



# New Oral Immunotherapy Platform for the Treatment of Food Allergy and Other Autoimmune Diseases

TECHNOLOGY NUMBER: 2021-100



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## Category

Therapeutics and Vaccines  
Life Sciences

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## OVERVIEW

New oral inulin-gel formulation for food allergy immunotherapy

- Enhanced safety and potential broader application compared to existing OITs
- Useful for treating peanut allergies, potential adaptation for other food allergens

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## MODALITY

Gel format mixed with allergen extract; for oral administration

## INDICATION

Peanut allergy (expandable to other food allergies and selected autoimmune diseases)

## PUBLICATIONS

["Inulin-gel-based oral immunotherapy remodels the small intestinal microbiome and suppresses food allergy"](#)

## INTELLECTUAL PROPERTY

Patent pending

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## BACKGROUND

Food allergies have become more prevalent and severe in the U.S. and other Western countries. Traditionally, such allergies have been challenging to manage due to the unpredictable nature of allergic reactions, which can be severe even with minute allergen exposure. Existing methods, like Oral Immunotherapy (OIT) using FDA-approved products such as Palforzia™ for peanut allergy, do help but come with limitations. Palforzia, a defatted peanut flour powder, is taken daily mixed in food; however, there is a significant risk of anaphylaxis, and only around 70% of patients respond favorably. Additionally, patients must continue to avoid peanuts in their diet. Other approaches, like epicutaneous immunotherapy, have shown limited efficacy. Consequently, there's a pressing need for improved, safer, long-term therapies for peanut and other food allergies.

## INNOVATION

Researchers have created an oral inulin-gel formulation that presents promising advancements in food allergy immunotherapy. Inulin, a dietary natural fiber, is leveraged to create a new form of oral gel containing peanut extract. Remarkably, this inulin-gel formulation, when administered to mice, provided significant protection against peanut allergen challenges, effectively preventing signs of anaphylactic shock, bodyweight loss, and temperature drop. Preliminary data indicate that this inulin-gel modulates the gut microbiome to promote regulatory T cells, which are vital for immune tolerance. This formulation could be adapted to other food allergens and possibly extended to treating autoimmune diseases like rheumatoid arthritis, multiple sclerosis, and type-1 diabetes.