David Brown
Chinova Bioworks Inc.
50 Crowther Lane, Suite 100
Fredericton, New Brunswick E3C 0J1
CANADA

Re: GRAS Notice No. GRN 000997

Dear Mr. Brown:

The Food and Drug Administration (FDA, we) completed our evaluation of the supplement to GRN 000997, dated March 27, 2023. The supplement expands the uses of chitosan from white button mushrooms (*Agaricus bisporus)* as an antimicrobial to include beer, cider, seltzers, and wine at levels up to 0.04 g/100 g and increases the use level in cocktail drinks to 0.04 g/100 g. Chinova submitted an amendment to the supplement on October 5, 2023, providing additional information regarding the intended use and dietary exposure.

We previously evaluated GRN 000997 and responded in a letter dated February 28, 2022, that we had no questions at that time regarding Chinova's conclusion that chitosan is GRAS for use as an antimicrobial at levels ranging from 0.015 g to 0.15 g/100 g in baked goods; alcoholic cocktail drinks; non-alcoholic beverages and beverage bases; cheese; ready-to-drink tea; relish; confections and frostings; imitation cheese; fats and oils; gelatins, flans, custards and egg-based desserts[1]; energy, protein, or meal-replacement bars; gravies and white sauces; jams, jellies, preserves, and marmalades; yogurt; fruit-based desserts; meat alternatives and egg substitutes; vegetable purees; sugar substitutes; and sweet sauces, toppings, and syrups.

In this supplement, Chinova states that there is no change in the identity, manufacturing process, specifications, batch analyses, and stability for chitosan. The only change is to expand the uses of chitosan to include use in beer at a maximum level of 0.01 g/100 g, cider, seltzer, and wine at a maximum level of 0.04 g/100 g and to increase the use level in alcoholic cocktail drinks from 0.02 g/100 g to 0.04 g/100 g. Chinova informs us that these uses of chitosan are GRAS through scientific procedures.

Our use of the term "chitosan" in this letter is not our recommendation of that term as an appropriate common or usual name for declaring the substance in accordance with FDA's labeling requirements. Under 21 CFR 101.4, each ingredient must be declared by

[1] FDA notes a correction to our response from February 28, 2023. The use level of chitosan in flans, custards, and egg-based desserts should be 0.1 g/100 g.

its common or usual name. In addition, 21 CFR 102.5 outlines general principles to use when establishing common or usual names for nonstandardized foods. Issues associated with labeling and the common or usual name of a food ingredient 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 regarding the appropriate common or usual names for "chitosan."

In GRN 000997, Chinova noted that the intended use of chitosan as an antimicrobial is not additive to its use as a flavoring agent. Using data from the 2017-2018 National Health and Examination Survey (NHANES), Chinova estimated the mean and 90th percentile eaters-only dietary exposure to chitosan to be 0.11 g and 0.21 g/person (p)/day, respectively, for the U.S. population aged 2 years and older. Chinova also stated that the intended uses in GRN 000997 would be substitutional for the use as a flavoring agent and therefore, there would be no increase in the cumulative dietary exposure to chitosan.

In this supplement, Chinova provides the estimated dietary exposure from the expanded uses of chitosan and the uses in the original GRN 000997 for different age groups based on food consumption data from the 2017-2018 NHANES. Chinova estimates the mean and 90th percentile eaters-only dietary exposure to chitosan to be 0.12 g/p/d and 0.25 g/p/day, respectively, for the U.S. population aged 2 years and older. The highest mean and 90th percentile dietary exposures for chitosan are for adult males aged 20 years and older at 0.15 g/p/d and 0.3 g/p/d, respectively. Chinova notes that the proposed uses for chitosan in this supplement would be substitutional for the use as a flavoring agent and therefore, there would be no increase in the cumulative dietary exposure to chitosan.

Chinova states that it relies on safety information discussed in GRN 000997 to support the intended uses in this supplement. Chinova concludes that there would be no increase in the cumulative dietary exposure to chitosan, thus the additional intended uses do not pose a safety concern. Chinova also states that based on an updated literature search through February 2023, there are no new publications that would contradict their GRAS conclusion.

Based on the available data and information, Chinova concludes that chitosan is GRAS under the intended conditions of use.

Section 301(ll) of the Federal Food, Drug, and Cosmetic Act (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 Chinova's notice concluding that chitosan 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 chitosan. Accordingly, our response should not be construed to be a statement that foods containing chitosan,

if introduced or delivered for introduction into interstate commerce, would not violate section 301(ll).

Conclusions

Based on the information that Chinova provided, as well as other information available to FDA, we have no questions at this time regarding Chinova's conclusion that chitosan is GRAS under its intended conditions of use. This letter is not an affirmation that chitosan 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 000997 is accessible to the public at www.fda.gov/grasnoticeinventory.

Sincerely,

Susan J. Carlson -S

Digitally signed by Susan J. Carlson -S
Date: 2023.12.18 16:41:24 -05'00'

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