

Skim Immulox Powder

Description and Suggested Applications

Updated 07/18/11

Skim Immulox Powder is a Proline-rich Polypeptide (PRP) colostrum powder containing immune balancing properties. PRPs are the most important immune component of colostrum powder. It is agglomerated, instantized water soluble, pasteurized, reduced fat, free-flowing powder produced from first milking colostrum only. Skim Immulox Powder is processed both at low pressures and temperatures and is spray dried using indirect steam to maintain maximum bio-activity. The colostrum used to produce Skim Immulox Powder is from antibiotic free sources. Instantizing makes its water soluble and ideal for drink-mix, tablets and capsule applications

Suggested applications include: immune system enhancement, nutritional supplementation, digestive health improvement, and protein supplementation.

Major Active Component Analysis	Specification	Typical	Method
Protein, % (Nx6.38) db	30.0 min	35.2	AOAC 991.20 18th Ed., page 33.2.11
Total Immunoglobulins, %	15.0 min	16.7	HPLC (IX, dry basis)
Immunoglobulins (Type G1 & G2), %	15.0 min	16.1	HPLC (IX, dry basis)
Immunoglobulins (Type A), %	0.3 min	0.35	HPLC (IX, dry basis)
Immunoglobulins (Type M), %	0.1 min	0.12	HPLC (IX, dry basis)
Immunoglobulins (Type D), %	0.02 min	0.03	HPLC (IX, dry basis)
Immunoglobulins (Type E), %	0.007 min	0.01	HPLC (IX, dry basis)
Lactoferrin, %	1.0 min	1.2	HPLC (IX, dry basis)
Transferrin, mg/g	3.5 min	3.7	HPLC (IX, dry basis)
Lactoperoxidase-thiocyanate, %	0.5 min	0.6	HPLC (IX, dry basis)
Proline-Rich Polypeptides (PRPs), %	12.0 min	14.0	HPLC (IX, dry basis)
Insulin Growth Factor (Type 1), µg/g	1.0 min	1.4	ELISA (dry basis)
Insulin Growth Factor (Type 2), ng/g	120.0 min	160	ELISA (dry basis)
Derived Platelet Growth Factor, ng/g	4.5 min	4.7	HPLC (dry basis)
Epidermal Growth Factor, µg/g	1.0 min	1.25	ELISA (dry basis)
Fibroblast Platelet Growth Factor, ng/g	4.0 min	5.8	ELISA (dry basis)
Transforming Growth Factor α, mcg/100g	2.0 min	2.4	ELISA (dry basis)
Transforming Growth Factor β, mcg/100g	0.01 min	0.02	ELISA (dry basis)
Nerve Growth Factor, ng/g	12.0 min	12.3	ELISA (dry basis)
Leptin, ng/g	50.0 min	52	ELISA (dry basis)

Vitamin Analysis

Vitamin A, µg/g	10.0 min	14	AOAC 985.30 18th Ed., page 50.1.01
Vitamin B1, µg/g	40.0 min	43.2	AOAC 986.27 18th Ed., page 50.1.08
Vitamin B2, µg/g	15.0 min	15.9	AOAC 985.31 18th Ed., page 50.1.07
Vitamin B5, µg/g	0.70 min	0.75	AOAC 992.07 18th Ed., page 50.1.22
Vitamin B6, µg/g	7.00 min	9	AOAC 985.32 18th Ed., page 50.1.18
Vitamin B12, µg/g	0.06 min	0.1	AOAC 986.23 18th Ed., pg 50.1.20
Vitamin C, µg/g	0.20 min	0.4	AOAC 985.33 18th Ed., page 50.1.09
Vitamin E, µg/g	0.18 min	0.3	AOAC 992.03 18th Ed., page 50.1.04
Folic Acid, µg/g	1.00 min	2.7	AOAC 992.05 18th Ed., page 50.1.21

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Analytical Analysis

	Specification	Typical	Method
Moisture, %	< 5.0	4.6	AOAC 934.01/4.103 16th Ed.(102C, 3 hours)
Ash, %	< 15.0	12.1	AOAC 945.46 18th Ed., pg 33.2.10
Total Fat, %	< 5.0	2.1	AOAC 989.04 18th Ed., pg 33.2.27
Trans Fat, %	< 1.0	Not Detected	AOAC 989.04 18th Ed., pg 33.2.27
Cholesterol, %	< 0.1	0.04	AOAC 989.04 18th Ed., pg 33.2.27
Caloric, cal/g	< 10.0	5	FDA CFR Method
Lactose, %	< 60.0	48.2	By difference
Dietary Fiber, %	< 1.0	Not Detected	AOAC 991.43 18 th Ed., pg 32.1.17
Scorched Particle Disc	B	A	AOAC 952.21 18th Ed., pg 16.3.01
Insolubility Index, mL	< 0.25	0.19	GEA Niro Method No. A 3 a
pH	<> 6.0 - 7.0	6.2	10% sol., 20°C

Microbiological Analysis

Aerobic Plate Count, (CFU/g)	< 10,000	4,000	AOAC 990.12 18th Ed., pg 17.2.07
E. Coli,(/50g)	Not Detected	Not Detected	AOAC 991.14 18th Ed., pg 17.3.04
Coliform, (CFU/g)	< 50	Not Detected	AOAC 991.14 18th Ed., pg 17.3.04
Yeast/Mold, (CFU/g)	< 50	Not Detected	AOAC 997.02 18th Ed., pg 17.2.09
Listeria, (/25g)	Not Detected	Not Detected	AOAC-RI Performance Tested Method 030502
Salmonella, (/25g)	Not Detected	Not Detected	AOAC-RI Performance Tested Method 100201
Enterobacteriaceae, (CFU/g)	< 50	Not Detected	AOAC 2003.01 18th Ed., pg 17.3.10
Bacillus Cereus, (CFU/g)	< 100	Not Detected	AOAC 980.31 18th Ed., pg 17.8.01(mod)
Enterosakazakii, (/25g)	Not Detected	Not Detected	BAX Q7 PCR Method
Shigella, (/25g)	Not Detected	Not Detected	RapID onE Sytem
Streptococcus hemolytics,(/25g)	Not Detected	Not Detected	AOAC 940.37 18th Ed., pg 17.1.03 (mod)
Staph. Aureus, (/50g)	Not Detected	Not Detected	AOAC 2003.08 18th Ed., pg 17.5.09

Essential Amino Analysis (w/w GC/MS)

Isoleucine	1.46%
Leucine	2.37%
Histidine	1.46%
Methionine	4.08%
Lysine	4.18%
Threonine	4.03%
Phenylalanine	2.42%
Valine	2.16%
Tryptophan	1.17%

Non Essential Amino Acid Analysis (w/w GC/MS)

Arginine	2.30%
Cystine	1.12%
Glutamic Acid	9.13%
Alanine	2.50%
Tyrosine	4.96%
Glycine	1.77%
Proline	5.12%
Aspartic Acid	5.57%
Serine	4.77%

Vitamin and Mineral Analysis

Calcium, mg/100g	> 500	1190	AOAC 984.27 18th Ed., pg 50.1.15
Magnesium, mg/100g	> 100	236	AOAC 984.27 18th Ed., pg 50.1.15
Zinc, mg/100g	> 3	9	AOAC 984.27 18th Ed., pg 50.1.15
Sodium, mg/100g	> 400	675	AOAC 984.27 18th Ed., pg 50.1.15
Potassium, mg/100g	> 900	1522	AOAC 984.27 18th Ed., pg 50.1.15
Phosphorus, mg/100g	> 500	1080	AOAC 984.27 18th Ed., pg 50.1.15
Iron, mg/100g	> 0.2	0.7	AOAC 984.27 18th Ed., pg 50.1.15

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Other Contaminants

	Specification	Typical	Method
Nitrite (NaNO ₂), ppm	< 2	0.5	AOAC 951.03 18th Ed., pg 32.1.30
Nitrate (NaNO ₃), ppm	< 80	10	AOAC 951.03 18th Ed., pg 32.1.30
Inhibitory Substances, ppb	< 5	Not Detected	Delvotest® SP-NT
Aflatoxin M1, ppb	< 0.25	Not Detected	AOAC 974.17 18th Ed., pg 49.3.01
Nitrofurantoin (AMOZ), ppb	< 0.3	Not Detected	Charm II 6600 (operating manual)
Nitrofurantoin (AOZ), ppb	< 0.3	Not Detected	Charm II 6600 (operating manual)
Dioxins, pg/g	< 3	Not Detected	AOAC 968.23 18th Ed., pg 41.1.59
Dioxins and Dioxin-like PCBs, pg/g	< 4.5	Not Detected	AOAC 984.21 18th Ed., pg 10.2.02
Melamine, ppm	< 2	Not Detected	FDA GCMS-MS
Titratable Acidity, %	< 0.45	0.2	AOAC 947.05 18th Ed., pg 33.2.03

Heavy Metals

Arsenic, ppm	< 0.500	0.027	AOAC 986.15 18th Ed., page 9.1.01
Lead, ppm	< 0.020	0.018	AOAC 986.15 18th Ed., page 9.1.01
Mercury, ppm	< 0.10	0.01	AOAC 952.14 18th Ed., page 9.2.25
Cadmium, ppm	< 0.250	0.015	AOAC 986.15 18th Ed., page 9.1.01
Chromium, ppm	< 0.40	0.27	AOAC 974.27 18th Ed., page 11.1.26
Copper, ppm	< 10.0	8.1	AOAC 999.10 18th Ed., page 9.1.0

Physical Properties

Appearance	Milk yellow powder	PASS	Visual
Odor	Creamy	PASS	Organoleptic
Taste	Characteristic	PASS	Organoleptic
Solubility	Good	PASS	Visual
Tapped Bulk Density, g/mL	> 0.3	0.5	In-house
Rough Pour Density, g/mL	> 0.25	0.38	In-house

Other Minor Components not quantified

Beta 2- microglobulin, Enzymes, Haemopexin, Haptoglobulin, Orotic Acid, Peroxidase, Xanthine Oxidase Enzyme, Gonadotropin-Releasing Hormone (GnRH), Prolactin, Insulin, Sulfur, Glycoproteins: - (Including Protease and Trypsin Inhibitors), Lactalbumin, Multimeric α -Lactalbumin, Cytokines, Lysozymes, Gamma Globulin, B Lactoglobulin, Complement 3 & 4 (C3 & C4), Kappa Casein, Alpha 2-AP glycoprotein, Alpha 1- antitrypsin, Alpha 2- macroglobulin, Orosomucoids, Prealbumin, Albumin, Oligosaccharides, Non Specific Inhibitors (NSI's), Secretory IgA (SigA), IgA Specific Helper

Packaging, Shipping and Storage

Skim Immulox powder is packaged in color labeled bleached double walled corrugated boxes with a polyethylene liner. The box is 20.0 in. x 15.5in. x 14.5 in.. Each box holds 20 kg net. There are 24 boxes per pallet. Colostrum proteins are hygroscopic and can absorb odors. Temperatures below 75 degrees F, relative humidity's below 65% and an odor free environment will extend storage life. Stocks should be used in rotation and preferably within three years.

* Where not specified results are reported on "as is" basis.

** Product contains milk allergens