The new generation of peptides for sports nutrition
The role of nutrition in sports has an important function in meeting consumers’ needs associated with physical performance, exercise stress and recovery. Diet and supplementation have been positioned to support active consumers before, during and after workout.

Physical exercise stress is well known to stimulate inflammatory processes. Inflammation is a natural and necessary response to exercise-induced muscle damage, primarily to facilitate tissue regeneration. However, recommendations given by sports nutrition in addressing physical recovery are only just emerging.

The new generation of peptides for sports nutrition

PeptATide™
Consumers understand the connection between sports, post-workout and inflammation. And they are actively looking for premium plant-based solutions to support their healthy body response. PeptAide™ is an ideal companion for active people – leisure sports to performance athletes. It contains a unique set of plant-based peptides that have been identified, quantified, scientifically tested and are patent protected.

PeptAide™ provides an outstanding protein hydrolysate with additional functionality, easily accessible amino acids with low allergenic potential and immune modulating potential to address the opportunity for sports nutrition. Health and nutrition companies can capture new opportunities in the fast-growing sports nutrition segment with the AI-identified peptides in PeptAide™ that have been shown to modulate inflammation markers relevant to muscle stress response after physical exercise.

What are peptides?

Peptides are short amino acid chains either derived from protein breakdown (hydrolysis), mainly an enzymatic process, or synthesized specifically for their biological function. In human nutrition, peptides serve three functionalities: as an easily accessible source of amino acids, as a hypoallergenic source of proteins and as biologically active peptides.

Peptides in general play an important role in human health by affecting digestive, endocrine, cardiovascular, immune and nervous systems. However, our body protects itself from dietary peptides by breaking down most of them. Still, nutritional peptides have shown functionality.
Active consumers demand plant-based health solutions

Inflammation, often perceived as pain, is a key concern of active people. It often starts with a feeling of discomfort that might turn into minor pain. It can also occur in a feeling of stiffness and soreness, preventing active people from increasing or maintaining their physical activity.

In a consumer research that was conducted, consumers were asked about the frequency of their physical activity and 69% of respondents indicated that they engaged in physical activities more than 3 times a week. 62% of these consumers agreed that recovery is a critical aspect of their post-workout plan and 67% of those polled would consume a dietary supplement to aid post-workout recovery. When asked what their preferred product of choice would be, they revealed that a sports bar containing plant-based peptides, delivering the benefits of managing inflammatory response to their body would be an ideal solution.

Inflammation = Pain

"About a year and a half ago I started experiencing pain in my right shoulder. I had it scanned and they said it seemed to be just an inflammation and no tendon damage."

"The tearing and rebuilding process causes inflammation, which causes stiffness and pain. This is all part of the regular body process."

"This year in the New York Marathon I experienced a lot of pain. So I started the anti-inflammation program (Zone Diet and fish oil). After only five weeks I do not have any inflammation at all."

"It doesn’t prevent me from working out, but every time I do, I feel a bit of discomfort and if I do too many reps of one exercise – discomfort turns into minor pain."

"Any other advice for a nagging knee? I feel some pain on the side and it is just an inflammation. Is there any other advice and cross training exercises you recommend?"

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Let the consumer talk

- 69% prefer a plant based product as it is cleaner and healthier
- 64% are extremely/highly motivated to do sports
- 49% prefer a plant based product as it is cleaner and healthier
- 55% would pay a premium price

- 67% use a dietary supplement for the workout
- 62% agree that recovery is extremely important after workout
- 64% perceive inflammation as high

- Soreness: 47%
- Pain: 18.2%
- Swelling: 17.5%
- Cramp: 8.7%
- Muscular: 5.7%
PeptAide™ was developed as part of a collaboration between BASF and Nuritas. Nuritas designed and trained algorithms using libraries on biological networks and active molecules to build highly-accurate predictors of biological activity. They further developed precise queries for peptides affecting inflammatory processes. Four peptides with potential for biological activity were finally identified by artificial intelligence. BASF developed a food-process to commercial scale, liberating a good fraction of the bioactive peptides into the protein hydrolysate.

Exercise-induced muscle damage stimulates important inflammation markers including cytokines interleukin (IL)-6 and IL-10, and C-reactive protein (CRP). IL-6 increases rapidly during exercise whereas CRP responds much slower. Although the precise biological action of muscle-derived cytokines is still uncertain, IL-6 released from contracting muscle is important in regeneration.

With PeptAide™ we introduce a unique plant-based protein hydrolysate containing a set of peptides that specifically help modulate inflammation. To verify the biological significance, we performed in silico and cell culture tests. Both systems indicated promising effects in modulating inflammation markers relevant to regeneration after physical exercise.

PeptAide™ was also assessed in a 24 hour kinetic study in healthy volunteers. The results showed that PeptAide™ was well accepted by the volunteers. Importantly, a single dose of 20g PeptAide™ transiently affected selected immune and inflammation markers assessed in blood plasma. These initial results indicate beneficial effects towards support of muscle stress response.

**PROPOSED MECHANISM**

Peptides within PeptAide™ bind TNF-α, TNF-receptors and IL-6

**Figure:** Effect of an exemplary peptide derived from PeptAide™ on TNF-α secretion in THP-1 differentiated macrophages (macrophages were pre-treated with peptide (1ng/ml) for 24h before treatment with 10 ng/ml of LPS for 5h). *p<0.05*
Our brand for your success

PeptAide™ is produced from natural brown rice and its mild plant protein taste makes it an ideal fit for various sports nutrition formats:

- Sports bars
- Sachets
- Powders & pre-mix
- Concentrations & shots
- Gel & Emulsion
- ...and many more

The peptide powder is versatile and can be easily used with other protein sources and typical sports nutrition ingredients.

For information on claims intended to be used in product marketing in specific countries please contact your BASF representative.

Identified by artificial intelligence, PeptAide™ contains a unique set of plant-based peptides that specifically help modulate inflammation. The immune-modulating effect is supported by in vitro studies and immune biomarker measurements in healthy adults.