CECALAIT-S NEWSLETTER

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ACTALIA Cecalait

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ARTICLE

EVALUATION OF A NEW REAGENT FOR THE DETERMINATION OF THE MILK FAT ACIDITY USING THE BDI METHOD (ACCORDING TO THE ISO/TS 22113|IDF/RM 204 STANDARD)

January 4, 2021 marked the end of the authorization for use, under the REACH regulation, of Triton X-100 (surfactant composed of polyethylene glycol ether and octylphenol) which had been added to Annex XIV of the regulation REACH on July 3, 2017.

This reagent is an integral part of the extraction reagent used for the determination of the milk fat acidity according to standard ISO/TS 22113| IDF/RM 204 (70 g of sodium hexaphosphate; 30 g of Triton X-100 qsp 1000ml; pH 6.6).

Thus, in order to overcome this interdiction of use, investigations were carried out within the framework of the IDF/ISO permanent committee "Analytical methods for composition" to find a substitute for this product in the context of the determination of milk fat acidity according to the BDI method. A surfactant already used in other methods on milk and dairy products: Tergitol™ 15-S-9 has been identified as a potential reactive substitute.

Comparative tests were carried out in September and October 2021 in 2 test laboratories. They consisted of analyzing several milk samples at different levels of fat acidity using 2 extraction reagents, one containing Triton X-100 and the other Tergitol™ 15-S- 9 (Acros organics: Ref 464250010 or Sigma-Aldrich; Ref: 15S9-1L) at equivalent concentration (30 g qs 1000 ml).

1. Repeatability study

The repeatability was evaluated on the 2 extraction reagents tested (with Triton X-100 or with Tergitol™ 15-S-9) on 10 milk samples at different levels of fat acidity.
The results are presented in the table below:

	N	Min	Max	M	Sr	Sr %	R
Triton X-100	10	0.350	1.075	0.692	0.011	1.59%	0.031
Tergitol™ 15-S-9	10	0.368	1.121	0.721	0.004	0.55%	0.011

Table 1: results obtained in mmol/100g of fat

The repeatability values obtained show that the performances of the 2 extraction reagents tested are equivalent. The values obtained are below the limit r of the ISO/TS 22113| IDF/RM 204 standard of 0.072 mmol/100g of fat.

2. Comparison study

A comparison of the results obtained between the 2 extraction reagents tested (with Triton X-100 or with Tergitol™ 15-S-9) was carried out on 20 milk samples at different levels of fat acidity.
The results are presented in the figure below.

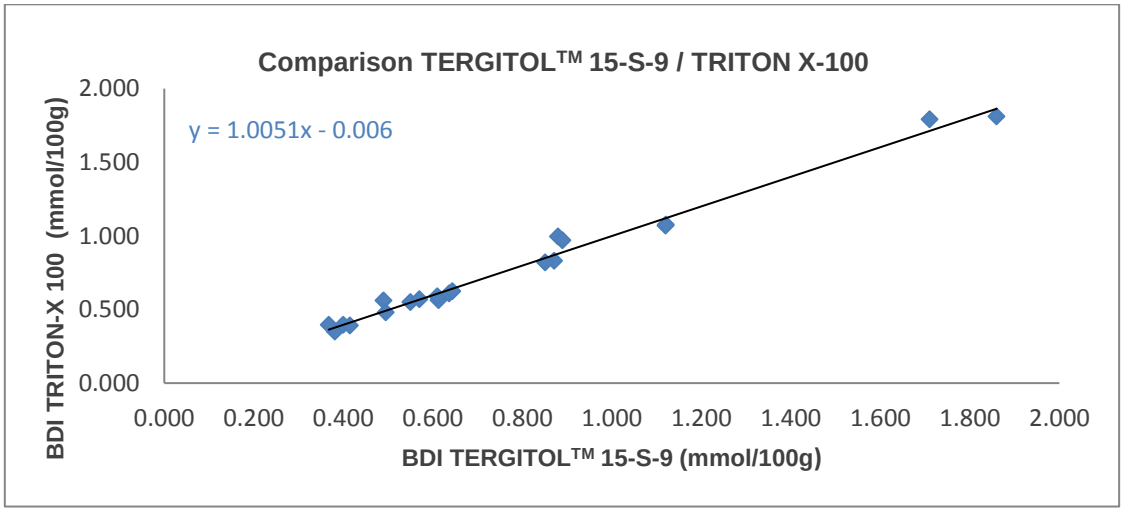


Figure 2: comparison results obtained in mmol/100g of fat

The regression slope obtained between the two series of results is close to 1.00 and the mean deviation obtained between the BDI Tergitol™ 15-S-9 reagent and the BDI Triton X-100 reagent is close to zero (-0.27%) . We can therefore conclude that the results obtained with the 2 extraction reagents tested are equivalent.

3. Conclusion

These results were presented to the ISO/IDF permanent committee in charge of the analytical methods for milk and dairy products. It validated the performance equivalence between the 2 extraction reagents tested and the replacement of Triton X-100 by Tergitol™ 15-S-9 in the ISO/TS 22113 | IDF/RM 204 method (the revision of this method is currently in progress).

Aurore Oudotte, Philippe Trossat

STANDARDS, DRAFT STANDARDS

ISO standards under development

METROLOGY	
ISO/DIS 8655-10 September 2022	Piston-operated volumetric apparatus - Part 10: User guidance and requirements for competence, training, and POVA suitability
MICROBIOLOGY OF THE FOOD CHAIN	
ISO/DIS 7218 August 2022	MICROBIOLOGY OF THE FOOD CHAIN General requirements and guidance for microbiological examinations
ISO/DIS 9232/DAmd1 October 2022	YOGURT Identification of characteristic microorganisms (*Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus thermophilus*) – Amendment 1: Inclusion of performance testing of culture media and reagents
QUALITY MANAGEMENT	
ISO/IEC DIS 17043 July 2022	CONFORMITY ASSESSMENT General requirements for the competence of proficiency testing providers
SENSORY ANALYSIS	
ISO/DIS 8586 May 2022	SENSORY ANALYSIS General guidelines for the selection, training and monitoring of selected assessors and expert sensory assessors
STATISTICS	
ISO/DIS 5725-1 July 2022	Accuracy (trueness and precision) of measurement methods and results – Part 1: General principles and definitions
ISO/DIS 16355-7 September 2022	Applications of statistical and related methods to new technology and product development process – Part 7: Guidelines for developing digitalized products and services – General principles and perspectives of the QFD method
ISO/DIS 13528 July 2022	Statistical methods for use in proficiency testing by interlaboratory comparison

ISO published standards

FOOD SAFETY	
ISO 22003-1 June 2022	FOOD SAFETY Part 1: Requirements for body provinding audit and certification of food safety management systems *Replace ISO/TS 22003:2013*
ISO 22003-2 June 2022	FOOD SAFETY Part 2: Requirements for body provinding evaluation and certification of products, processes and services, including an audit of the food safety system
METROLOGY	
ISO 8655-1 April 2022	Piston-operated volumetric apparatus - Part 1: Terminology, general requirements and user recommendations *Replace ISO 8655-1:2002 + ISO 8655-1/AC1:2008*
ISO 8655-2 April 2022	Piston-operated volumetric apparatus - Part 2: Pipettes *Replace ISO 8655-2:2002 + ISO 8655-2/AC1:2008*
ISO 8655-3 April 2022	Piston-operated volumetric apparatus - Part 3: Burettes *Replace ISO 8655-3:2002 + ISO 8655-3/AC1:2008*
ISO 8655-4 April 2022	Piston-operated volumetric apparatus - Part 4: Dilutors *Replace ISO 8655-4:2002 + ISO 8655-4/AC1:2008*
ISO 8655-5 April 2022	Piston-operated volumetric apparatus - Part 5: Dispensers *Replace ISO 8655-5:2002 + ISO 8655-5/AC1:2008*

STANDARDS - REGULATIONS

ISO 8655-6 April 2022	Piston-operated volumetric apparatus - Part 6: Gravimetric reference measurement procedure for the determination of volume *Replace ISO 8655-6:2002 + ISO 8655-6/AC1:2008*
ISO 8655-7 April 2022	Piston-operated volumetric apparatus - Part 7: Alternative measurement procedures for the determination of volume *Replace ISO 8655-7:2005 + ISO 8655-7/AC1:2008*
ISO 8655-8 April 2022	Piston-operated volumetric apparatus - Part 8: Photometric reference measurement procedure for the determination of volume
ISO 8655-9 April 2022	Piston-operated volumetric apparatus - Part 9: Manually operated precision laboratory syringes
MICROBIOLOGY OF THE FOOD CHAIN	
ISO 23418 June 2022	MICROBIOLOGY OF THE FOOD CHAIN Whole genome sequencing for typing and genomic characterization of bacteria – General requirements and guidance
MILK	
ISO 8196-3 May 2022	MILK Definition and evaluation of the overall accuracy of alternative methods of milk analysis - Part 3: Protocol for the evaluation and validation of alternative quantitative methods of milk analysis *Replace ISO 8196-3:2009*

NEW EU REGULATIONS

CONTAMINANTS

O.J.E.U. L 162, 17th June 2022 – Commission Delegated Regulation (EU) 2022/931 of 23 March 2022 supplementing Regulation (EU) 2017/625 of the European Parliament and of the Council by laying down rules for the performance of official controls as regards contaminants in food
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.162.01.0007.01.ENG

O.J.E.U. L 162, 17th June 2022 – Commission Implementing Regulation (EU) 2022/932 of 9 June 2022 on uniform practical arrangements for the performance of official controls as regards contaminants in food, on specific additional content of multi-annual national control plans and specific additional arrangements for their preparation
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.162.01.0013.01.ENG

HEALTH CLAIM

O.J.E.U. L 133, 10th May 2022 – Commission Regulation (EU) 2022/709 of 6 May 2022 refusing to authorise a health claim made on foods and referring to children's development and health
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.133.01.0006.01.ENG

P.D.O. / P.G.I. / T.S.G.

O.J.E.U. L 136, 13rd May 2022 – Commission Implementing Regulation (EU) 2022/730 of 6 May 2022 entering a name in the register of protected designations of origin and protected geographical indications [Wrangebäcksost (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.136.01.0001.01.ENG

O.J.E.U. L 141, 20th May 2022 – Commission Implementing Regulation (EU) 2022/787 of 13 May 2022 entering a name in the register of protected designations of origin and protected geographical indications [Cancoillotte (cheese speciality) (PGI)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.141.01.0006.01.ENG

O.J.E.U. L 155, 8th June 2022 – Commission Delegated Regulation (EU) 2022/891 of 1 April 2022amending Delegated Regulation (EU) No 664/2014 supplementing Regulation (EU) No 1151/2012 of the European Parliament and of the Council with regard to the establishment of the Union symbols for protected designations of origin, protected geographical indications and traditional specialities guaranteed and with regard to certain rules on sourcing, certain procedural rules and certain additional transitional rules
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.155.01.0003.01.ENG

STANDARDS - REGULATIONS

O.J.E.U. L 155, 8th June 2022 – Commission Implementing Regulation (EU) 2022/892 of 1 April 2022 amending Implementing Regulation (EU) No 668/2014 laying down rules for the application of Regulation (EU) No 1151/2012 of the European Parliament and of the Council on quality schemes for agricultural products and foodstuffs
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.155.01.0008.01.ENG

O.J.E.U. C 229, 14th June 2022 – Publication of an application for approval of an amendment, which is not minor, to a product specification pursuant to Article 50(2)(a) of Regulation (EU) No 1151/2012 of the European Parliament and of the Council on quality schemes for agricultural products and foodstuffs [Murazzano (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.C_.2022.229.01.0018.01.ENG

O.J.E.U. C 234, 17th June 2022 – Publication of the amended single document following the approval of a minor amendment pursuant to the second subparagraph of Article 53(2) of Regulation (EU) No 1151/2012 [Roquefort (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.C_.2022.234.01.0009.01.ENG

O.J.E.U. L 165, 21st June 2022 – Commission Implementing Regulation (EU) 2022/955 of 14 June 2022 approving non-minor amendments to the product specification for a name entered in the register of protected designations of origin and protected geographical indications [Taleggio (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.165.01.0026.01.ENG

O.J.E.U. L 178, 5th July 2022 – Commission Implementing Regulation (EU) 2022/1106 of 27 June 2022 entering a name in the register of protected designations of origin and protected geographical indications [Queso de Acehuche (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.178.01.0001.01.ENG

O.J.E.U. C 263, 8th July 2022 – Publication of the amended single document following the approval of a minor amendment pursuant to the second subparagraph of Article 53(2) of Regulation (EU) No 1151/2012 [Grana Padano (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.C_.2022.263.01.0024.01.ENG

O.J.E.U. L 191, 20th July 2022 – Commission Implementing Regulation (EU) 2022/1246 of 14 July 2022 approving non-minor amendments to the specification for a name entered in the register of protected designations of origin and protected geographical indications [Bra (cheese) (PDO)]
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.191.01.0001.01.ENG

PESTICIDES

O.J.E.U. L 137, 16th May 2022 – Commission Implementing Regulation (EU) 2022/741 of 13 May 2022 concerning a coordinated multiannual control programme of the Union for 2023, 2024 and 2025 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin and repealing Implementing Regulation (EU) 2021/601
http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=uriserv:OJ.L_.2022.137.01.0012.01.ENG

AFNOR VALIDATIONS

During its June meeting, the Technical Committee of NF VALIDATION approved by vote:

Commercial name	Date	Certificate	Description
RENEWALS OF VALIDATIONS			
***BACILLUS CEREUS* RAPID AGAR (BACARA)**	Validation date: 2 Jul 2010 Renewal: 15 Jun 2022 **End of validity: 2 Jul 2026**	**AES-10/10-07/10**	**Enumeration of presumptive *Bacillus cereus*** All human food products and animal food products
***LISTERIA* PRECIS™**	Validation date: 8 Apr 2005 Renewal: 15 Jun 2022 **End of validity: 15 Sep 2026**	**UNI-03/05-09/06**	**Enumeration of *Listeria monocytogenes*** All human food products and industrial production environmental samples
ALOA COUNT	Validation date: 15 Sep 2006 Renewal: 15 Jun 2022 **End of validity: 15 Sep 2026**	**AES-10/05-09/06**	**Enumeration of *Listeria monocyto-genes* and *Listeria* spp.** All human food products and production environmental samples
VIDAS *LISTERIA MONOCYTOGENES* 2 (LMO2) (SAME PROTOCOL AS VIDAS *LISTERIA*)	Validation date: 3 Jul 2002 Renewal: 15 Jun 2022 **End of validity: 3 Jul 2026**	**BIO-12/09-07/02**	**Detection of *Listeria monocytogenes*** Meat products, dairy products, seafood products, vegetables products (except raw products) and production environmental samples
GENEDISC *LISTERIA MONOCYTOGENES*	Validation date: 2 Jul 2010 Renewal: 15 Jun 2022 **End of validity: 2 Jul 2026**	**GEN-25/08-07/10**	**Detection of *Listeria monocytogenes*** All human food products and production environmental samples
GENEDISC *LISTERIA* SPP.	Validation date: 2 Jul 2010 Renewal: 15 Jun 2022 **End of validity: 2 Jul 2026**	**GEN-25/07-07/10**	**Detection of *Listeria* spp.** All human food products and industrial production environmental samples
MICROSEQ® *SALMONELLA*	Validation date: 24 Sep 2010 Renewal:15 Jun 2022 **End of validity: 24 Sep 2026**	**ABI-29/02-09/10**	**Detection of *Salmonella* spp.** All human and animal food products, animal faeces and environmental samples from the primary production stage
VIDAS *SALMONELLA* (SINGLE SELECTIVE ENRICHMENT PROTOCOL)	Validation date: 18 Sep 2002 Renewal:15 Jun 2022 **End of validity: 18 Sep 2026**	**BIO-12/10-09/02**	**Detection of *Salmonella* spp.** All human food and pet food products
EXTENSIONS OF VALIDATIONS			
ESIA ONE DAY	Validation date: 27 Nov 2014 Extension: 16 Jun 2022 **End of validity: 27 Nov 2022**	**BIO-12/37-11/14**	**Detection of *Cronobacter* spp.** Milk powders, infant formula and infant cereals with or without probiotics, including ingredients, and production environmental samples
VIDAS UP *E. COLI* O157 INCLUDING H7 (ECPT)	Validation date: 18 May 2009 Extension: 16 Jun 2022 **End of validity: 18 May 2025**	**BIO-12/25-05/09**	**Detection of *E. coli* O157** Raw meat products, raw milk and raw milk products, raw vegetables and production environmental samples
VIDAS UP *SALMONELLA* (SPT)	Validation date: 6 Oct 2011 Extension: 16 Jun 2022 **End of validity: 6 Oct 2023**	**BIO-12/32-10/11**	**Detection of *Salmonella* spp.** All human food products, animal feeding stuffs and production environmental samples (including animal faeces and environmental samples from the primary production stage)

AFNOR VALIDATIONS

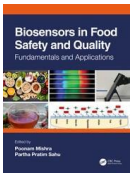
VIDAS EASY *SALMONELLA*	Validation date: 20 Sep 2005 Extension: 16 Jun 2022 **End of validity: 20 Sep 2021**	**BIO-12/16-09/05**	**Detection of *Salmonella* spp.** All human food products, feed products and production environmental samples (except primary production environment)
BAX SYSTEM REAL-TIME PCR ASSAY FPR *SALMONELLA* SPP.	Validation date: 26 Mar 2015 Extension: 15 Jun 2022 **End of validity: 26 Mar 2023**	**QUA-18/08-03/15**	**Detection of *Salmonella* spp.** Broad range of food (excluding milk powder), pet food and industrial production environmental samples (excluding primary production samples)
VIDAS UP *LISTERIA* (LPT)	Validation date: 10 May 2012 Extension: 16 Jun 2022 **End of validity: 10 May 2024**	**BIO-12/33-05/12**	**Detection of *Listeria* spp.** All human food products and industrial production environmental samples
VIDAS *LISTERIA* (LIS)	Validation date: 17 Jun 1994 Extension: 16 Jun 2022 **End of validity: 9 Jun 2026**	**BIO-12/02-06/94**	**Detection of *Listeria* spp.** All human food products and production environmental samples
VIDAS *LISTERIA* DUO (LDUO)	Validation date: 9 Mar 2006 Extension: 16 Jun 2022 **End of validity: 9 Mar 2026**	**BIO-12/18-03/06**	**Detection of *Listeria monocytogenes* and *Listeria* spp.** All human food products and production environmental samples
VIDAS *LISTERIA MONOCYTOGENES* XPRESS (LMX)	Validation date: 4 Feb 2010 Extension: 16 Jun 2022 **End of validity: 4 Feb 2026**	**BIO-12/27-02/10**	**Detection of *Listeria monocytogenes*** All human food products and production environmental samples
DELVOTEST®T	Validation date: 3 Feb 2012 Extension: 16 Jun 2022 **End of validity: 3 Feb 2024**	**DSM-28/02-02/12**	**Detection of antibiotics** Cow milk (with or without azidiol)

The validation certificates and the recapitulative list are available at the following website address:
https://nf-validation.afnor.org/en/food-industry/#discover-certified-methods

BOOKSHOP: LATEST PUBLICATIONS

Poonam Mishra ; Partha Pratim Sahu – **Biosensors in food safety and quality – Fundamentals and applications** – CRCPress – April 2022 – ISBN : 9780367201647 – 273 pages

https://www.routledge.com/Biosensors-in-Foo-d-Safety-and-Quality-Fundamentals-and-Applications/Mishra-Sahu/p/book/9780367201647#



This book covers various types of sensors and biosensors that can be used for food safety and food quality monitoring, but these are not limited to conventional sensors, such as temperature sensors, optical sensors, electrochemical sensors, calorimetric sensors, and pH sensors. The chapters are framed in a way that readers can experience the novel fabrication procedures of some advanced sensors, including lab-on-a-chip biosensors, IoT-based sensors, microcontroller-based sensors, and so on.

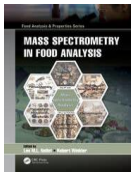
Leonardo Sepulveda Torre ; Cristobal Noé Aguilar ; Porteen Kannan ; A. K. Haghi – **Quantitative methods and analytical techniques in food microbiology** – CRCPress – June 2022 – ISBN : 9781774637265 – 304 pages

https://www.routledge.com/Quantitative-Methods-and-Analytical-Techniques-in-Food-Microbiology/Torre-Aguilar-Kannan-Haghi/p/book/9781774637265

This volume provides up-to-date and detailed scientific information on recent developments and new approaches in food microbiology, focusing on microbial food pathogens. The volume presents the fundamental aspects of food and microorganisms, and also addresses food systems and measures to prevent and control food, foodborne diseases, etc.

Leo M.L. Nollet ; Robert Winkler – **Mass spectrometry in food analysis** – CRCPress – March 2022 – ISBN : 9780367548797 – 462 pages

https://www.routledge.com/Mass-Spectrometry-in-Food-Analysis/Nollet-Winkler/p/book/9780367548797#



This book covers the mass spectrometry-based analysis of different aspects of food quality, which include nutritional value, profile of macronutrients (proteins, lipids, and carbohydrates), micronutrients (vitamins), and nutraceutical active compounds. Additionally, sensory quality, flavor, food pigments, safety, and detection of pesticides, contact materials, veterinary drugs and pharmaceuticals, organic pollutants, and pathogens are also covered.

IN THE PRESS – ON THE WEB

NOVEL FOOD

Safety of bovine milk osteopontin as a novel food pursuant to Regulation (EU) 2015/2283

https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2022.7137

▸ Following a request from the European Commission, EFSA's Panel on Nutrition, Novel Foods and Food Allergens was asked to deliver an opinion on bovine milk osteopontin (bmOPN) as a novel food (in accordance with Regulation (EU) 2015/2283) for use at a maximum use level of 151 mg/L, in infant formula, follow-on formula and ready-to-eat dairy-based meals for children up to 35 months. Based on the study carried out, the scientific group concludes that the new food is safe under the proposed conditions of use.

Safety of lacto-N-tetraose (LNT) produced by derivative strains of *Escherichia coli* BL21 (DE3) as a novel food pursuant to Regulation (EU) 2015/2283

https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2022.7242

▸ Following a request from the European Commission, EFSA's Panel on Nutrition, Novel Foods and Food Allergens was asked to deliver an opinion on lacto-N-tetraose (LNT) as a novel food (in accordance with Regulation (EU) 2015/2283) intended for use in a variety of foods, including infant formula and follow-on formula, foods for infants and young children, foods for medical purposes specials and dietary supplements. Based on the study carried out, the scientific group concludes that the new food is safe under the proposed conditions of use.

Safety of 3'sialyllactose (3'SL) sodium salt produced by derivative strains of *Escherichia coli* BL21 (DE3) as a novel food pursuant to Regulation (EU) 2015/2283

https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2022.7331

▸ Following a request from the European Commission, EFSA's Panel on Nutrition, Novel Foods and Food Allergens was asked to deliver an opinion on 3'-sialyllactose (3'-SL) as a novel food (in accordance with Regulation (EU) 2015/2283) intended for use in a variety of foods, including infant formula and follow-on formula, foods for infants and young children, foods for medical purposes specials and dietary supplements. Based on the study carried out, the scientific group concludes that the new food is safe under the proposed conditions of use.

Safety of 3-frucosyllactose (3-FL) produced by derivative strain of *Escherichia coli* BL21 (DE3) as a novel food pursuant to Regulation (EU) 2015/2283

https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2022.7329

▸ Following a request from the European Commission, EFSA's Panel on Nutrition, Novel Foods and Food Allergens was asked to deliver an opinion on 3-fucosyllactose (3-FL) as a novel food (in accordance with Regulation (EU) 2015/2283) intended for use in a variety of foods, including infant formula and follow-on formula, foods for infants and young children, foods for medical purposes specials and dietary supplements. Based on the study carried out, the scientific group concludes that the new food is safe under the proposed conditions of use.

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