, and other foods and beverages for millennia. At tiny scales beyond what is visible to the naked eye, the yeasts ferment the sugars in dough, releasing CO₂ in the process. The CO₂ helps the bread to rise. As for wines and other liquors, yeasts are added to grape juice. The yeasts ferment the sugar in the juice into alcohol. Similarly, cheese is the product of bacteria fermenting milk or cream.

More recently, the Personal Care industry has also benefited from the use of fermentation. Ingredients traditionally extracted from animals such as hyaluronic acid, milk proteins and sugars, are now being produced in cleaner, biology-based processes such as fermentation.

Biology can be an even more powerful tool when it is combined with design.

Biodesign is the integration of design with biological systems in order to achieve aims like better functional performance or improved sustainability, in contrast to design that simply mimics nature or draws upon biology for inspiration. Biodesign incorporates life itself - cells, proteins, enzymes, and amino acids, for example - into the design as building blocks, material, sources, and energy generators, just to name a few possibilities. An outstanding recent example of biodesign is the production of human collagen *ex vivo*, without any human or animal inputs. For the first time, microorganisms can now make pure human collagen types via fermentation when they are provided with the collagen's amino acid sequence.

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Technical Corner

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Collagen is a well-understood protein which acts as the primary structural component of connective tissues, such as skin and cartilage, in mammals and fish. It performs a key role in the formation of fibrillar and microfibrillar networks of the extracellular matrix, basement membranes, as well as other structures of the extracellular matrix. Therefore, collagen is essential for maintaining the youthful and supple appearance of human skin.

Unfortunately for all of us, from the age of approximately 30 onwards the amount of collagen in our bodies naturally starts to decrease over time - even by as little as just 1 or 2% per year.

Traditionally, collagen has been extracted from animals such as fish and pigs. In addition to being derived from animals, this collagen is not bioidentical to human collagen and comes with an unpleasant odor. But thanks to the use of biodesign, it is now possible to produce vegan human collagen that is 100% animal-free and non-GMO certifiable. And since this collagen is identical to human collagen, it is readily bioavailable to our skin. This process is also much more environmentally friendly, because its animal-free production consumes less water, releases lower amounts of CO₂ to the atmosphere, and uses less land.

Is It Really Collagen?

Biodesigned ingredients, such as human collagen, can be substantiated as equivalent or superior to their animal-derived counterparts using several holistic methods:

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Offering superior benefits

- ✦ Extended wear
- ✦ Pigment dispersion
- ✦ Gloss & shine
- ✦ Conditioning

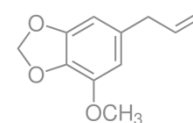
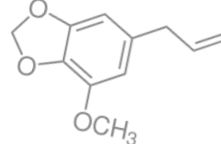
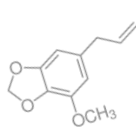
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Technical Corner

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Biochemical Characterization

Confirmation by digestion of collagenase.



Comparison of collagenase digestion of shpolypeptide-121 to commercially available collagens and BSA

Collagenase is an example of an enzyme that proteolytically digests collagens, but not other proteins. As with animal-derived collagens, the collagen derived by fermentation was treated with collagenase and digested in laboratory tests using SDS-PAGE.

Key Physical Properties

Water solubility and gelling.



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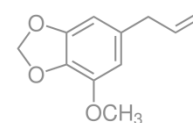
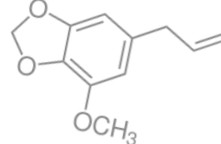
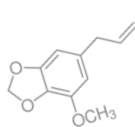
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Technical Corner

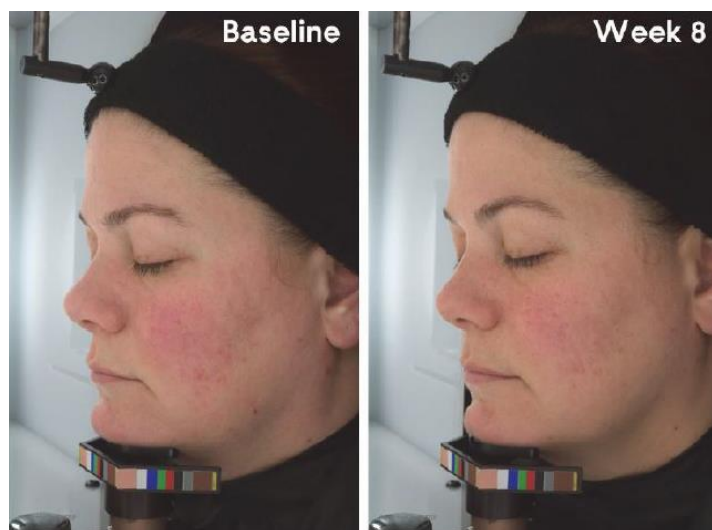
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Like commercially available collagen hydrolysates, biodesigned collagens are highly soluble in water and are valued for water-holding properties.

These collagens can form gels, and are demonstrated to have Bloom values comparable to commercial gelatins.

Functional Characteristics

Clinical results.



Subject with sh-polypeptide-121-associated reduction in facial erythema and other pertinent graphs

In human clinical trials, biodesigned human collagen outperformed animal derived collagens in areas including skin moisturization, reduction of lines and wrinkles, reduction of skin redness, stimulation of collagen production in the skin.

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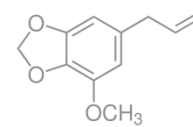
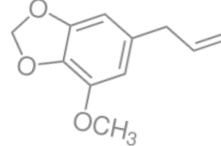
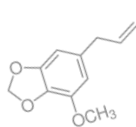
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Technical Corner

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Conclusion

Human collagen is just one example of a biodesigned ingredient, with others being developed using various biology-based technologies. Today, biodesigned ingredients are being formulated in skin creams, serums, cleansers and masks; hair masks and sprays, and hair and skin oils sold by leading brands in major global retailers.

Biodesign is allowing the Personal Care industry to address the key consumer needs for sustainability and animal-free ethics, without compromising on performance and efficacy. The conscious consumer can find delight and peace of mind in using sustainable and cruelty-free personal care products powered by biodesign.

References

www.livescience.com/collagen.html

www.designdebates.nl/_pdf/whatIsBioDesign_10-5-12.pdf



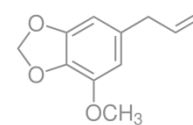
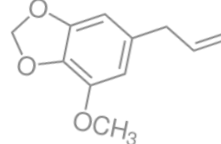
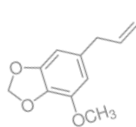
The **SCC Media Library and Resource Center** has recently unlocked all 2019 Annual Meeting lectures – now accessible FREE for SCC Members (bringing the total to over 70 free presentations). New cosmetic content has also been added to the platform including 13 recent webinars (all from 2020). Click on “My Bookshelf” once logged in to see free SCC member content.

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Member Spotlight



Jaclyn Marchetta

Scientist, Unilever

Member of CTSCC since: 2019

Member of SCC since: 2015 (started in college with the Long Island Chapter!)

How did you get into the industry? I studied chemical engineering because of my interests in math and science. After applying to many internships, I am very grateful it led me to the Unilever summer internship program and eventually a full time role within the skincare team.

What's the best part about your job? It is so rewarding to see a product come to life on shelf. I also enjoy the challenge and continuous learning each day brings. Excited to be a part of the Mele skincare launch this past January targeting melanin rich skin!

What's your favorite event that CTSCC (typically) hosts? I enjoy the speaker presentations because it is a great opportunity to connect with SCC members and learn new technical knowledge and formulation tips.

What advice would you give to someone just starting out in the industry? Continuously learn and be open to different opportunities or projects. Do not be afraid to ask questions or express new ideas. A fresh way of thinking could lead to innovative solutions!

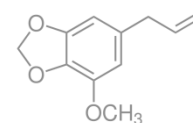
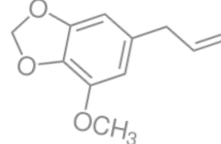
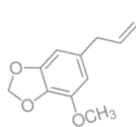
How do you see the current pandemic shifting our industry for the long term? I see the pandemic shifting our industry by prioritizing the development of products targeting well-being. I feel this will be a long term approach as beauty and skincare routines provide a sense of normalcy and self-care during these times.

Fun fact about you? I love watching the sunrise at the beach before starting a work day. It is such a beautiful view at Walnut Beach in Milford!

What was your favorite activity during lock down?

Favorite activity during lockdown was becoming certified to teach Pure Barre fitness classes! It has been an awesome challenge mentally and physically and a great community to be a part of.





Upcoming Events

Long Island Chapter: Defying Bias: The Power of Inclusivity in Driving Innovation

March 10, 2021 5PM EST
FREE

Michigan Chapter: CBD for Skin Protection and Damage Repair

March 11, 2021 12PM EST
\$7

Southwest Chapter: Innovate Sustainably with Blue Technologies

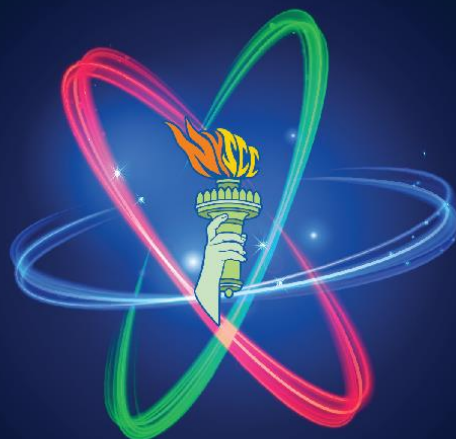
March 24, 2021 12PM CST

New York Chapter: Trends and Formulation Strategies for Gentle Cleansing

March 25, 2021 11AM EST



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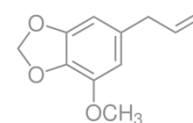
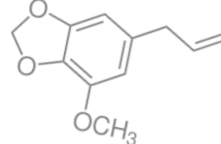
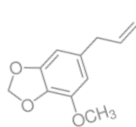
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Connect with area professionals through the newsletter!

Do you have an **employment opportunity** in the Connecticut area or beyond?

Is there a **technical article**, raw material insight, relevant writing, or other piece you'd like to share with the community?

Have you captured **photos** at CTSCC events?

Please contact Yingxia Wang to be featured in the newsletter (yingxia.wang@unilever.com).

Are you interested in supporting CTSCC with a newsletter **sponsorship**? Please contact Michele Margherita for more information (mmargherita@brenntag.com) or visit ctsc.org/advertising.



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The National Organization is dedicated to the advancement of cosmetic science. The Society strives to increase and disseminate scientific information through meetings, continuing education courses and publications. For more information please make sure to visit our website: www.ctsc.org