COMMISSION IMPLEMENTING REGULATION (EU) 2023/859

of 25 April 2023

amending Implementing Regulation (EU) 2017/2470 as regards the specifications of the novel food 2'-Fucosyllactose (microbial source) to authorise its production by a derivative strain of *Corynebacterium glutamicum* ATCC 13032

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2015/2283 of the European Parliament and of the Council of 25 November 2015 on novel foods, amending Regulation (EU) No 1169/2011 of the European Parliament and of the Council and repealing Regulation (EC) No 258/97 of the European Parliament and of the Council and Commission Regulation (EC) No 1852/2001 ([1]), and in particular Article 12 thereof,

Whereas:

(1) Regulation (EU) 2015/2283 provides that only novel foods authorised and included in the Union list may be placed on the market within the Union.

(2) Pursuant to Article 8 of Regulation (EU) 2015/2283, Commission Implementing Regulation (EU) 2017/2470 ([2]) has established a Union list of authorised novel foods.

(3) Commission Implementing Decision (EU) 2016/376 ([3]) authorised, in accordance with Regulation (EC) No 258/97 of the European Parliament and of the Council ([4]), the placing on the market of synthetic 2′-Fucosyllactose ('2′-FL') as a novel food ingredient.

(4) Commission Implementing Decision (EU) 2017/2201 ([5]) authorised, in accordance with Regulation (EC) No 258/97, the placing on the market of 2′-FL (microbial source) produced with *Escherichia coli* strain BL21 as a novel food ingredient.

(5) On 23 June 2016, the company Glycom A/S, informed the Commission, pursuant to Article 5 of Regulation (EC) No 258/97, of its intention to place on the market 2′-FL (microbial source) produced by bacterial fermentation with *Escherichia coli* strain K-12. 2′-Fucosyllactose of microbial origin produced with *Escherichia coli* strain K-12 was included in the Union list of novel foods on the basis of that notification when the Union was established.

(6) Commission Implementing Regulation (EU) 2019/388 ([6]) authorised, in accordance with Regulation (EU) 2015/2283, the change of the specifications of the novel food 2′-FL (microbial source) produced with *Escherichia coli* K-12 to modify the levels of 2′-FL, D-Lactose and Difucosyl-D-lactose.

([1]) OJ L 327, 11.12.2015, p. 1.

([2]) Commission Implementing Regulation (EU) 2017/2470 of 20 December 2017 establishing the Union list of novel foods in accordance with Regulation (EU) 2015/2283 of the European Parliament and of the Council on novel foods (OJ L 351, 30.12.2017, p. 72).

([3]) Commission Implementing Decision (EU) 2016/376 of 11 March 2016 authorising the placing on the market of 2′-O-fucosyllactose as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 70, 16.3.2016, p. 27).

([4]) Regulation (EC) No 258/97 of the European Parliament and of the Council of 27 January 1997 concerning novel food and novel food ingredients (OJ L 43, 14.2.1997, p. 1).

([5]) Commission Implementing Decision (EU) 2017/2201 of 27 November 2017 authorising the placing on the market of 2′-fucosyllactose produced with Escherichia coli strain BL21 as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 313, 29.11.2017, p. 5).

([6]) Commission Implementing Regulation (EU) 2019/388 of 11 March 2019 authorising the change in the specifications of the novel food 2'-fucosyllactose produced with *Escherichia coli* K-12 under Regulation (EU) 2015/2283 of the European Parliament and of the Council and amending Commission Implementing Regulation (EU) 2017/2470 (OJ L 70, 12.3.2019, p. 21).

(7) On 7 July 2020, the company Advanced Protein Technologies Corporation ('the applicant') submitted an application to the Commission in accordance with Article 10(1) of Regulation (EU) 2015/2283 for a change in the specifications of 2′-FL (microbial source) to authorise its production by microbial fermentation using a genetically modified derivative strain of *Corynebacterium glutamicum* ATCC 13032.

(8) On 7 July 2020, the applicant also made a request to the Commission for the protection of proprietary scientific studies and data on nuclear magnetic resonance ('NMR') tests for the determination of the identity of 2′-FL ([7]); a genetic sequence analyses description of the genetically modified 2′-FL production strain ([8]); results of analyses to confirm the absence of viable cells of the derivative strain of *Corynebacterium glutamicum* ATCC 13032 ([9]); a bacterial reverse mutation test with 2′-FL ([10]); an *in vitro* chromosome aberration test with 2′-FL ([11]); an *in vitro* mammalian cell micronucleus test with 2′-FL ([12]); an *in vitro* human lymphocyte micronucleus test with 2′-FL ([13]); an acute oral toxicity study in rats ([14]); and, a 90-day oral toxicity study in rats with 2′-FL ([15]), submitted in support of the application.

(9) In accordance with Article 10(3) of Regulation (EU) 2015/2283, on 13 October 2020, the Commission requested the European Food Safety Authority ('the Authority') to carry out an assessment of 2′-FL produced by microbial fermentation using a genetically modified derivative strain of *Corynebacterium glutamicum* ATCC 13032.

(10) On 26 October 2022, the Authority adopted its scientific opinion on the Safety of 2′-fucosyllactose (2′-FL) produced by a derivative strain (APC199) of *Corynebacterium glutamicum* ATCC 13032 as a novel food pursuant to Regulation (EU) 2015/2283 ([16]) in accordance with the requirements of Article 11 of Regulation (EU) 2015/2283.

(11) In its scientific opinion, the Authority concluded that 2′-FL produced by microbial fermentation using a genetically modified derivative strain of *Corynebacterium glutamicum* ATCC 13032 is safe when used under the currently authorised conditions of use. Therefore, that scientific opinion gives sufficient grounds to establish that 2′-FL produced by microbial fermentation using a genetically modified derivative strain of *Corynebacterium glutamicum* ATCC 13032 when used at under currently authorised conditions of use fulfils the conditions for its placing on the market in accordance with Article 12(1) of Regulation (EU) 2015/2283.

(12) In its scientific opinion, the Authority noted that its conclusion on the safety of the novel food was based on scientific studies and data from the nuclear magnetic resonance ('NMR') tests for the determination of the identity of 2′-FL; the genetic sequence analyses description of the genetically modified 2′-FL production strain; the results of analyses to confirm the absence of viable cells of the derivative strain of *Corynebacterium glutamicum* ATCC 13032; the bacterial reverse mutation test with 2′-FL; the *in vitro* chromosome aberration test with 2′-FL; the *in vitro* mammalian cell micronucleus test with 2′-FL, the *in vitro* human lymphocyte micronucleus test with 2′-FL; and the 90-day oral toxicity study in rats with 2′-FL, contained in the applicant's file, without which it could not have assessed the novel food and reached its conclusion.

(13) The Commission requested the applicant to further clarify the justification provided with regard to their proprietary claim over those studies and data, and to clarify their claim to an exclusive right of reference to them in accordance with Article 26(2)(b) of Regulation (EU) 2015/2283.

(14) The applicant declared that they held proprietary and exclusive rights of reference to the scientific studies and data on the nuclear magnetic resonance ('NMR') tests for the determination of the identity of 2′-FL the genetic sequence analyses description of the genetically modified 2′-FL production strain; the results of analyses to confirm the absence of viable cells of the derivative strain of *Corynebacterium glutamicum* ATCC 13032; the bacterial reverse

([7]) Gyeonggi Busness & Science Accelerator (2021, unpublished).
([8]) Advanced Protein Technologies Corporation (2021, unpublished).
([9]) Advanced Protein Technologies Corporation (2021, unpublished).
([10]) Biotoxtech Company, Ltd. (2019a, unpublished).
([11]) Biotoxtech Company, Ltd. (2019b, unpublished).
([12]) Biotoxtech Company, Ltd. (2019c, unpublished).
([13]) GenEvolutioN (2021, unpublished).
([14]) Biotoxtech Company, Ltd. (2019d, unpublished)
([15]) Biotoxtech Company, Ltd. (2019e, unpublished).
([16]) *EFSA Journal* 2022;20(12)7647.

mutation test with 2′-FL; the *in vitro* chromosome aberration test with 2′-FL; the *in vitro* mammalian cell micronucleus test with 2′-FL; the *in vitro* human lymphocyte micronucleus test with 2′-FL; and, the 90-day oral toxicity study in rats with 2′-FL, under national law at the time they submitted the application and that third parties cannot lawfully access, use or refer to those data and studies.

(15) The Commission assessed all the information provided by the applicant and considered that the applicant has sufficiently substantiated the fulfilment of the requirements laid down in Article 26(2) of Regulation (EU) 2015/2283. Therefore, the studies and data on the nuclear magnetic resonance ('NMR') tests for the determination of the identity of 2′-FL; the genetic sequence analyses description of the genetically modified 2′-FL production strain; the results of analyses to confirm the absence of viable cells of the derivative strain of *Corynebacterium glutamicum* ATCC 13032; the bacterial reverse mutation test with 2′-FL, the *in vitro* chromosome aberration test with 2′-FL; the *in vitro* mammalian cell micronucleus test with 2′-FL; the *in vitro* human lymphocyte micronucleus test with 2′-FL; and, the 90-day oral toxicity study in rats with 2′-FL, should be protected in accordance with Article 27(1) of Regulation (EU) 2015/2283. Accordingly, only the applicant should be authorised to place 2′-FL produced with a derivative strain of *Corynebacterium glutamicum* ATCC 13032 on the market within the Union during a period of five years from the entry into force of this Regulation.

(16) However, restricting the authorisation of 2′-FL produced with a derivative strain of *Corynebacterium glutamicum* ATCC 13032 and the reference to the scientific data contained in the applicant's file for the sole use by them does not prevent subsequent applicants from applying for an authorisation to place on the market the same novel food provided that their application is based on legally obtained information supporting such an authorisation.

(17) The information provided in the application and the Authority's opinion gives sufficient grounds to establish that the changes in the specifications of the novel food 2′-Fucosyllactose (microbial source) to authorise 2′-FL produced with a derivative strain of *Corynebacterium glutamicum* ATCC 13032 are in accordance with the conditions of Article 12 of Regulation (EU) 2015/2283 and should be approved.

(18) The Annex to Implementing Regulation (EU) 2017/2470 should therefore be amended accordingly.

(19) The measures provided for in this Regulation are in accordance with the opinion of the Standing Committee on Plants, Animals, Food and Feed,

HAS ADOPTED THIS REGULATION:

Article 1

The Annex to Implementing Regulation (EU) 2017/2470 is amended in accordance with the Annex to this Regulation.

Article 2

Only the company 'Advanced Protein Technologies Corporation' ([17]) is authorised to place on the market within the Union the novel food 2′-Fucosyllactose (microbial source) produced with a derivative strain of *Corynebacterium glutamicum* ATCC 13032, for a period of five years from 16 May 2023, unless a subsequent applicant obtains an authorisation for that novel food without reference to the scientific data protected pursuant to Article 3 or with the agreement of 'Advanced Protein Technologies Corporation'.

([17]) Address: 7th Floor GyeongGi-BioCenter, 147, Gwanggyo-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16229 South Korea.

Article 3

The scientific data contained in the application file and fulfilling the conditions laid down in Article 26(2) of Regulation (EU) 2015/2283 shall not be used for the benefit of a subsequent applicant for a period of five years from the date of entry into force of this Regulation without the agreement of 'Advanced Protein Technologies Corporation'.

Article 4

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 25 April 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX

In Table 2 (Specifications) of the Annex to Implementing Regulation (EU) 2017/2470 the entry for 2′-Fucosyllactose (microbial source) is replaced by the following:

‘Specifications				Data protection
	Definition: Chemical name: α-L-Fucopyranosyl-(1 → 2)-β-D-galactopyranosyl-(1 → 4)-D-glucopyranose Chemical formula: $C_{18}H_{32}O_{15}$ CAS No: 41263-94-9 Molecular weight: 488,44 g/mol			2′-Fucosyllactose produced with a genetically modified strain of Corynebacterium glutamicum ATCC 13032 authorised on 16 May 2023. This inclusion is based on proprietary scientific evidence and scientific data protected in accordance with Article 26 of Regulation (EU) 2015/2283. Applicant: “Advanced Protein Technologies Corporation”, 7th Floor GyeongGi-BioCenter, 147, Gwanggyo-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16229 South Korea. During the period of data protection, 2′-Fucosyllactose produced with a genetically modified strain of Corynebacterium glutamicum ATCC 13032 is authorised for placing on the market within the Union only by “Advanced Protein Technologies Corporation” unless a subsequent applicant obtains authorisation for the novel food without reference to the proprietary scientific evidence or scientific data protected in accordance with Article 26 of Regulation (EU) 2015/2283 or with the agreement of “Advanced Protein Technologies Corporation”. End date of the data protection: 16 May 2028.’
2’-Fucosyllactose (microbial source)	**Source:** Genetically modified strain of *Escherichia coli* K-12	**Source:** Genetically modified strain of *Escherichia coli* BL-21	**Source**: Genetically modified strain of *Corynebacterium glutamicum* ATCC 13032	
	Description: 2′-Fucosyllactose is a white to off-white powder that is produced by a microbiological process. **Purity:** 2′-Fucosyllactose: ≥ 83 % D-Lactose: ≤ 10,0 % L-Fucose: ≤ 2,0 % Difucosyl-D-lactose: ≤ 5,0 % 2′-Fucosyl-D-lactulose: ≤ 1,5 % Sum of saccharides (2′-Fucosyllactose, D-Lactose, L-Fucose, Difucosyl-D-lactose, 2′-Fucosyl-D-lactulose): ≥ 90 % pH (20 C, 5 % solution): 3,0-7,5 Water: ≤ 9,0 %	**Description:** 2′-Fucosyllactose is a white to off white powder and the liquid concentrate (45 % ± 5 % w/v) aqueous solution is a colourless to slight yellow clear aqueous solution. 2′-Fucosyllactose is produced by a microbiological process. **Purity:** 2′-Fucosyllactose: ≥ 90 % Lactose: ≤ 5,0 % Fucose: ≤ 3,0 % 3-Fucosyllactose: ≤ 5,0 % Fucosylgalactose: ≤ 3,0 % Difucosyllactose: ≤ 5,0 % Glucose: ≤ 3,0 %	**Description:** 2′-Fucosyllactose is a white to off white/ivory powder that is produced by a microbiological process. **Purity:** 2′-Fucosyllactose (w/w dry matter): ≥ 94,0 % D-Lactose (w/w dry matter): ≤ 3,0 % L-Fucose (w/w dry matter): ≤ 3,0 % 3-Fucosyllactose (w/w dry matter): ≤ 3,0 % Difucosyllactose (w/w dry matter): ≤ 2,0 % D-Glucose (w/w dry matter): ≤ 3,0 % D-Galactose (w/w dry matter): ≤ 3,0 %	

	Sulphated ash: ≤ 2,0 % Acetic acid: ≤ 1,0 % Residual proteins: ≤ 0,01 % **Microbiological criteria:** Aerobic mesophilic bacteria total count: ≤ 3 000 CFU/g Yeasts: ≤ 100 CFU/g Moulds: ≤ 100 CFU/g Endotoxins: ≤ 10 EU/mg CFU: Colony Forming Units; EU: Endotoxin Units	Galactose: ≤ 3,0 % Water: ≤ 9,0 % (powder) Ash, sulphated: ≤ 0,5 % (powder and liquid) Residual proteins: ≤ 0,01 % (powder and liquid) **Heavy Metals:** Lead: ≤ 0,02 mg/kg (powder and liquid) Arsenic: ≤ 0,2 mg/kg (powder and liquid) Cadmium: ≤ 0,1 mg/kg (powder and liquid) Mercury: ≤ 0,5 mg/kg (powder and liquid) **Microbiological criteria:** Total plate count: ≤ 104 CFU/g (powder), ≤ 5 000 CFU/g (liquid) Yeasts and Moulds: ≤ 100 CFU/g (powder); ≤ 50 CFU/g (liquid) Enterobacteriaceae/Coliforms: absence in 11 g (powder and liquid) Salmonella: negative/100 g (powder), negative/200 ml (liquid) Cronobacter: negative/100 g (powder), negative/200 ml (liquid) Endotoxins: ≤ 100 EU/g (powder), ≤ 100 EU/ml (liquid) Aflatoxin M1: ≤ 0,025 µg/kg (powder and liquid) CFU: Colony Forming Units; EU: Endotoxin Units	Water: ≤ 9,0 % Ash: ≤ 0,5 % Residual proteins: ≤ 0,005 % **Contaminants**: Arsenic: ≤ 0,03 mg/kg Aflatoxin M1: ≤ 0,025 µg/kg Ethanol: ≤ 1 000 mg/kg **Microbiological criteria**: Total plate count: ≤ 500 CFU/g Yeasts and Moulds: ≤ 100 CFU/g Enterobacteriaceae: absence in 10 g *Salmonella*: absence in 25 g *Cronobacter* spp.: absence in 10 g Endotoxins: ≤ 100 EU/g CFU: Colony Forming Units; EU: Endotoxin Units	