Bio.Revive™ Colostrum

An organic, ethical bovine colostrum for gastrointestinal health.

Organic Colostrum

Bovine colostrum contains a range of peptides and proteins that possess antimicrobial and endotoxin-neutralising effects. They also have the potential to reduce gut inflammation and promote mucosal integrity and tissue repair.

What is Colostrum?

Colostrum is the first milk produced by mammals in the first few days after birth. Calves are dependent on colostrum from their mothers to survive, as they do not get high levels of placental immunity like humans do. Colostrum also feeds the intestinal microbiota and aids the growth and development of the gastrointestinal tract[1].

The Source of our Organic Colostrum

Invivo works with highly ethical organic German suppliers who prioritise animal welfare by only collecting the surplus colostrum within 36 hours after birth. This ensures that it is calf-sparing and the calf receives what it needs from the mother directly. It also ensures that it is naturally high in immunoglobulins and lactoferrin. The milk received is tested for the absence of inhibitors, antibiotics, possible microbes and BHV1, in order to obtain a safe product.

As well as the cows living on organic farms, the farmers attach great importance to fostering happy animals. They mainly use homeopathic remedies in the treatment of sick animals, they receive massages and have soft mattresses to sleep on. They're fed with hay when they are in the stable and left on the pastures during the summer. The stables are also larger than normal with a smaller number of cows.

The colostrum is collected directly from the farms, before a special filtration process and gentle, brief heating ensures the sensitive proteins in the product are not damaged. It is then micro filtered for casein, leaving a full spectrum whey product.

Components of Colostrum

Colostrum has over 90 active constituents which play a role in immune modulation, microbial balance and intestinal integrity[1]

Bovine colostrum is a rich source of:
Immunoglobulins IgA, IgG, IgD, IgE, IgG (certified to a minimum of 35%, but often higher for IgG) - important immune regulators, stimulators and increase our defence against bacteria, virus, parasites and fungi

Lactoferrin – an antibacterial, antiviral, antioxidant, immunomodulator, and an LPS binding glycoprotein that also promotes gut repair[2]

Lactoperoxidase – inhibits both gram-negative and positive bacterial metabolism and has antiviral properties

Lysozymes – substances that help break down gram-positive bacterial walls

Interleukins (IL-1β, IL-2, IL-6, IL-17, tumour necrosis factor-α, interferon-γ) - contribute to the control of infection and inflammation through cytokine-facilitated crosstalk, pathogen recognition, and immune cell recruitment

Oligosaccharides - protect against pathogens by providing 'false' receptors and promoting the growth of beneficial microflora in the colon[3]

Growth factors – play a role in the development, maturation and repair of the tissues of the gastrointestinal tract, and other tissues around the body[4]

Insulin-like growth factor 1 (IGF-1) – helps promote muscle repair and growth[5]

Bio.Revive™ Colostrum Indications:

- To prevent or encourage repair of intestinal permeability[6,7]
- Alongside athletic training to improve immunity, muscle growth and repair and decrease damage to the intestinal lining[5]
- After bowel surgery or in short bowel syndrome to reduce LPS translocation and improve tissue repair[8,9]
- To improve the microbiota of the intestine (especially Lactobacilli and Bifidobacterium)[3]
- To prevent (and/or repair from) infectious diarrhoea[10]
- To reduce the occurrence of immunodeficiency diarrhoea[11]
- To improve SIgA production in the gastrointestinal tract[5]

Mucosal and Intestinal Lining Protection and Repair

The growth factors within colostrum are thought to contribute to the maintenance of mucosal lining integrity in the GI tract[12]. Murine models have shown a reduction in NSAID-reduced gut damage when given colostrum concomitantly[13]. In two human studies, 125 mL of colostrum was used three times a day, which also showed a reduction in damage to intestinal permeability caused by NSAIDS[14]. In other studies using colostrum after bowel surgery, lower levels of LPS translocation in the colostrum supplement group was observed[8,9].

Athletes using whey colostrum during peak training, had better intestinal permeability markers and zonulin levels than that of the control group[6]. In a similar study subjecting athletes to heat in training, the colostrum supplemented group had lower levels of markers associated with intestinal damage[7].

Antimicrobial Effects

Many factors within colostrum, such as lactoferrin, immunoglobulins, lactoperoxidase, lysozyme, and α-lactalbumin possesses direct antimicrobial activity[1]. Oligosaccharides within colostrum increase the growth of *Bifidobacterium* and *Lactobacilli*, which in turn possess antimicrobial effects[3].

In vitro studies have shown bovine colostrum to be effective against *Clostridium difficile, Escherichia coli, Staphylococcus aureus, Proteus vulgaris, Enterobacter aerogenes* and *Salmonella typhi*[15]. Numerous studies have shown bovine colostrum is beneficial in the prevention and treatment of infective gastroenteritis for both animals and humans[10].

Dosage

The dosage of colostrum used in clinical trials varies between 1 gram a day up to 20 grams a day (short term use in athletes). It is normally well tolerated with no side effects, but as it is sourced from dairy, it should be avoided by anyone with a dairy allergy.

1. Menchetti, L. et al. Potential benefits of colostrum in gastrointestinal diseases. Front. Biosci. 8, 331–351 (2016).
2. Legrand, D., Elass, E., Carpentier, M. & Mazurier, J. Lactoferrin: A modulator of immune and inflammatory responses. Cellular and Molecular Life Sciences 62, 2549–2559 (2005).
3. Gopal, P. K. & Gill, H. S. Oligosaccharides and glycoconjugates in bovine milk and colostrum. (2018). doi:10.1017/S0007114500002270
4. Playford, R. J. Peptide therapy and the gastroenterologist: Colostrum and milk-derived growth factors. Clin. Nutr. 20, 101–106 (2001).
5. Główka, N. & Woźniewicz, M. Potential use of Colostrum Bovinum supplementation in athletes – A review. Acta Sci. Pol. Technol. Aliment. 18, 115–123 (2019).
6. Hałasa, M. et al. Oral Supplementation with Bovine Colostrum Decreases Intestinal Permeability and Stool Concentrations of Zonulin in Athletes. doi:10.3390/nu9040370
7. March, D. S., Arwel, ·, Jones, W., Thatcher, R. & Davison, G. The effect of bovine colostrum supplementation on intestinal injury and circulating intestinal bacterial DNA following exercise in the heat. Eur. J. Nutr. 58, 1441–

1451 (2019).
8. Bölke, E. et al. Preoperative oral application of immunoglobulin-enriched colostrum milk and mediator response during abdominal surgery. Shock 17, 9–12 (2002).
9. Bölke, E. et al. Enteral application of an immunoglobulin-enriched colostrum milk preparation for reducing endotoxin translocation and acute phase response in patients undergoing coronary bypass surgery--a randomized placebo-controlled pilot trial. Wien. Klin. Wochenschr. 114, 923–8 (2002).
10. Mitra, A. et al. Hyperimmune cow colostrum reduces diarrhoea due to rotavirus: a double-blind, controlled clinical trial. Acta Paediatr. 84, 996–1001 (2008).
11. Florén, C. H., Chinenye, S., Elfstrand, L., Hagman, C. & Ihse, I. ColoPlus, a new product based on bovine colostrum, alleviates HIV-associated diarrhoea. Scand. J. Gastroenterol. 41, 682–686 (2006).
12. Playford, R. J., Macdonald, C. E. & Johnson, W. S. Colostrum and milk-derived peptide growth factors for the treatment of gastrointestinal disorders. (2000).
13. Döhler, J. R. & Nebermann, L. Bovine colostrum in oral treatment of enterogenic endotoxaemia in rats. Crit. Care December 6, (2002).
14. Playford, R. J. et al. Co-administration of the health food supplement, bovine colostrum, reduces the acute non-steroidal anti-inflammatory drug-induced increase in intestinal permeability. Clinical Science 100, (2001).
15. Yadav, R., Angolkar, T., Kaur, G. & S. Buttar, H. Antibacterial and Antiinflammatory Properties of Bovine Colostrum. Recent Pat. Inflamm. Allergy Drug Discov. 10, 49–53 (2016).