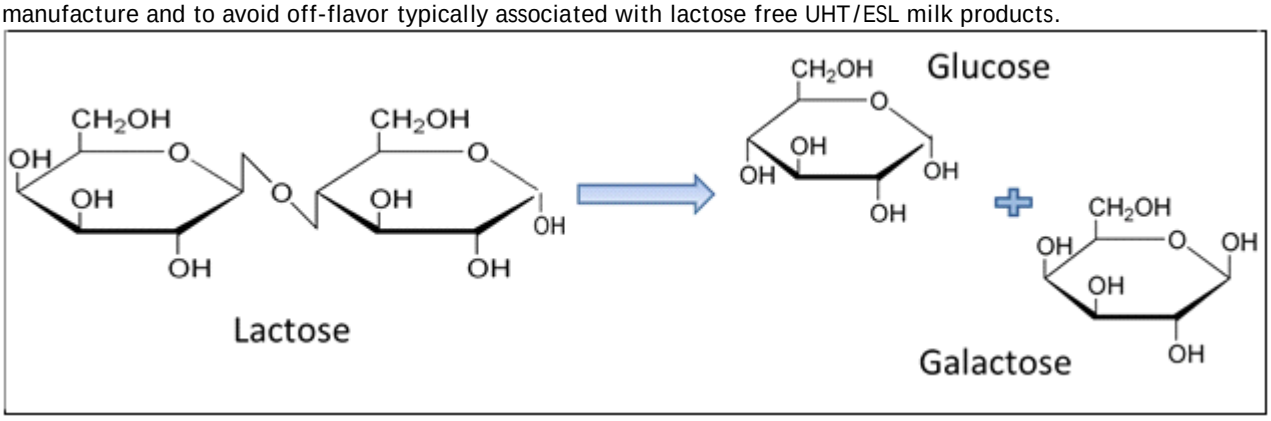
NOLA™ Fit 5500

Product Information

Version: 6 PI GLOB EN 01-13-2017

Description

NOLA™ Fit 5500 is a novel highly-purified and standardized liquid wide spectrum *Bifidobacterium bifidum* ß-galactosidase (lactase). It is produced by submerged fermentation on a vegetable substrate using a selected strain of *Bacillus licheniformis* kept under contained conditions and not present in the final product. The product hydrolyses lactose to a mixture of glucose and galactose. The product is a premium lactase particularly suitable for fermented milks and cheese manufacture and to avoid off-flavor typically associated with lactose free UHT/ESL milk products.



Material No:	350502		
Size	6X1 L	Storage temp:	0 - 8 °C / 32 - 46 °F
Type	Bottle in box	Conditions:	Protect from light . Keep closed in the original container.

Shelf life

24 months from quality release when stored according to the recommended storage conditions. The shelf life is limited to 3 months after opening, provided the product is maintained according to the recommended storage conditions.

Transport condition

The product should be transported between -5 and 20 °C / 23 and 68 °F with a maximum transit time of 7 days outside this interval. Prolonged exposure to heat above this temperature may influence the shelf life and activity of the product.

Patent information*

Patented

Application

NOLA™ Fit 5500 may be used in various dairy-based products such as milk, cream, fermented products, cheese, whey drinks, whey/whey permeate, dulce de leche, ice cream and other desserts. The product is suitable for

- Premium lactose free milks and fermented milks
- Reduced sugar milk drinks and fermented milks

Dosage

500-18000 BLU/l milk

The composition of the milk/substrate and preceding treatment will influence lactase activity during hydrolysis. Dosage is dependent on the initial lactose concentration. Contrary to yeast neutral lactase typically used, the product continues to hydrolyze lactose in fermented milk products down to approx. pH 4.5 and also remains at a higher relative activity at both low(er) and high(er) temperatures. The activity of the product is expressed in Bifido Lactase Units (BLU), a proprietary Chr. Hansen test methodology. The test method is available on request.

Directions for use
Directions for use are highly dependent on the application. Application sheets are available upon request.

Composition
Glycerol (E 422), Water, Beta-galactosidase

Specification

Properties

Average activity:	5500 BLU/g	Guaranteed activity:	>= 5.000 BLU/g

Guaranteed activity is the minimum activity at best-before date.

Content

Enzyme type:	Lactase	Enzymatic composition:	100 % beta-galactosidase

Physical Properties

Color:	Colorless to amber	Form:	Liquid
Solubility:	Water soluble	Odor:	Slightly fermented
pH:	5,40 - 7,00	Density:	1,10 - 1,20

The product may exhibit batch-to-batch color variations. This has no influence on the activity.

Formulation

Glycerol %:		45,0 %	

Microbiological quality

Total count:	< 100 cfu/ml	Yeast and mould:	< 1 cfu/ml
Clostridia:	< 1 cfu/ml	Coliform bacteria:	< 1 cfu/ml
Escherichia coli:	Absent in 25ml	Salmonella spp.:	Absent in 25ml
Listeria monocytogenes:	Absent in 25ml	Coagulase-positive staphylococci:	Absent in 1ml

Comments
Methods are available on request.
Our fermentation produced enzymes are tested for the relevant mycotoxins and metabolites according to JECFA's General Specifications for Enzymes.
This product complies with the recommended purity specifications for food-grade enzymes given by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the Food Chemical Codex (FCC) with heavy metal specifications for Lead (≤ 5 ppm), Cadmium (≤ 0,5 ppm), Mercury (≤ 0,5 ppm) and Arsenic (≤ 3 ppm).

Certificate of Analysis
A Certificate of Analysis (CoA) will normally accompany the goods.

Technical Data

Temperature
The desired degree of hydrolysis can be obtained by selecting the appropriate temperature, time and dosage for the reaction. The optimal temperature is between 35-50°C (95-122°F). The enzyme is inactivated at temperature above 70°C (158°F).

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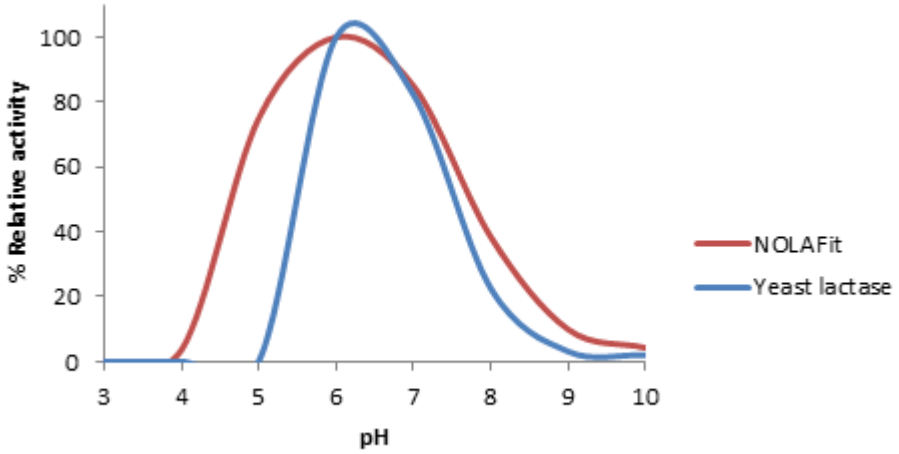
pH
The product is a wide spectrum lactase with the optimum pH being between 5.0 and 7.0. The enzyme is strongly inhibited at pH values below 4.5.

The figure below illustrates the influence of pH on lactase activity using whey permeate substrate (5% lactose) at 37°C (104°F).



Purity
This product is one of the purest lactase products available on the market.
Typical performance can be seen in the table below.

	NOLA™ Fit
Invertase (U/ml)	<0.01
Arylsulfatase (A410/ml)	<0.03
Glycoamylase (U/ml)	<4
Lipase (LFU/ml)	<0.07
Cellulase (U/ml)	<3

Technical support
Chr. Hansen's Application and Product Development Laboratories and personnel are available if you need further information.

Dietary Information

Kosher:	Kosher Pareve Excl. Passover
Halal:	Certified
Vegetarian:	Yes

Handling precautions

For detailed handling information, please refer to the appropriate Safety Data Sheet. Enzymes may cause irritation upon inhalation or skin contact among sensitive individuals. The use of personal protection equipments such as gloves, goggles and respiratory equipment can prevent sensitisation. For additional guidelines refer to 'Guide to the safe handling of microbial enzymes preparations' published by the Association of Manufacturers and Formulators of Enzyme Products (AMFEP) and 'Working Safely With Enzymes' by the Enzyme Technical Association (ETA).

According to EU legislation, disposal of packaging material of this product should be treated as hazardous waste. Alternatively, or for non EU countries, packaging may be disposed of as normal waste by rinsing with plenty of water to ensure no enzyme residues are present.

Legislation

This product complies with JECFA- (FAO/WHO) and FCC-recommended specifications for food-grade enzymes. The application of enzymes in food processing is governed by general food laws and by Reg. (EC) No 1332/2008. However, the approval system provided by Reg. 1332/2008 is not yet fully operational. Chr. Hansen A/S will ensure EU approval in due time. Meanwhile, please check for local/national rules or regulations as national requirements may apply.

The product is intended for use in food.

Labeling

Enzymes, as processing aids, generally do not need to be labeled on the final product. However local legislation and standards of identity for the final product should always be consulted.

Trademarks

Product names, names of concepts, logos, brands and other trademarks referred to in this document, whether or not appearing in large print, bold or with the ® or TM symbol are the property of Chr. Hansen A/S or used under license. Trademarks appearing in this document may not be registered in your country, even if they are marked with an ®.

*Patent No.

US74450808, EP2234501, CN104472683, CN104322666, CN101932248

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GMO Information

In accordance with the legislation in the European Union* NOLA™ Fit 5500 does not contain GMOs and does not contain GM labeled raw materials**. In accordance with European legislation on labeling of final food products** we can inform that the use of NOLA™ Fit 5500 does not trigger a GM labeling of the final food product. Chr. Hansen's position on GMO can be found on: www.chr-hansen.com/About us/Policies and positions/Quality and product safety.

** Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms with later amendments, and repealing Council Directive 90/220/EEC.*
*** Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed with later amendments.*
Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms amending Directive 2001/18/EC, and with later amendments.

Allergen Information

List of common allergens in accordance with the US Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA) and EU Regulation 1169/2011/EC with later amendments	Present as an ingredient in the product
Cereals containing gluten* and products thereof	No
Crustaceans and products thereof	No
Eggs and products thereof	No
Fish and products thereof	No
Peanuts and products thereof	No
Soybeans and products thereof	No
Milk and products thereof (including lactose)	No
Nuts* and products thereof	No
List of allergens in accordance with EU Regulation 1169/2011/EC only	
Celery and products thereof	No
Mustard and products thereof	No
Sesame seeds and products thereof	No
Lupine and products thereof	No
Mollusks and products thereof	No
Sulphur dioxide and sulphites (added) at concentrations of more than 10 mg/kg or 10 mg/litre expressed as SO_2	No

** Please consult the EU Regulation 1169/2011 Annex II for a legal definition of common allergens, see European Union law at: www.eur-lex.europa.eu*