

Increased yield of Beta 1,3-1,6 glucans, produce of AFO-202 strain of *Aureobasidium Pullulans*, using improvised techniques by Japanese scientists.
Joint research between GN Corporation and Sophy Inc, inspired by beneficial reconstitution of gut microbiome.

Nichi Beta 1,3-1,6 Glucans: Unique & advantageous features

1. 製造 Production

The extraction-purification method

Several B-glucans are "extracted" from a natural source

Extraction → Purification

The screening-fermentation method

Nichi-B-Glucans are "produced" by unique yeast strains

Screening → fermentation

4. 純度 Purity

2. 資料 Source

Yeast (小棒)

Mushroom

AFO-202

N-163

3. 構造 Structure

All B-1,3-1,6 glucans have some chemical formula, but structurally Nichi-Glucans have unique structural formula

5. 水溶性 Water solubility & No allergens

6. 投与量の標準化 Dosage standardization & Drug like validation are possible

7. ニチグルカンβグルカンフードサプリメントは常温保存が可能です。
 Nichi glucan range of Beta glucan food supplements can be preserved at room temperature

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An illustrative explanation on the unique features of Nichi Glucan range of Beta glucan food supplements, which are unique compared to Beta glucans from other sources.

June 30, Chennai; Japanese scientists, research collaborators to Nichi-in Centre for Regenerative Medicine (NCRM) have reported an increased yield of Beta 1,3-1,6 glucans in the produce, as an exo-polysaccharide by the yeast *Aureobasidium Pullulans* employing improvised culture methodology. They could scale-up the method in industrial scale bioreactors in GMP certified facility in Kochi prefecture of Japan that is expected to have an enhanced health benefits to consumers. This research was undertaken jointly by GN Corporation, Japan and Sophy Inc, the manufacturer of the novel Beta glucans since 1996, when it was approved as a food supplement by the ministry of health, Govt. of Japan.

The Beta glucans produced by Sophy Inc are exported to the rest of the world by GN Corporation on an exclusive basis, which have the following unique features, making them stand apart:

- Source:** *Aureobasidium Pullulans* yeast is the source that produces the Nichi Beta glucans as an exo-polysaccharide, unlike majority of the Beta glucans that are

extracted and refined from mushrooms, barley etc.,

2. **Production method:** Fermentation and culture method is used for Nichi Beta glucans' production, whereas other beta glucans are extracted and purified from their respective sources.
3. **Structure:** Despite same chemical formula of Beta 1,3-1,6 glucans, Nichi Beta glucans have a unique structure.
4. **Purity:** These Beta glucans are not conjugated with other moieties ensuring a higher purity and biofunctionality.
5. **Water solubility:** Nichi beta glucans being water soluble, are easy to digest and mix with other food materials either as ingredients or for consumption mixed with food items or beverages.
6. **Dosage standardization:** The quantification of Beta glucan itself being a patented method of the manufacturers, the dosage per sachet or any other form when packed in capsule could be standardized which makes it easy to undertake clinical studies and in future, it is easy to make them undergo a drug like validation.
7. **Room temperature preservation:** The Nichi beta glucans with pre-biotic effects and some benefits matching probiotics don't require a cold-chain preservation and so they are easy to be handled when exported, especially to countries with tropical climates.

The Nichi Beta glucans, with all above unique advantages until recently had 42mg/gram of the active ingredient β -1,3-1,6 Glucan in granule form, which, with the present improvised method of production has increased to 50mg or above per gram in granule form and a patent has been applied on this novel production method jointly by GN Corporation and Sophy Inc.,

According to a collaborating researcher, Dr Nobunao Ikewaki, Kyushu Health and Welfare University, Nobeoka, Miyazaki, Japan, the results of pre-clinical (1) and clinical studies of the AFO-202 strain produce in beneficially reconstituting the gut microbiome (2) was a major motivation for them to continue advanced research which has yielded these accomplishments. Principal investigator of the clinical studies undertaken using these Beta-glucans, Dr Raghavan, Jaicare Hospital, Madurai commented that constipation in some patients he saw was a clue to explore the association of gut dysbiosis as a basic cause for several illnesses. The earlier data that 22% of Japanese customers who were consuming the Nichi beta glucans produced by Sophy Inc. for bowel regulation, convinced him to undertake clinical studies of relevance. He added that, with the present improvisation, a better beneficial

modification of gut microbiome, we can expect. Gut microbiome gaining significance in enduring of health, our Beta glucans long loved in the Japanese market as a good food supplement, with this improvisation, we think will be considered a better one by our customers, opined Mr Yasushi Onaka, the President of Sophy Inc., Japan. GN Corporation through their global network of scientists and clinicians are continuing to undertake more research to bring out the health benefits of this allergen-free orally consumable food supplement, made in Japan for the past 25 years.

References:

1. <https://dx.doi.org/10.1136/bmjgast-2022-000985>
2. <https://pubmed.ncbi.nlm.nih.gov/36093695/>