U.S. FOOD & DRUG ADMINISTRATION

Human Foods Program

Chunchang Fang, Ph.D.
Sunway Biotech Co., Ltd.
No. 139, Xing'ai Rd., Neihu Dist.
Taipei City 114
TAIWAN (R.O.C.)

Re: GRAS Notice No. GRN 001232

Dear Dr. Fang:

This letter corrects our response letter to GRN 001232 signed on August 6, 2025. The purpose of this revised letter is to correct the limit for *Listeria* in paragraph 5 of the original response letter. The original response letter referred to the limit for *Listeria* as negative in 25 g, but the correct limit for *Listeria* is negative in 1 g.

The Food and Drug Administration (FDA, we) completed our evaluation of GRN 001232. We received the notice that you submitted on behalf of Sunway Biotech Co., Ltd. (Sunway) on November 26, 2024, and filed it on March 6, 2025. Sunway submitted amendments to the notice on May 16, 2025, and June 2, 2025, providing additional information about the manufacturing process, analytical data, specifications, intended uses, and dietary exposure.

The subject of the notice is *Lacticaseibacillus paracasei* subsp. *paracasei* strain DSM 28047 for use as an ingredient in conventional foods at a level up to 1×10^{10} colony forming units (CFU)/serving, (excluding infant formula, products under the jurisdiction of the United States Department of Agriculture, alcoholic beverages). The notice informs us of Sunway's view that these uses of *L. paracasei* subsp. *paracasei* strain DSM 28047 are GRAS through scientific procedures.

Sunway describes *L. paracasei* subsp. *paracasei* strain DSM 28047 as a white to light yellow powder. Sunway states that *L. paracasei* subsp. *paracasei* strain DSM 28047 is an anaerobic, non-spore forming, Gram-positive, rod-shaped bacterium. The strain was isolated from the feces of a healthy infant and is deposited in the German Collection of Microorganisms and Cell Cultures (DSMZ) under accession number 28047. Sunway discusses the results of phenotypic and genotypic characterization to confirm the strain's identity. Sunway states that the strain was previously classified as a strain of *Lactobacillus paracasei* subsp. *paracasei* and cites a published study describing its reclassification as a strain of *Lacticaseibacillus paracasei* subsp. *paracasei*.

Sunway describes the manufacture of *L. paracasei* subsp. *paracasei* strain DSM 28047 by fermentation of a pure culture under controlled conditions. Sunway states that dairy

and soy ingredients are used as raw materials during the fermentation process and are present in the final ingredient. After fermentation, the bacterial cells are separated from the fermentation media by centrifugation. Cryoprotectants are added to the bacterial biomass before freezing in liquid nitrogen and then freeze drying. The freeze-dried pellets are subsequently lyophilized, milled, sieved, and mixed with excipients to yield the final product. Sunway states that *L. paracasei* subsp. *paracasei* strain DSM 28047 is manufactured in accordance with good manufacturing practices and that all raw materials are food-grade and are used in accordance with applicable U.S. regulations or are GRAS for the intended use.

Sunway provides specifications for *L. paracasei* subsp. *paracasei* strain DSM 28047 that include lactic acid bacteria (≥ 1.0×10^{11} CFU/g), total plate count (< 5.0×10^4 CFU/g), water content (< 6.0 %), water activity (< 0.20 Aw), and limits for heavy metals, including lead (≤ 0.1 mg/kg), and microorganisms, including *Escherichia coli* (negative in 50 g), mold and yeast (< 10^2 CFU/g), coliforms (< 10 CFU/g), *Staphylococcus* (negative in 50 g), *Salmonella* serovars (negative in 25 g), and *Listeria* (negative in 1 g). Sunway provides results from the analyses of five non-consecutive batches to demonstrate that *L. paracasei* subsp. *paracasei* strain DSM 28047 can be manufactured to conform with the provided specifications. Sunway states that *L. paracasei* subsp. *paracasei* strain DSM 28047 is stable at 4 °C and –20 °C for at least 24 months.

Sunway estimates the dietary exposure to *L. paracasei* subsp. *paracasei* strain DSM 28047 from the intended uses to be 1×10^{11} CFU/person/d based on the assumption that an individual consumes on average 20 servings of food/d in the U.S. and that 10 servings of food would contain *L. paracasei* strain DSM 28047 at the maximum use level of 1×10^{10} CFU/serving.

Sunway discusses data and information used to support the safety of *L. paracasei* subsp. *paracasei* strain DSM 28047, including the use of *L. paracasei* strains in food and beverage products. Sunway states that *L. paracasei* strains are used to ferment many traditional foods and are used in several food and beverage products. Published reports describe the use of *L. paracasei* strains in lactic acid bacterial cultures used to ferment yogurt, cheese, milk, and other food products. Sunway also discusses that the European Food Safety Authority considered *L. paracasei* to meet Qualified Presumption of Safety (QPS) status beginning in 2007 and has maintained its status through the 2024 publication. Sunway states that the complete genome sequence of *L. paracasei* subsp. *paracasei* strain DSM 28047 is stored in GenBank under accession number GCA_002901165.3 and has been used for gene function and safety analyses. Sunway discusses a published safety assessment demonstrating that *L. paracasei* subsp. *paracasei* strain DSM 28047 poses no risk of antibiotic resistance and lacks markers for pathogenicity or toxicity. Sunway also discusses the results of a randomized, double-blind, placebo-controlled study in which healthy adults consumed 1×10^{10} CFU *L. paracasei* subsp. *paracasei* strain DSM 28047 once per day for four weeks. Sunway discusses that the results of the study demonstrate that consumption of *L. paracasei* subsp. *paracasei* strain DSM 28047 does not induce adverse symptoms. The strain is named "*L. paracasei* subsp. *paracasei* NTU 101" in GenBank and in the published

safety studies.

Based on the totality of the information, Sunway concludes that *L. paracasei* subsp. *paracasei* strain DSM 28047 is GRAS for its intended use.

Standard of Identity

In the notice, Sunway states its intention to use *L. paracasei* subsp. *paracasei* strain DSM 28047 in several food categories, including foods for which standards of identity exist, located in Title 21 of the CFR. 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 standards of identity.

Potential Labeling Issues

Under section 403(a) of the Food, Drug, and Cosmetic Act (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 s *L. paracasei* subsp. *paracasei* strain DSM 28047 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 ONFL in the NCE. OPMAS 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.

Allergen Labeling

The FD&C Act requires that the label of a food that is or contains an ingredient that contains a "major food allergen" declare the allergen's presence (section 403(w)). The FD&C Act defines a "major food allergen" as one of nine foods or food groups (i.e., milk, eggs, fish, Crustacean shellfish, tree nuts, peanuts, wheat, soybeans, and sesame) or a food ingredient that contains protein derived from one of those foods. *L. paracasei* subsp. *paracasei* strain DSM 28047 requires labeling under the FD&C Act because it contains protein derived from soy and milk.

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 Sunway's notice concluding that *L. paracasei* subsp. *paracasei* strain DSM 28047 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 *L. paracasei* subsp. *paracasei* strain DSM 28047. Accordingly, our response

should not be construed to be a statement that foods containing *L. paracasei* subsp. *paracasei* strain DSM 28047, if introduced or delivered for introduction into interstate commerce, would not violate section 301(ll).

Conclusions

Based on the information that Sunway provided, as well as other information available to FDA, we have no questions at this time regarding Sunway's conclusion that *L. paracasei* subsp. *paracasei* strain DSM 28047 is GRAS under its intended conditions of use. This letter is not an affirmation that *L. paracasei* subsp. *paracasei* strain DSM 28047 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 001232 is accessible to the public at www.fda.gov/grasnoticeinventory.

Sincerely,

Susan J. Carlson -S

Digitally signed by Susan JCarlson -S
Date: 2025.08.14 17:56:34 -04'00'

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