Reduce the Allergenicity of Egg White Proteins by Fermentation
Sen Li, Michael G. Ganzle, and Jianping Wu

Summary
We successfully grown lactic acid bacteria in egg white, including some strains from sourdough or yogurt. After 96h of fermentation, egg white that was fermented with L. delbrueckii subsp. delbrueckii retained around 50% of its original allergenicity.

Introduction
As the determination methods and/or definitions differ, the estimate of egg allergy prevalence ranges from 1.6% to 3.2%. Egg allergy is the second most common food allergy in infants and young children. The clinical symptoms of egg allergy involve: atopic dermatitis, asthma, vomiting, and diarrhea.

The following flow chart shows the mechanism of immune reactions that happen to food allergy patients.

First Exposure to Allergens
- Generation of IgE,
- No Obvious Symptom

Subsequent Exposure to the Same Allergen
- Memory IgE Specifically Bind to Allergen
- Mild to Severe Symptoms

Egg white ferments with L. delbrueckii subsp. delbrueckii retained less binding capacity to IgE from egg allergy patients after 48h fermentation.

Results
The production of lactic acid and the decrease in pH of substrate is one of the most important indicators for detecting the growth of lactobacilli.

ELISA Results

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<th>Time/h</th>
<th>Plasma 12388</th>
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<tbody>
<tr>
<td>0</td>
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</tr>
<tr>
<td>24</td>
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<tr>
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<td>0.25</td>
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<td>72</td>
<td>0.25</td>
</tr>
<tr>
<td>96</td>
<td>0.25</td>
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</tbody>
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Benefits
Provide a new approach to produce innovative egg products.
Discover a new method to reduce the allergenicity of egg white and enable the production of hypo-allergenic food with egg white as an additive.

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Contact Information
Sen Li
Phone: (780) 964-2926
E-mail: sen5@ualberta.ca

Dr. Jianping Wu
Phone: (780) 492-6885
E-mail: Jianping.Wu@ales.ualberta.ca