

The power to feel good

Milk ingredients for health and performance



Arla Foods Ingredients
The essence of quality

Make the best of health with documented dairy nutrients

A demanding job, an active social life and the ability to bounce back quickly from illness... today's consumers expect a lot of themselves and their bodies. To live life to the full, they need the very best in nutrition.

Milk proteins and minerals have a proven track record within the health and performance food sector. So do we at Arla Foods Ingredients. Our world-leading expertise in the innovation and application of milk-derived ingredients provides countless opportunities for this growing mainstream market.

As part of one of Europe's largest dairy companies, our ongoing exploration of milk's nutritional content has led to many breakthroughs. International cooperation with top independent research institutes provides the documentation that

guarantees our ingredients' quality and supports their nutritional effect. All our products are fully traceable and produced by gentle processing methods.

Our health and performance solutions target functional food and sports and clinical nutrition, with a strong focus on consumer safety. Complementing them, our application concepts demonstrate new possibilities for product development and optimisation. Via our close customer relationships, we convey the benefits of our high-level technical support and flexible approach to customised ingredient development.

Work with us to meet the challenges of today's demanding consumer lifestyles. Together we can release the power of nature's most complex and most complete source of nutrition.

Partners in development

Arla Foods Ingredients has strong ties with industrial and academic partners. As a result, we have formed a consortium to work on a series of proteins identified in milk. The consortium aims to isolate and characterise bioactive milk proteins with a view to developing new, commercially viable ingredients for enhanced gut health or reduced risk of cardiovascular or inflammatory disease.

Arla Foods Ingredients supplies innovative and highly functional milk-derived ingredients with scientifically documented effects – each developed to perform in functional foods, sports products and clinical nutrition. Drawing on our broad expertise of milk components, we can develop solutions for specific applications.

Maximise the body's potential

using the most efficient and accessible protein source

Nutritious and energising bars, drinks, powders, gels and soups – the application opportunities on the sports nutrition market are fast expanding.

Both professional sportsfolk and those of us who just want to keep fit increasingly draw on sports nutrition products to restore energy, improve muscular endurance and minimise bodily wear and tear.

Whey proteins provide exactly the right fuel for achieving performance goals. Consumed before, during or after exercise, our highly bioavailable protein products rise to many of the nutrition challenges within the sporting world.

Muscle synthesis and recovery

One of the main components of muscle is protein. To develop muscular strength and endurance, it is vital to follow a diet designed to support an intensive training programme – balancing the right nutrients to obtain the desired results.

Strenuous exercise breaks down muscle tissue. To go the full distance, sports competitors are dependent on the rapid

restoration of muscle cells and energy. Studies have shown that a carbohydrate-protein diet gives a higher insulin response than a diet based on carbohydrate alone – replenishing muscle glycogen stores and equipping the body to continue tackling demanding physical activity.



Our rapidly absorbed LACPRODAN® DI-3065 whey hydrolysate is an excellent protein source and proven to stimulate an insulin response four times higher than that of intact proteins. Added to a sports nutrition product, this hydrolysate also provides the optimal combination of amino acids for muscle synthesis. If an intact protein source is required, choose one of our low-fat LACPRODAN® whey protein isolate.

Immune boosting

Periods of intensive exercise can temporarily suppress the immune system and expose individuals to an increased risk of infection. Compared to other protein sources, whey protein has a unique documented ability to boost the immune function by providing cysteine, which is essential in large quantities for the production of the tripeptide glutathione – a key component of the body's antioxidant and immune system.

LACPRODAN® ALPHA-10 is an alpha-lactalbumin enhanced whey protein concentrate with a particularly high content of cysteine, therefore an ideal ingredient for immune boosting products.



Vital nutrition every day

in convenient, energising functional foods

At every stage of life, the body faces a variety of challenges that call for a little extra 'something'. Our specific milk

fractions answer this need, contributing to the

development of health-promoting functional foods that help keep the body in shape.

Among the best sources of essential amino acids, our whey products are ideal for busy consumers who either need to maintain a balanced diet or have special nutritional needs, such as weight management or stress relief.

In meal-replacing snacks, beverages and other convenience products, we can provide many of the nutrients necessary for a healthy, energetic life.

Bone health

More than 70 million people worldwide are today affected by osteoporosis – a number that is steadily growing. Calcium and phosphorous are the most important minerals when it comes to building and maintaining a strong bone structure and guarding against osteoporosis development. Studies have shown that, years after a period of dietary supplementation with milk calcium, the gain in bone mass density is still present. In comparison, the positive effect of supplementation with inorganic calcium is reversed when supplementation ceases.

With its great milky taste, **CAPOLAC® MM-0525** provides the ideal combination of calcium and phosphorus for functional foods aimed at optimised bone health. This label-friendly, natural food ingredient also contains sodium, potassium and magnesium, which are other minerals naturally present in bone.

Cognitive performance

Everyday life makes great demands of individual powers of concentration and the ability to keep up a good performance. Functional foods fortified with phospholipids can help lighten the load – sharpening the memory, raising the stress threshold and improving the capacity for problem solving.

Much of the brain is made up of phospholipids, among them phosphatidylserine. As levels decline with age, milk phospholipids with their naturally high content of phosphatidylserine have a documented ability to improve memory and cognitive capability in the elderly and reduce the sensation of stress in younger people.

The brain serotonin function is known to promote relaxation and stress relief. In order to optimise this function, high uptake of the serotonin precursor tryptophan through the blood-brain barrier is essential. This is dependent on the ratio of plasma tryptophan to the sum of large neutral amino acids (Trp/LNAA). Clinical studies of tryptophan-rich alpha-lactalbumin have demonstrated improvements in mood and the ability to adapt to stress.

LACPRODAN® MFGM-10 with its high content of phospholipids is ideal for giving everyday performance a welcome boost. For relaxation and stress relieving products, our alpha-lactalbumin **LACPRODAN® ALPHA-10** not only has a high content of tryptophan, but is also the dietary protein source with the highest Trp/LNAA ratio.

Weight management

In an age of increasing obesity, weight management programmes are in growing demand as consumers recognise how excessive kilos can burden general



health. The macronutrient with the longest satiating effect, protein effectively dulls the appetite. Calcium has been shown to reduce fat storage in the body and encourage fat burning. Scientific research has also suggested that intake of certain whey peptides, such as caseinoglycomacropeptide, helps to suppress the appetite before a meal.

LACPRODAN® whey protein concentrates and milk calcium are an ideal combination for maximising the functional impact of weight management beverages and bars, giving the longest satiating effect and reducing body fat.

Special health effects with bioactive peptides

Bioactive peptides are emerging as the next major focus area in milk-derived nutrition with the documented ability to lower blood pressure and blood cholesterol levels. At Arla Foods Ingredients, we have the technological know-how to produce these peptides from bovine milk protein and can help you develop a specific product tailored to your application.



Nourish a faster comeback

by restoring a natural balance

A diet high in whey proteins is the best way to boost the immune system and ward off illness and disease. But no dietary strategy is foolproof. When health is compromised, whey proteins are the optimum nourishment for enhancing recovery.

Because illness is often accompanied by a small appetite, we take this into account in our solutions for clinical nutrition. Using our proteins, manufacturers can produce, for example, a clear, refreshing juice drink packed with easily absorbed nutrition. Just what the patient needs to get quickly back on their feet. Whey proteins also play an important supporting role in fighting infection and sustaining organ and muscle functions.

Prevention of muscle wasting

Muscle wasting and protein loss often occur when illness places the body under physical stress. A diet enriched with whey protein is an effective means of countering this negative development.

Our whey protein concentrates, hydrolysates and isolate represent optimum protein sources. The hydrolysate **LACPRODAN® DI-3065** provides the most easily accessible amino acids. Both **LACPRODAN® DI-3065** and our whey protein isolate **LACPRODAN® DI-9213** are ideal choices for the production of clear, refreshing beverages.

Wound healing

Surgical wounds heal faster with clinical nutrition based on whey proteins rich in the amino acid cysteine. Whey proteins further supply the amino acids necessary to increase the body's production of the antioxidant glutathione, which enhances cellular regeneration for optimised healing and immune functions.

LACPRODAN® DI-9213 and **LACPRODAN® ALPHA-10** promote wound healing due to their high content of cysteine and ability to stimulate glutathione production.

PKU treatment

The genetic disorder phenylketonuria (PKU) places strict restrictions on dietary protein. Caused by the absence or impaired activity of the hepatic enzyme phenylalanine hydroxylase, PKU renders the body unable to metabolise the amino acid phenylalanine. The need to significantly reduce or eliminate phenylalanine from the diet rules out traditional protein sources such as dairy products, meat and fish.

Our caseinoglycomacropeptide **LACPRODAN® CGMP-10** – a whey protein fraction with an extremely low phenylalanine content – is an outstanding protein source for people suffering from PKU and facilitates the production of conventional food products, such as yoghurt.



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