Pro-**Intensity**

Code: FE2018 – 30 enteric-coated vegetable capsules

Pro-Intensity is a powerful advanced combination of **16 selected probiotic strains** (10 human, 2 plant and 4 dairy), bovine **colostrum** (high proline-rich polypeptide content), **inulin** (chicory), **A.O.S.** (larch) and xylooligosaccharides (XOS). It provides a minimum of 20 billion viable bacteria per capsule with GPSTM enteric coating for optimal protection against the stomach's acid secretions.

Ingredients: Potato starch, bacterial culture (20 billion live active, healthy cells per capsule, see nutritional information), bovine colostrum (from *Bos taurus*) (**milk**), inulin (from chicory root, *Cichorium intybus*), arabinogalactan (from *Larix laricinia*), xylooligosaccharides, L-ascorbic acid (vitamin C), anti-caking agent (magnesium salts of fatty acids and silicon dioxide), GPS™ enteric coated vegetable capsule (glazing agent: hydroxypropylmethylcellulose; aqueous enteric-coating solution; purified water).

Nutritional information:	**1 capsule (392 mg)**
Lactobacillus rhamnosus UB5115[1]	7,427 billion CFU
Lactobacillus crispatus UB4719[1]	1,903 billion CFU
Lactobacillus casei UB1499[1]	1,887 billion CFU
Bifidobacterium animalis ssp. *lactis* UB3963[1]	1,427 billion CFU
Lactobacillus gasseri UB8141[1]	1,427 billion CFU
Bifidobacterium bifidum UB4280[1]	951 million CFU
Bifidobacterium breve UB8674[1]	315 million CFU
Bifidobacterium longum ssp. *infantis* UB9214[1]	315 million CFU
Bifidobacterium longum ssp. *longum* UB7691[1]	315 million CFU
Lactobacillus acidophilus UB5997[1]	26 million CFU
Lactobacillus salivarius UB4198[2]	1,427 billion CFU
Lactobacillus plantarum UB2783[2]	73 million CFU
Lactobacillus johnsonii UB3394[3]	1,903 billion CFU
Lactobacillus helveticus UB7229[3]	539 million CFU
Lactobacillus paracasei UB1978[3]	52 million CFU
Lactococcus lactis LL-23[3]	13 million CFU
Colostrum (high content of proline-rich polypeptides)	25 mg
Inulin	10 mg
Arabinogalactan (AOS)	10 mg
Xylooligosaccharides (XOS)	10 mg
Vitamin C (L-ascorbic acid)	6 mg (15% NRV*)

Source of strains: [1]human / [2]plant / [3]dairy.
CFU: Colony-Forming Unit Cells
NRV: Nutrient Reference Value in %.
The **GPS™ enteric coating** protects contents from stomach acids and delivers 100% potency to the intestines.

Size and format:

30 enteric-coated vegetable capsules

Recommended daily dose:

1–2 capsules daily. If you are taking antibiotics, take this product at least 2–3 hours before or after taking them.

Do not exceed the stated recommended daily dose.

Store preferably refrigerated.

Indications and uses:

- Crohn's disease
- Hypercholesterolaemia
- Improves the immune system and digestive function
- Antibiotic-associated diarrhoea
- Ulcerative colitis
- Diabetes mellitus
- Inflammatory bowel disease

Cautions:

Consult a health-care practitioner before using if you have fever, vomiting, bloody diarrhoea, or severe abdominal pain.
Discontinue use if symptoms of digestive upset (diarrhoea) persist or worsen beyond 3 days.
Consult a health-care practitioner if you have an immune-compromised condition (e.g. lymphoma or AIDS).

DETAILS:

PRO-INTENSITY contains a selection of scientifically proven probiotic strains, supplementary prebiotics of natural origin and a colostrum extract. It is the latest development in probiotic supplementation and is the ideal product to improve the immune system and digestive function, being essential for good health and disease resistance.

Each capsule contains more than 20 billion live cells, with a strain selection of 16 beneficial strains, including 10 of human origin. Although the origin of a probiotic strain is not the sole criterion for efficacy, strains of human origin exhibit the ability to colonise at multiple sites in the gastrointestinal tract.

The activity of the strains helps to boost immune function, disease resistance, optimal digestion and absorption of nutrients, improved vitamin synthesis, better lactose tolerance, and improved gastrointestinal transit.

Bovine colostrum from high quality sources has a high proline-rich polypeptide content. Specific immunoglobulins (IgG) and growth factors (IGF) in bovine colostrum exert their beneficial effects on the intestine, with IgGs destroying pathogenic bacteria and IGFs improving the intestinal mucosa lining.

The enteric coating of the capsule protects the product from gastric juices and ensures 100% potency.

INGREDIENTS:

LACTOBACILLUS RHAMNOSUS: this product contains the UB5115 human strain. It is one of the most widely researched probiotic species due to its tolerance to acidic conditions. This product contains more than 7.4 billion colony-forming units (CFUs) from this species.

It colonises the intestinal membranes, providing numerous health benefits: it increases lactic acid production, actively suppressing the growth of harmful bacteria such as *Salmonella* [(1)]. It is effective in preventing antibiotic-associated diarrhoea [(2)] and *Clostridium difficile*-associated diarrhoea [(3)]. It strengthens the immune system and is a good coadjuvant for the influenza vaccine [(4)]. It improves intestinal barrier function for the relief of autoimmune diseases such as arthritis [(5)] and allergies [(6)]. It improves the blood lipid profile [(7)] and reduces cholesterol [(8)]. It may prevent or relieve symptoms of post-partum depression and anxiety [(9)], regenerate the vaginal flora in women by reducing colonisation by oral bacteria and fungi [(10)], and may reduce the prevalence of gestational diabetes mellitus [(11)]. In children, it reduces the frequency and duration of diarrhoea and vomiting [(12)], rotavirus diarrhoea [(13)], and antibiotic-associated diarrhoea [(14)]. It reduces the incidence of atopic dermatitis[(15, 16)]. Drinking milk supplemented with *L. rhamnosus* reduces the risk of tooth decay in children [(17)].

LACTOBACILLUS CRISPATUS: this product contains the UB4719 human strain. Numerous studies have shown its considerable potential for maintaining the health of the female reproductive system, helping to prevent recurrent urinary tract infections, as well as bacterial vaginosis and candidiasis [(18-20)]. It is also able to modulate the immune system [(21)] and reduce allergic symptoms in mice [(22)].

LACTOBACILLUS CASEI: this product contains the UB1499 human strain. It reduces the duration and incidence of infections such as bronchitis, pneumonia and rhinopharyngitis [(23-25)]. Regarding intestinal infections, it boosts immunity against bacterial infections (e.g. *Escherichia coli*) and viral infections (e.g. influenza vaccinations) [(26-29)].

In children, it improves allergic rhinitis symptoms [(30)], helps eradicate *Helicobacter pylori* in conjunction with antibiotic therapy [(31)], is effective against viral diarrhoea[(32)], and reduces the general incidence of infections [(33)].

BIFIDOBACTERIUM ANIMALIS subsp. *LACTIS*: this product contains the UB3963 human strain. It helps reduce constipation and bloating in children and adolescents with irritable bowel syndrome [(24)]. It boosts the immune system by increasing levels of NK (natural killer) cells and polymorphonuclear leukocytes [(25)]. It helps to repair the permeability of the intestinal barrier by enhancing apical junction proteins and goblet cell population [(26)]. It reduces abdominal visceral fat in overweight people with metabolic disorders and has beneficial effects on weight control and metabolic health [(27, 28)]. It also improves glucose intolerance in animals [(29)].

LACTOBACILLUS GASSERI: this product contains the UB8141 human strain. It improves functional dyspepsia by improving gastric microbiota by helping to suppress *Helicobacter pylori* in the stomach [30]. It is also a predominant species in the vaginal flora, inhibits the adherence of pathogenic bacteria and helps in the prevention and treatment of bacterial vaginosis [31]. It has antimicrobial activity through the production of bacteriocins [32, 33], improves symptoms such as diarrhoea in Irritable Bowel Syndrome [34, 35], helps boost the immune system [36] and may help regulate allergic response [37]. Its effect on weight control has been studied in recent years. It has a reducing effect on abdominal adiposity, body weight and other measures of obesity and helps to regulate blood lipids (triglycerides, cholesterol), suggesting its beneficial impact on metabolic disorders [38-40].

BIFIDOBACTERIUM BIFIDUM: this product contains the UB4280 human strain. They are found in the mucosal lining of the last part of the small bowel and are the predominant strains that colonise the large bowel and support bowel health, hygiene, and functionality. They reduce serum cholesterol and dissolve bile salts [41, 42]. *B. bifidum* has been shown to exert antibacterial activity against *Helicobacter pylori* [43,44], reduce apoptosis in the intestinal epithelium of children with necrotising enterocolitis [45], regulate the immune system response[46-48], reduce the duration and severity of colds [47], provide anti-inflammatory activity in chronic diseases of the large bowel (e.g. irritable bowel syndrome) [49, 50], and reduce the incidence of radiotherapy-induced diarrhoea in cervical cancer patients [51].

BIFIDOBACTERIUM BREVE: this product contains the UB8674 human strain. It maintains colon homeostasis by reducing inflammation through induction of intestinal IL-10-producing Tr1 cells [52]. It protects colon function, relieves constipation, and reduces gas, bloating, and diarrhoea [52,53]. It improves ulcerative colitis symptoms [54]. It also stimulates the immune system[53,55], inhibits *Escherichia Coli* [56] and suppresses the Candida fungus [57]. It reduces fat, liver function, and systemic inflammation in people prone to obesity [58]. In neonates, it improves gastrointestinal problems by stabilising the intestinal flora [59] and reduces the incidence of necrotising enterocolitis [60]. In children with coeliac disease, it reduces the pro-inflammatory cytokine TNF-alpha [61]. It improves adverse effects in chemotherapy patients, such as fever, infections, and intestinal disorders [62].

BIFIDOBACTERIUM LONGUM subsp. *INFANTIS*: this product contains the UB9214 human strain. It is the dominant probiotic inhabiting the distal part of the small bowel and colon. It is one of the first species to colonise the infant gastrointestinal tract [63] and is critical in adults for intestinal health and immune system function [64]. It is extremely good at surviving stomach and bile acids [65] and is typically able to adhere to intestinal tissues [66]. It produces acetic acid and inhibits pathogenic bacteria [67]. It produces bacteriocins, which act against *Salmonella*, *Shigella*, and *E. coli* [68, 69]. It relieves many symptoms of Irritable Bowel Syndrome (IBS) (e.g. pain, bloating), normalises bowel movements, and regulates the IL-10/IL-12 ratio [70-72]. It reduces systemic pro-inflammatory biomarkers in chronic inflammatory diseases such as ulcerative colitis, chronic fatigue syndrome, and psoriasis, demonstrating that the immunomodulatory effects of microbiota are not limited to the mucosa but encompass the systemic immune system [73]. It can alleviate symptoms of untreated coeliac disease [74].

BIFIDOBACTERIUM LONGUM subsp. *LONGUM*: this product contains the UB7691 human strain. A protein factor produced by *B. longum* inhibits the adhesion of the enterotoxigenic strain of *Escherichia coli* [75]. It has anti-inflammatory properties and is indicated for gastrointestinal disorders such as ulcerative colitis [76], antibiotic-associated diarrhoea [77, 78], Irritable Bowel Syndrome [79], and seasonal allergies [80, 81]. It aids the formation of lactic acid and formic acid, lowering the pH of the intestines and preventing the proliferation of harmful bacteria [82]. It is also a significant producer of B vitamins [83].

LACTOBACILLUS ACIDOPHILUS: this product contains the UB5997 human strain. It improves the general symptoms of patients with Irritable Bowel Syndrome [84]. It helps to maintain an acidic environment in the intestinal tract by preventing the growth of harmful bacteria and reduces antibiotic-associated diarrhoea [85]. It reduces total plasma cholesterol and low-density lipoprotein (LDL) cholesterol [86, 87]. It helps to improve digestive health by maintaining the intestinal barrier, restoring intestinal flora, improving digestion, boosting the immune system, and supporting beneficial bacteria that thrive in the colon [88]. It helps to improve symptoms of allergic rhinitis [89], hay fever [90], and atopic dermatitis [91].

LACTOBACILLUS SALIVARIUS: this product contains the UB5997 plant strain. It inhibits the growth and activity of harmful pathogenic bacteria, including *Helicobacter pylori* [92,93] and *Salmonella* [94]. It helps to break down undigested proteins and deactivate toxins produced by intestinal putrefaction [95]. It improves the lipid (cholesterol) profile and reduces inflammation, tumour necrosis factor, and *Escherichia coli* populations [96]. When used in combination with prebiotics (fructooligosaccharides), it is effective in reducing the symptoms of atopic dermatitis in children [97] and adults [98].

LACTOBACILLUS PLANTARUM: this product contains the UB2783 plant strain. It acts against unwanted bacteria by improving the symptoms of Irritable Bowel Syndrome, such as excessive gas, bloating and abdominal discomfort [99-103], and ulcerative colitis [104, 105]. It regulates immune response and is beneficial in the treatment of atopic dermatitis in children [106]. It has immunostimulatory effects in the elderly, reducing the number of infections [107]. It improves gastrointestinal symptoms during antibiotic therapy [108]. It reduces cardiovascular risk factors and may be useful as a protective agent in the primary prevention of atherosclerosis in smokers [109]. In adults with hypercholesterolaemia, it lowers cholesterol and high blood pressure, which, as a result, may reduce the risk of cardiovascular diseases [110]. It improves symptoms of lactose intolerance, such as diarrhoea and flatulence, in combination with another probiotic [111]. Together with other *Lactobacillus* species, it can restore the vaginal flora by improving the pH and diagnosis of bacterial vaginosis when administered orally [112].

LACTOBACILLUS JOHNSONII: this product contains the UB3394 dairy strain. It has several benefits, such as in *Helicobacter pylori* gastritis [113], regulates immune response [114], may help in the control of diabetes [115], is helpful against vaginal infections [116], and improves allergic rhinitis in children [117].

LACTOBACILLUS HELVETICUS: this product contains the UB7229 dairy strain. It protects the gastrointestinal tract, strengthening the systemic humoral and intestinal mucosal immune response in elite athletes [118]. It has been shown to cause an antidepressant effect in animals, probably due to the microbiota-gut-brain axis connection [119]. Fermented milk with *L. helveticus* improves cognitive function [120] and lowers blood pressure [121]. In animals, it increases bone density and bone mineral content [122], and in post-menopausal women, it has a positive effect on calcium metabolism [123]. It controls unwanted intestinal micro-organisms and bacteria *(Salmonella enteritidis, Campylobacter jejuni, Escherichia coli, Candida albicans*, etc.), regulates immune response and reduces lactose intolerance [124].

LACTOBACILLUS PARACASEI: this product contains the UB1978 dairy strain. It significantly enhances the specific immune response in healthy people who have received the influenza vaccine [125]. It improves digestive function [126] and symptoms (especially eye symptoms) in patients with allergic rhinitis treated with oral antihistamines [127]. It is also effective against *Staphylococcus aureus*, *Escherichia coli*, and *Salmonella* infections [128-130]. It relieves the frequency and duration of acute diarrhoea in children [131]. It improves neurocognitive function in patients with chronic fatigue syndrome when used in combination with other probiotics [132].

LACTOCOCCUS LACTIS: this product contains the LL-23 dairy strain. It produces bacteriocins such as lacticin, nisin and lactococcin [133]. Nisin is the best studied compound in this group. Nisin is a so-called lantibiotic bacteriocin with a broad spectrum of antimicrobial activity and an immunomodulatory effect [134]. One of the most important properties of nisin is its activity against Gram-positive bacteria and bacterial spores such as *Clostridium difficile* [135]. *Lactococcus lactis* also boosts antiviral immunity by reducing cold and flu symptoms [136, 137], may help lower blood pressure [138], and may help reduce intestinal inflammation [139], among other properties [140].

L. lactis LL-23 strain: together with other probiotics, it reduces inflammatory markers in people with rheumatoid arthritis [141], and also together with other probiotics and diet helps to significantly reduce abdominal fat and increased antioxidant enzyme activity [142].

CALOSTRO: contains high levels of proline-rich polypeptides (PRP's) that help reduce the inflammatory response responsible for some of the symptoms associated with Irritable Bowel Syndrome and Leaky Gut Syndrome (intestinal dysbiosis). It contains a high proportion of immunoglobulin (IgG), antimicrobial factors (lactoferrin), immunomodulatory polypeptides, anti-inflammatory cytokines, growth factors and other bioactive compounds that promote immune response, inhibit excessive production of “reactive oxygen species” and act in synergy as prebiotics for the intensive growth of specific probiotic strains. Growth factors are involved in the regeneration and proliferation of the intestinal epithelium for proper intestinal absorption and permeability [1]. Proline-rich polypeptides are one of the most important components of colostrum because of their ability to modulate the immune system and regulate the production of certain cytokines, signalling molecules that control the inflammatory process [143, 144].

Clinical studies show that bovine colostrum regulates the immune response after exercise [145, 146], reduces muscle damage and inflammation after exercise [147], has a protective effect on the respiratory tract mucosa [148, 149], is effective in HIV treatment-associated diarrhoea [150], reduces the duration and severity of rotavirus diarrhoea [151], and prevents gastrointestinal damage (increased permeability) caused by non-steroidal anti-inflammatory drugs [152]. The lactoferrin it contains inhibits the growth of various pathogenic micro-organisms such as *Helicobacter pylori* [153].

INULIN: It is a fructooligosaccharide (FOS) of plant origin, extracted from the root of chicory (*Cichorium intybus*). It acts as a prebiotic, creating the right environment for probiotics or beneficial micro-organisms to reproduce faster and in greater numbers [154-156]. It increases the population of *Bifidobacterium* probiotics in the colon and reduces toxic metabolites and harmful enzymes. It prevents pathogenic and autogenous diarrhoea and constipation and protects liver function [157].

ARABINOGALACTAN: it is an arabino-oligosaccharide (AOS) of plant origin from the larch tree (*Larix laricina*). It is an excellent prebiotic that increases the production of short-chain fatty acids (mainly butyrate), which acts as an energy substrate for the epithelial cells of the colon and protects the intestinal mucosa. It activates the immune response and selectively stimulates the growth and activity of probiotic bacteria [158]. It is useful in fighting infections due to its ability to decrease bacterial adherence [159, 160]. In addition, it lowers the intestinal pH and improves mineral absorption [160-163].

XYLOOLIGOSACCHARIDES (XOS): are xylan-derived oligosaccharides with a prebiotic effect stimulating the selective growth of beneficial bacteria. XOS also have other beneficial health effects. These positive effects are related to the optimisation of colon functions, as well as the metabolism (increasing or changing the composition of short-chain fatty acids), antioxidant properties, immunostimulation, reduction of triglycerides and cholesterol, reduction of procarcinogenic enzymes, etc. [164-166].

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