Madhu Soni, Ph.D.
Soni & Associates
749 46th Square
Vero Beach, FL 32968

Re: GRAS Notice No. GRN 001181

Dear Dr. Soni:

The Food and Drug Administration (FDA, we) completed our evaluation of GRN 001181. We received the notice that you submitted on behalf of Abode Biotec India Private Limited (Abode) on February 21, 2024, and filed it on May 3, 2024. Abode submitted amendments to the notice on June 24, June 29, July 3, and July 18, 2024, that clarified the identity, manufacturing process, specifications, and safety information.

The subject of the notice is *Weizmannia coagulans* LMG S-31876 spore preparation (*Weizmannia coagulans* LMG S-31876) for use at a maximum level of 2 x 10^9 colony forming units (CFU)/serving as an ingredient in baked goods and baking mixes; breakfast cereals; beverages and beverage bases; coffee and tea; milk and milk products; dairy product analogs; fruit juices; condiments and relishes; confections and frostings; frozen dairy desserts and mixes; fruit and water ices; jams and jellies; gelatins, puddings and fillings; grain products and pastas; hard and soft candy; chewing gum; extracts, flavorings, herbs, seeds, spices, seasonings and blends; nuts and nut products; plant protein products; processed fruits; processed vegetables and vegetable juices; snack foods; soups and soup mixes; sugar; and sweet sauces, toppings and syrups.[1] The notice informs us of Abode's view that these uses of *W. coagulans* LMG S-31876 are GRAS through scientific procedures.

Abode describes *W. coagulans* LMG S-31876 as a dark grayish white colored powder and states that *W. coagulans* LMG S-31876 is a non-pathogenic, non-toxigenic, Gram-positive, rod-shaped, spore forming bacterium. Abode notes that the strain was isolated from fermented rice and has been deposited in the Belgian Coordinated Collections of Microorganisms/Laboratorium voor Microbiologie (BCCM/LMG) and Microbial Type Culture Collection-International Depositary Authority (MTCC-IDA) with the depository number LMG S-31876 and MTCC 25396, respectively. Abode describes the taxonomic analysis for the identity

[1] Abode states that *W. coagulans* LMG S-31876 is not intended for use in infant formula, foods intended for infants and toddlers, products under the jurisdiction of the United States Department of Agriculture, or in foods where standards of identity preclude its use.

of the strain. Abode also discusses the results of genomic analyses to confirm the strain identity and states that the strain is not genetically engineered. Abode discusses the results of phenotypic and genotypic characterization performed on *W. coagulans* LMG S-31876. Abode states that no genes for toxins or biogenic amine producing proteins were identified, and that the putative virulence factors found in the genome were involved in defensive mechanism, adhesion and sporulation.

Abode describes the manufacture of *W. coagulans* LMG S-31876 by fermentation of a pure culture under controlled conditions. After fermentation, the spore biomass is subjected to centrifugation, spray-dried, blended, and mixed with food grade maltodextrin or lactose to yield the final product. Abode states that *W. coagulans* LMG S-31876 is manufactured under current good manufacturing practices using food-grade raw materials. Abode states that all processing aids used in the manufacture of *W. coagulans* LMG S-31876 are permitted for their respective uses under a current U.S. regulation, are the subject of an effective food contact notification, or are GRAS for their intended use. Abode states that *W. coagulans* LMG S-31876 does not contain any major allergens.

Abode provides specifications for *W. coagulans* LMG S-31876 that include total cell count ≥5 x 10^{10} spores/g), loss on drying (≤6% w/w), lactic acid producing capacity (≥10 ml of 0.05 N NaOH consumed), and limits for microorganisms, including *Escherichia coli* (negative in 10 g), *Salmonella* serovars (negative in 10 g), *Listeria* spp. (negative in 25 g), *Staphylococcus aureus* (negative in 1 g), *Pseudomonas aeruginosa* (negative in 1 g), *Bacillus cereus* (negative in 1 g), and heavy metals, including lead (≤0.1 mg/kg). Abode provides the results from the analyses of three non-consecutive batches to demonstrate that *W. coagulans* LMG S-31876 can be manufactured to meet these specifications.

Abode estimates the dietary exposure to *W. coagulans* LMG S-31876 from the intended uses to be 36.4 x 10^9 CFU/d based on the assumption that males aged 51 and older consume the largest number of servings of food a day at 18.2 servings, and that all of these servings would contain *W. coagulans* LMG S-31876 at the maximum use level of 2 x 10^9 CFU/serving. Abode states that the uses of *W. coagulans* LMG S-31876 are identical to those in GRN 000949[2] and the use of *W. coagulans* LMG S-31876 is as an alternative strain to that in GRN 000949. Therefore, there would not be an increase in the dietary exposure to *W. coagulans* from the intended use.

Abode discusses data and information used to support the safety of *W. coagulans* LMG S-31876, including a history of safe use of the *W. coagulans* species in fermented foods. Abode incorporates into their notice and provides summaries of the information pertaining to the safety of live *W. coagulans* spore preparations in food discussed in GRNs 000399, 000526, 000597, 000601, 000691, and 000949.[3] Abode discusses

[2] *W. coagulans* DSM17654 was the subject of GRN 000949. We evaluated this notice and responded in a letter dated January 7, 2021 stating that we had no questions at the time regarding the notifier's GRAS conclusion.

[3] *W. coagulans* GBI-30 6086, Unique IS2, SNZ 1969, MTCC 5856, and SANK 70258 were the subjects of

opportunistic infection caused by certain *W. coagulans* strains and states that the infection occurs at very low rates, and generally occurs in immunocompromised patients. Abode summarizes published toxicology studies and human studies on *W. coagulans* spore preparations, and states that no toxicity was reported in animal studies at doses up to 1×10^{12} spores/kg bw/d and no adverse effects were noted in human studies. Abode concludes that there are no indications of safety concerns.

Based on the totality of the data and information, Abode concludes that *W. coagulans* LMG S-31876 is GRAS for its intended use.

Standards of Identity

In the notice, Abode states its intention to use *W. coagulans* LMG S-31876 in several food categories, including foods for which standards of identity exist, located in Title 21 of the Code of Federal Regulations. We note that an ingredient that is lawfully added to food products may be used in a standardized food only if it is permitted by the applicable standard of identity.

Potential Labeling Issues

Under section 403(a) of the Federal Food, Drug, & Cosmetic (FD&C) Act, a food is misbranded if its labeling is false or misleading in any way. Section 403(r) of the FD&C Act lays out the statutory framework for labeling claims characterizing a nutrient level in a food or the relationship of a nutrient to a disease or health-related condition (also referred to as nutrient content claims and health claims). If products containing *W. coagulans* LMG S-31876 bear any nutrient content or health claims on the label or in labeling, such claims are subject to the applicable requirements and are under the purview of the Office of Nutrition and Food Labeling (ONFL) in the Center for Food Safety and Applied Nutrition. The Office of Food Additive Safety (OFAS) did not consult with ONFL on this issue or evaluate any information in terms of labeling claims. Questions related to food labeling should be directed to ONFL.

Section 301(ll) of the FD&C Act

Section 301(ll) of the FD&C Act prohibits the introduction or delivery for introduction into interstate commerce of any food that contains a drug approved under section 505 of the FD&C Act, a biological product licensed under section 351 of the Public Health Service Act, or a drug or a biological product for which substantial clinical investigations have been instituted and their existence made public, unless one of the exemptions in section 301(ll)(1)-(4) applies. In our evaluation of Abode's notice concluding that *W. coagulans* LMG S-31876 is GRAS under its intended conditions of use, we did not consider whether section 301(ll) or any of its exemptions apply to foods containing *W.*

GRNs 000399, 000526, 000597, 000601, and 000691, respectively. We evaluated these notices and responded in letters dated July 31, 2012, March 23, 2015, February 29, 2016, April 28, 2016, and August 28, 2017, respectively, stating that we had no questions at the time regarding the notifiers' GRAS conclusions.

coagulans LMG S-31876. Accordingly, our response should not be construed to be a statement that foods containing *W. coagulans* LMG S-31876, if introduced or delivered for introduction into interstate commerce, would not violate section 301(ll).

Conclusions

Based on the information that Abode provided, as well as other information available to FDA, we have no questions at this time regarding Abode's conclusion that *W. coagulans* LMG S-31876 is GRAS under its intended conditions of use. This letter is not an affirmation that *W. coagulans* LMG S-31876 is GRAS under 21 CFR 170.35. Unless noted above, our review did not address other provisions of the FD&C Act. Food ingredient manufacturers and food producers are responsible for ensuring that marketed products are safe and compliant with all applicable legal and regulatory requirements.

In accordance with 21 CFR 170.275(b)(2), the text of this letter responding to GRN 001181 is accessible to the public at www.fda.gov/grasnoticeinventory.

Sincerely,

Susan J. Carlson -S

Digitally signed by Susan J. Carlson -S
Date: 2024.07.25 15:19:37 -04'00'

Susan J. Carlson, Ph.D.
Director
Division of Food Ingredients
Office of Food Additive Safety
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