Submission to FSANZ:

A1318 Steviol glycosides produced by enzymatic conversion using enzymes produced by GM Escherichia coli BL21

Australian Beverages Council Limited

20 May 2025

Australian Beverages 75 YEARS OF SERVICE

About the Australian Beverages Council

The Australian Beverages Council Limited (ABCL) is the leading peak body representing Australia's non-alcoholic beverages industry.

The Australian Beverages Council Limited (ABCL) has been the leading peak body representing the non-alcoholic beverages industry for more than 75 years and is the only dedicated industry representative of its kind in Australia. The ABCL represents approximately 95 per cent of the industry's production volume and Member companies range from some of Australia's largest beverage manufacturers to small and micro beverage companies whose drinks are enjoyed nationally as well as around the world. These drinks include carbonated soft drinks, energy drinks, sports and electrolyte drinks, frozen drinks, bottled and packaged waters, fruit juice and fruit drinks, cordials, iced teas, ready-to-drink coffees, flavoured milk products and flavoured plant milks.

Collectively, the ABCL's Members contribute more than $9 billion annually to the Australian economy and support more than 63,000 full-time equivalent employees. The industry pays more than $1.5 billion in tax per annum along its supply chain and for every direct employee in the beverages manufacturing industry, there are 4.9 jobs required elsewhere in the Australian economy to produce and retail our drinks.

General Comments

The ABCL appreciates the opportunity to provide comments to Food Standards Australia New Zealand (FSANZ) regarding the assessment of Application A1318, which seeks to permit the use of three new enzymes sourced from a genetically modified (GM) strain of *Escherichia coli* BL21, as processing aids for the enzymatic conversion of the steviol glycoside rebaudioside A to rebaudioside M.

FSANZ has previously assessed several applications involving the enzymatic modification or manufacture of steviol glycosides, to which the ABCL has submitted comments in support, including A1157, A1176, A1183 and A1268.

The ABCL understands A1318 is seeking FSANZ approval for the inclusion of three new GM enzymes as processing aids to produce the steviol glycoside Rebaudioside M using the bioconversion method, in accordance with the Food Standards Code (the Code). The three enzymes are:

1. sucrose synthase (EC 2.4.1.13), produced by GM *Escherichia coli* BL21, expressing the gene for sucrose synthase from *Arabidopsis thaliana,*
2. uridine diphosphate (UDP)-glucosyltransferase (91D2), produced by GM *Escherichia coli* BL21, expressing the gene for UDP-glucosyltransferase from *Stevia rebaudiana*, and
3. uridine diphosphate (UDP)-glucosyltransferase (76G1), produced by GM *Escherichia coli* BL21, expressing the gene for UDP-glucosyltransferase from *Stevia rebaudiana*.

The ABCL supports FSANZ's risk assessment (Supporting document 1), including the technological justification for the use of the three enzymes as processing aids in the bioconversion production method of steviol glycosides. We note the consistency of the approach with the JECFA framework for the specification of steviol glycosides, and the recognition that these enzymes are appropriately classified as processing aids with a history of safe use in steviol glycoside production.

There is increasing pressure on the non-alcoholic beverage industry to reduce sugar content without compromising on taste. Being 150-300 times sweeter than sucrose, enzymatically modified steviol glycosides are a valuable intense sweetener, offering a sensory profile close to sucrose and enabling the development of no-sugar products that still meet consumers' taste expectations. As taste remains a key driver of choice for consumers, industry access to high-quality, affordable sweeteners is essential to support meaningful sugar reduction while maintaining product appeal.

ABCL position on the draft variation

The ABCL supports the draft variation to the Code set out in Attachment A of the A1318 consultation paper, however, it recommends an amendment to correct a typographical error under Schedule 3 of the draft variation in subparagraph S3—35(2)(f)(ii):

Current text in the draft variation:

> *(ii) sucrose synthase (EC 2.4.13) sourced from Escherichia coli K-12;*

to be amended to:

> *(ii) sucrose synthase (EC 2.4.1.13) sourced from Escherichia coli K-12;*

This amendment will include the correct nomenclature of the EC number of sucrose synthase, as consistent with its use in subparagraph S3-35(2)(g)(ii).

Further Enquiries

Should you have any queries regarding the positions detailed in this submission, please contact: Paula Louw, Nutrition & Regulatory Officer, via email paula@ausbev.org.