



Standardised to provide a minimum of 70 kcal and 1.0 g of protein per 100 ml.

Available in a Frozen liquid form of 15 ml and 50 ml.

NeoKare Nutrition Ltd is an UK-based leading innovator in breast milk processing using patented technology to provide human breast milk products, ensuring that the unique nutritional demands of babies can be met. Our innovative process for manufacture of NeoKare 70CAL retains naturally occurring minerals, vitamins and immunoglobulins in human milk.

NeoKare Nutrition's range of products includes:

- **NeoKare MMF (Mother's Milk Fortifier)** which is the world's first and only powdered human milk-based fortifier with 0.27 g of protein per 1 g sachet.
- **NeoKare 70P** is a standardised and pasteurised human milk powder with 1.5% protein when 1.55 g sachet is mixed in 10 ml water.

## Benefits of human milk

Breast milk is known to provide many benefits to infants, helping them avoid acute complications and improving long-term outcomes. Although bovine and plant-based formulas approach the fat, protein and carbohydrate composition of human milk, they are not able to replicate the complexity or functionality of other bioactive factors found in human breast milk<sup>1</sup>.

## Recommendations

WHO and UNICEF recommend that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first 6 months of life<sup>2</sup>. When own mother's milk (OMM) is not available, donor human milk (DHM) is the recommended alternative<sup>3</sup>.

## Quality and Safety of NeoKare 70CAL

Our quality processes are stringent and exceed the standards of NICE CG93 guidelines. The process of quality starts from the moment breast milk is obtained from milk providers. Every mother providing milk undergoes multiple screening processes, including serological tests. The milk is continually tested for microbial and macronutrients throughout the production process. It is then pasteurised in-line with NICE and WHO guidelines using the Holder pasteurisation (Heated at 62.5°C for 30 minutes followed by rapid cooling to a temperature of 4°C or lower)<sup>4</sup>. The finished product is tested in-house and by an UKAS certified independent laboratory before being released for distribution.



## Product Description

NeoKare 70CAL is a standardised and pasteurised human milk. When mother's milk is not available, NeoKare 70CAL can be used. It provides minimum 70 Kcal and 1.0 g protein per 100 ml and contains no added minerals or vitamins.

- Product is not suitable for use as a sole source of nutrition. Based on the infant's individual needs, there may be a requirement to provide additional minerals and vitamins.
- Available frozen in 15 ml and 50 ml bottles.

Macronutrients	NeoKare 70CAL per 100 ml
Energy (Kcal)	70
Protein (g)	1.0
Fat (g)	3.8
Carbohydrates	8
Protein Energy ratio	5.7%
Fat Energy ratio	49%

## NeoKare Advantage - Human Milk Nutrients

Breast milk provides the ideal balance of nutrients for the infant and contains countless bioactive ingredients such as immunoglobulins and oligosaccharides<sup>5</sup>. NeoKare utilises proprietary technology for the manufacturing of NeoKare 70CAL from human milk, helping to retain these following benefits.

**Human Milk Oligosaccharides (HMOs)** are complex glycans that are highly abundant in human breast milk. It is generally accepted that HMOs have prebiotic effects, selectively serving as a source of energy and nutrients for desired bacteria to colonize the infant intestine<sup>6</sup>. They contribute to the development of the infant's microflora and immune system. They have been shown to have anti-bacterial, anti-viral and anti-inflammatory effects<sup>5</sup>. Though non-nutritive to the infant, HMOs constitute a remarkable quantity of human milk, similar to the quantity of total protein<sup>7</sup>. There are approximately 200 unique oligosaccharides but milk from randomly selected mothers may contain as few as 23 and as many as 130 different oligosaccharides<sup>8</sup>. Thereby, pooling of milk by NeoKare increases the diversity of Human Milk Oligosaccharides.

Human Milk Components in Fresh Milk after Freezing and Pasteurisation vs. Formula and Special Formula

Components	Mother's milk from the breast	After freezing & pasteurisation	Formula	Special Formula	Functions
Bifidus factor	100	70-100			Promote growth of Lactobacillus bifidus, a harmless bacterium to prevent growth of harmful bacteria in the gut
Oligosaccharides	100	100	0	0	Bind harmful bacteria
Vitamin A	100	100			Protection against disease; gut mucosa sensitive to Vitamin A

Douglas B. Tully, Frances Jones and Mary Rose Tully J Hum Lact 2001; 17; 152



**Immunoglobulins** – The most abundant immunoglobulin in human milk is SIgA, which represents over 90% of milk antibodies. Maternal immunoglobulins, in particular, SIgA, have lasting beneficial effects on the support and regulation of the immature immune system of breastfed infants as well as on their gut microbiome<sup>9</sup>. In a recently published study, it is suggested that NEC results in part from a failure of maternal IgA to control a subpopulation of infant gut bacteria with inflammatory properties<sup>10</sup>.

Human Milk Components in Fresh Milk after Freezing and Pasteurisation vs. Formula and Special Formula

Components	Mother's milk from the breast	After freezing & pasteurisation	Formula	Special Formula	Functions
<b>IgA and SIgA</b>	100	67-70	0	0	Infants do not produce SIgA until 6-9 months; active against Polio, Coxsackievirus, Herpes, CMV, RSV, Rubella and Rotavirus
<b>IgM</b>	100	100	0	0	Active against CMV, RSV and Rubella
<b>IgG</b>	100	66-70	0	0	Active against CMV, RSV and Rubella

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**Shelf life** : 12 months

**Ingredients** : Human **milk**

**Storage** : Store at -20°C or colder until ready to thaw for use.

## Preparation instructions

**Do not defrost or warm in a microwave.**

Remove bottle from the freezer and thaw product as per the following method.

- Refrigeration: (2°C to 8°C) Place the unopened bottle in refrigerator. Once thawing process begins, use within 24 hours.
- Do not refreeze, keep refrigerated until used completely.



## NeoKare vs Milk Banks

	NeoKare Process	Milk Banks <sup>4</sup>
<b>Donor selection Process</b>		
Questionnaire(Health/Medical)	Yes	Yes
Blood Test	Yes	Yes
Donor Freezer Qualification	Yes	Yes
<b>Raw Human Milk</b>		
Tested for Fat, Protein, Lactose	Yes	Yes
Sensory Test	Yes, every batch	No
Microbiological Test	Yes	Yes

	NeoKare Process	Milk Banks <sup>4</sup>
<b>In-Process Testing</b>		
Pooling	Yes. Increase the diversity of Human Milk Oligosaccharides <sup>8</sup>	No
Standardisation	Yes	No
Tested for Fat, Protein, Lactose	Yes	No
Pasteurisation	Holder pasteurisation (62.5°C for 30 minutes)	Holder pasteurisation (62.5°C for 30 minutes)
Processing and packing areas	Cleanroom ISO 7	Normal hospital working conditions

	NeoKare 70CAL	Milk Banks <sup>4</sup>
<b>Finished Product</b>		
Energy content (Kcal) per 100 ml donor breast milk	70 Kcal	Research shows average donor milk is of 60 kcal <sup>11</sup> . 80% of donor milk is less than 70Kcal
Protein levels per 100 ml donor breast milk	1.0 g	Research shows average donor milk has 0.8 g <sup>11</sup> . 75% of donor milk does not have even 1.0 g of protein
Protein Energy Ratio (%)	5.7%	5.4%
Tested for Fat, Protein, Energy	Every batch	Statistical test
In-house Microbiological Test	Every batch	Test batch once every 10 cycles
UKAS approved Independent Lab testing	Yes	No



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## Manufactured by:

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