Developing industry-leading products that not only deliver optimal health benefits, but also fit with consumers’ everyday lifestyles, is a top priority for many supplement manufacturers. Here, we speak with Beth Tormey, Vice President, Head of Global Business Unit, Lonza Consumer Health & Nutrition, about what the company’s recent acquisition of Capsugel means for manufacturers and how its wide range of capabilities, including design, development and delivery, will help meet the discerning needs of the consumer health and nutrition market in 2018 and beyond.

What does Lonza’s acquisition of Capsugel mean for the food supplement industry?

More than ever, in the fast-paced health and nutrition market, companies need to offer better efficacy, safety and sustainability. Furthermore, brands need to be fast to market in order to address the rapidly changing set of consumer needs and preferences. At Lonza Consumer Health & Nutrition, we have worked closely with manufacturers to better understand their challenges and help them to achieve their business goals, while extending and improving product lines.

Through our new Capsugel portfolio of delivery technologies, we can now offer customers a diverse range of integrated solutions combining function and form – from ingredient sourcing and formulation, right through to enhanced dosage form capabilities and finished product concepts. In an industry where bringing products to market quickly is crucial to maintaining a competitive edge, this means that we can be more agile than ever in helping manufacturers to stay ahead of evolving consumer trends and industry legislation.

Which market segments do you see as the major growth drivers in 2018?

As consumers increasingly take a healthy aging approach, the bone and joint health category will be a major area of growth for us, with the launch of our patented UC-II® undenatured type II collagen to the European market. The UC-II® ingredient has been shown to help improve joint comfort, mobility and flexibility.1 There is also an opportunity for manufacturers of sports nutrition products to use the ingredient in formulations, right through to the enhanced dosage form capabilities and finished product concepts. In an industry where bringing products to market quickly is crucial to maintaining a competitive edge, this means that we can be more agile than ever in helping manufacturers to stay ahead of evolving consumer trends and industry legislation.

How is Lonza Consumer Health & Nutrition meeting these demands?

With a broader demographic than ever looking to lead fit and healthy lifestyles, our solutions are designed to meet these diverse needs across applications – from supplements to fortified food and beverages. For instance, our DUOCAP® capsule-in-capsule technology can combine science-backed CamuCamu L-Carnitine with probiotics, and our Licaps® liquid-filled capsule technology with vitamin B12 and choline to aid recovery and treat fatigue. We’ve also been developing additional probiotics DUOCAP® concepts for customers focusing on applications such as immune support, beauty and cardiovascular health.

What other advancements have you made recently as part of your R&D program?

One of our developments has been our Lipid Multi-Particulate (LMP) technology. As well as improving bioavailability, taste and modified delivery, LMP technology also continues to gain momentum and greater appeal among a wider demographic and will be a major growth driver across all segments. This is thanks to increased demand for supplements that meet strict criteria, which include organic, sustainable and vegetarian-certified positionings.

UC-II® UNDENATURED TYPE II COLLAGEN: A FIRST FOR EUROPE

Lonza Consumer Health & Nutrition is launching its patented UC-II® undenatured type II collagen ingredient, at this year’s Vitafoods Europe.

Backed by multiple clinical studies demonstrating that just 40 mg a day supports significant joint health benefits, this is the first time on a wide-scale basis that the high-quality undenatured type II collagen product will be available to the European market.

Driven, in part, by a rise in the number of consumers becoming proactive in leading healthier, more active lifestyles, the popularity of joint health products shows no signs of abating. Wider industry research indicates that, within Europe, Italy and the UK have seen the highest sales of food supplements carrying joint health claims, with these countries also having the most significant growth in retail value between 2012 and 2016.

Lonza’s UC-II® ingredient has been shown to support optimal joint health at low dosages, by improving comfort, mobility and flexibility. Its launch comes following a recent global survey conducted by the Natural Marketing Institute (NMI), and commissioned by Capsugel, now a Lonza company, which highlights consumer attitudes towards supplements. With results showing 85% of respondents are concerned about the scientific proof behind the ingredients they consume, the UC-II® brand presents an ideal opportunity for manufacturers to create compelling, science-backed products that appeal to consumers’ evolving needs.

Jim Lugo, Chief Scientific Officer, Lonza Consumer Health & Nutrition, will further explore the ingredient’s benefits at the Ingredients Theatre during Vitafoods Europe. The presentation titled: “UC-II® undenatured type II collagen: healthy joints start here” will be held on May 16 at 3pm. Or visit the team on-booth to discover a range of new finished product concepts containing Lonza’s UC-II® ingredient.

5 NMI SORD Proprietary Report for Capsugel – UK – 1,000 participants on-line, 2015.

STUDY POSITIONS UC-II® UNDENATURED TYPE II COLLAGEN AS LEADER IN JOINT HEALTH MARKET

Research recently published in Osteoarthritis & Cartilage provides further validation for Lonza’s UC-II® brand as a leader in the joint health ingredient space. The study demonstrated that UC-II® undenatured type II collagen diminished deterioration of articular cartilage in a rat model of osteoarthritis (OA).

The dose of the UC-II® ingredient selected for the study represents the clinically tested human equivalent dose of 40 mg per day. As this small size and once-per-day frequency provides an efficacious dose, it may improve consumer compliance.

UC-II® undenatured type II collagen has been shown to help improve joint comfort, mobility and flexibility in people with OA and is statistically significantly more effective than the combination of glucosamine and chondroitin, as measured by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC).

“This new research furthers our understanding of the mechanisms through which the UC-II® brand elicits its beneficial effects,” explains Dr. Jim Lugo, Chief Scientific Officer, Lonza Consumer Health & Nutrition. “These new results also complement previously published clinical data on the UC-II® ingredient, which demonstrate statistically significant beneficial effects for healthy subjects who develop knee joint discomfort following strenuous exercise.”

3 On file (Lugo JP, 2016).
ACTIVE ADVANCEMENTS IN SPORTS NUTRITION

Worth approximately $11.9 billion and representing 5.5% of the global consumer health market, sports nutrition is one of the fastest growing segments. We sat down with Dominik Mattern, Director, Business Development, Lonza Consumer Health & Nutrition to discuss the latest developments in the category, ahead of his presentation on the topic at the Sports Nutrition Zone Theatre at 2.20pm on Tuesday May 15.

What are the factors behind the growth of the active and sports nutrition market?

Purchasing behaviors in the active and sports nutrition category are changing at a rapid rate. While such products were traditionally marketed to professional athletes and body builders, a diverse range of supplementers, beverages and fortified foods has now made its way into the mainstream. Thanks to online platforms such as health blogs and social media, shoppers are increasingly aware of how the lifestyle choices they make influence overall health, with this impacting consumption habits and driving the demand for quality, science-backed products. Our data shows that, for instance, 41% of sports nutrition supplement users are more likely to buy a supplement if it uses sustainable ingredients, while 54% of this group also state a preference for vegetarian supplements – in line with the clean label trend.

What are the key ingredients for sports nutrition?

Whether a budding fitness enthusiast or a sports professional, active consumers of all ages are looking to achieve high levels of performance at every stage of exercise. Scientific proof and trust are major requirements from consumers and have led many to turn to clinically proven ingredients such as L-Carnitine, which has been shown to offer recovery benefits. For instance, studies conducted by Lonza in collaboration with research centers have found that supplementation with Lonza’s Carnipure® L-Carnitine, a high-quality grade of the ingredient, can help to minimize tissue damage and muscle soreness after exercise. Supplementation with L-Carnitine can also help those with specific dietary needs. For instance, while vegan plant-based proteins are trending in the market, they don’t contain any natural content of L-Carnitine. To address this, brands can fortify sports nutrition products with Carnipure® L-Carnitine, enabling consumers who follow a vegan diet to benefit from a targeted dose of the ingredient. Another clinically studied ingredient for post-exercise recovery is Lonza’s UC-II® undenatured type II collagen, which can help alleviate joint wear and tear in active consumers, while also supporting mobility and flexibility.

Can you tell us more about the integrated solutions Lonza Consumer Health & Nutrition offers in this segment?

Following the acquisition of Capsugel by Lonza, we’ve been able to significantly expand our capabilities, offering integrated solutions that combine science-backed ingredients with innovative dosage forms. In the sports nutrition market, this has enabled us to create the world’s first and only liquid L-Carnitine capsule, housing Lonza’s Carnipure® L-Carnitine within our Licaps® capsule, while our patented DUOCAP® capsule-in-capsule technology allows manufacturers to pair L-Carnitine with probiotics in one convenient supplement, to support weight management and exercise recovery. At Lonza Consumer Health & Nutrition, we have also invested significantly in our range of certified vegetarian and vegan delivery systems, including our new Vcaps® Plus Spirulina capsules. The first of our next generation of innovative vegetarian food-colored capsules, Vcaps® Plus Spirulina capsules are designed to support manufacturers in creating true clean label solutions for the sports nutrition market. An example of a new finished product concept that uses the Vcaps® Plus Spirulina capsule is our ZMA® mineral formulation, which will be showcased at Vitafoods Europe.

Looking to improve the performance of nutritional actives?

Stop by booth G10 and discover the latest product concepts containing Branched Chain Amino Acids (BCAAs) and Lonza’s science-backed ResistAid® ingredient.

THE NEXT GENERATION OF CLEAN LABEL CAPSULES

Lonza Consumer Health & Nutrition has further enhanced its clean label credentials with the launch of its pioneering Vcaps® Plus Spirulina capsules. Obtained from blue-green algae, the innovative delivery system offers a naturally blue, vibrant appearance for distinctive branding, without the use of E-numbers on the label.

As the latest addition to the Capsugel plant-based capsule portfolio, Vcaps® Plus Spirulina capsules are suitable for vegetarian and vegan diets and can support customers in formulating true clean label solutions. With the range set to expand further through the introduction of new ingredient sources such as vegetables, supplement manufacturers will be able to innovate by selecting additional color options or adding a masking shade to their formulations.

What’s on at Vitafoods Europe?

**Tuesday May 15 - 2.20pm**

**Sports Nutrition: Powerful Innovation through Function and Form**

Dominik Mattern, Director, Business Development

Location: Sports Nutrition Zone Theatre

Key highlights:
- Gain insights on the sports nutrition market
- Discover innovative formulations
- Learn about science-backed ingredients

**Wednesday May 16 - 3pm**

**UC-II® undenatured type II collagen: healthy joints start here**

Jim Lugo, Chief Scientific Officer

Location: Ingredients Zone Theatre

Key highlights:
- Learn more about this science-backed, innovative ingredient
- Proven market success, to help you stay ahead of the competition
- A small, once-a-day dosage form for increased compliance

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A PRIME MARKET FOR PROBIOTICS

The probiotic supplements market has experienced rapid growth in recent years. We spoke with Morgan Laloux, Business Development Manager, Lonza Consumer Health & Nutrition, about what’s driving the demand, and the latest probiotic ingredients and delivery formats.

What are the key trends in the probiotics market?
Probiotic supplements, in particular, are showing great potential with the consumption gap between probiotic foods and probiotic supplements narrowing. Recent figures show that Western Europe is the most progressive region in Europe, Middle East and Africa, holding a 14% market share.

Are there any new or innovative ingredients or delivery systems available?
R&D efforts in this market have been focused on addressing two main hurdles associated with formulating probiotics: the stability of shelf life and how best to ensure efficient delivery of the probiotic to the appropriate site in the gastrointestinal (GI) tract. Stability is influenced by several factors, from storage humidity and dosage form, to moisture content and temperature.

Capsules continue to be the preferred choice for probiotic delivery, thanks to low-moisture and acid-resistant options that are effective in maximizing shelf life and delaying delivery to the GI tract. In addition, formulations are continuing to evolve to include Kosher and Halal probiotics, varied time-release options, and combination supplements teaming probiotics with other ingredients for added health benefits.

How is Lonza Consumer Health & Nutrition responding to the needs of this sector?
We offer a range of dosage form solutions to assure the stability and targeted delivery of probiotics in consumer health and nutrition applications. For instance, our DRCaps™ capsules are designed to protect acid-sensitive ingredients, like probiotics, from full release and disintegration in the stomach and allow for complete dissolution in the intestine.

DUOCAP® capsule-in-capsule technology is another innovative dosage form for probiotic delivery, with studies demonstrating that it can help ensure stability for up to two years without any significant loss in probiotic activity. DUOCAP® capsules also facilitate ingredient combination without direct interaction with the probiotics, as well as a two-phase release. This enables active ingredients with the science-backed efficacy of UC-II® undenatured type II collagen, for improved joint comfort and flexibility.

At Vitafoods Europe, we will be showcasing a number of DUOCAP® probiotic capsule combinations, which can be used to target emerging applications, such as immune health and sports nutrition.

WHAT’S NEW

Discover the latest innovative finished product formulations from Lonza Consumer Health & Nutrition.

**Vcaps® Plus Spirulina capsule with ZMA® formulation**
Designed to improve exercise recovery, the ZMA® mineral support formula is contained in the Vcaps® Plus Spirulina delivery system, to capitalize on the demand for leading sports nutrition supplements that meet clean label standards.

**Carnipure® L-Carnitine with Licaps® liquid-filled capsules**
A performance nutrition supplement with benefits for diverse health areas, including exercise and recovery; muscle health, healthy aging, cardiovascular health and weight management.

**DUOCAP® probiotic capsule combinations**
Innovative DUOCAP® capsule-in-capsule technology allows specialty ingredients to be used in the outer capsule, and preserves the stability of the probiotics in the inner capsule. Ideal for new applications beyond digestive support, including immune health, skin and cardiovascular health and sports nutrition.

**DUOCAP® capsules with Curcumin and UC-II® ingredients**
A DUOCAP® capsule-in-capsule solution, which combines high-performance NovaSOL® Curcumin with the science-backed efficacy of UC-II® undenatured type II collagen, for improved joint comfort and flexibility.

**Vcaps® Plus capsule with UC-II® undenatured type II collagen ingredient**
Vcaps® Plus vegetarian capsule encapsulating Lonza’s science-backed UC-II® ingredient, helping to maintain optimal joint health in one daily dosage.

**OceanCaps® Licaps® capsule with Golden Omega Omega-3**
An entirely marine concept, the innovative OceanCaps® Licaps® capsule contains a wide range of Golden Omega Omega-3 concentrates, for applications including cardiovascular health, general wellness, prenatal and brain health.

**Peppermint oil in vegetarian liquid DRcaps® capsules**
Suited for digestive health applications, peppermint oil is encapsulated in a liquid DRcaps® dosage form, to provide a delayed release and meet clean label preferences.

**Carnipure® L-Carnitine with Choline and Vitamin B12 in a Licaps® capsule**
Carnipure® L-Carnitine contained in a vegetarian Licaps® capsule, combined with Choline and Vitamin B12, to aid recovery from exercise and treat fatigue.

Explore more product concepts and delivery systems by visiting our lifestyle desk on booth G10.

For more information on any of the stories featured in this publication, visit booth G10 and speak to our team. Alternatively, go to [www.capsugel.com](http://www.capsugel.com) and [www.lonza.com](http://www.lonza.com), or email the editor of What’s Inside, Evelien Raemdonck at evelien.raemdonck@lonza.com.