



Reduction of Egg Allergy Through Fermentation

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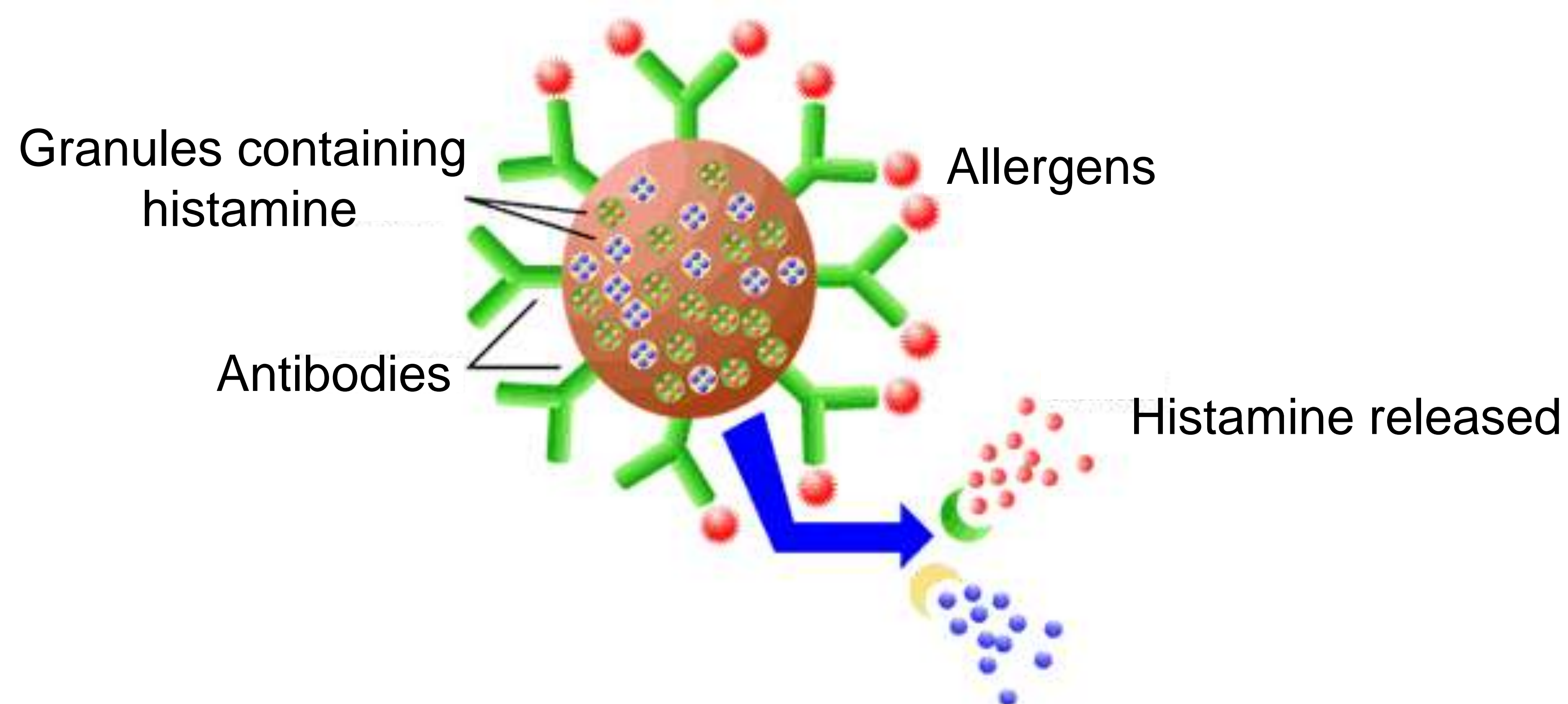
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Did you know...?

- Eggs are one of the most common causes of food allergies
- Egg whites contain more allergens than egg yolk
- They are used in a variety of processed foods such as cake, cookies, bread, sauces, mayonnaise and pasta
- Approximately 7% of children under the age of three are affected by egg allergies (1)
- Most children will grow out of these allergies but some individuals still remain severely allergic

How do allergic reactions work?

- Hypersensitivity reaction in the immune system
- Our immune system responds to this by producing antibodies
- These antibodies trigger the release of a chemical: histamine
- Histamine causes the allergic reaction that we all know

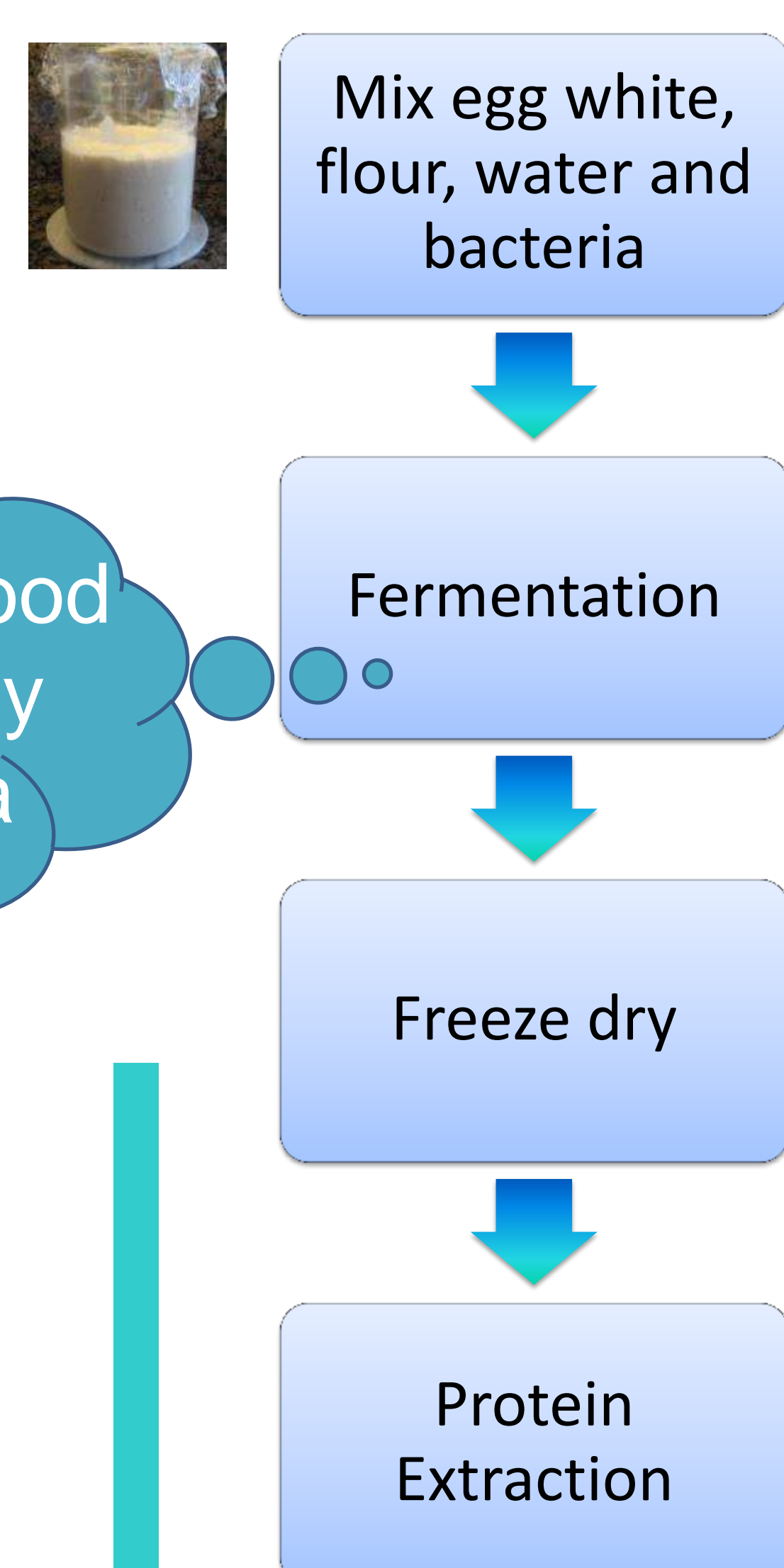


- Common symptoms include: asthma, eczema, hives, sneezing, anaphylactic shock

Conversion of food components by good bacteria

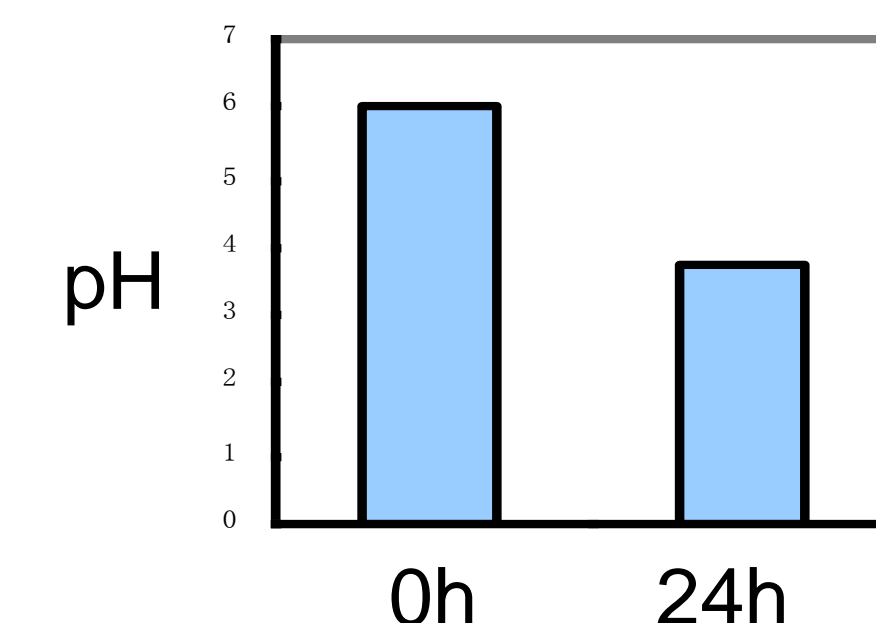
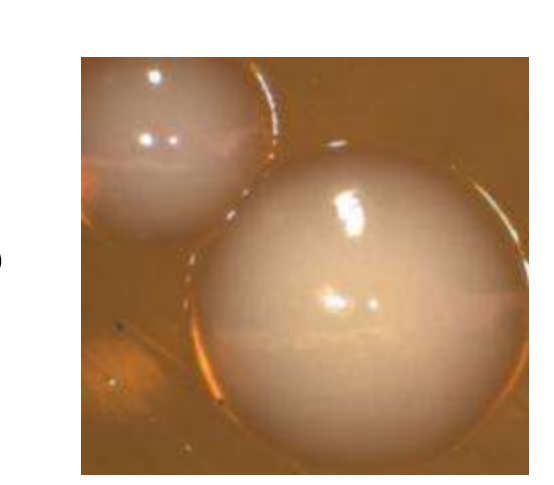
The Experiment!

Goal: Develop a fermented product containing egg with reduced allergenicity.
Sourdough: a mixture of flour and water containing a lactobacillus culture.

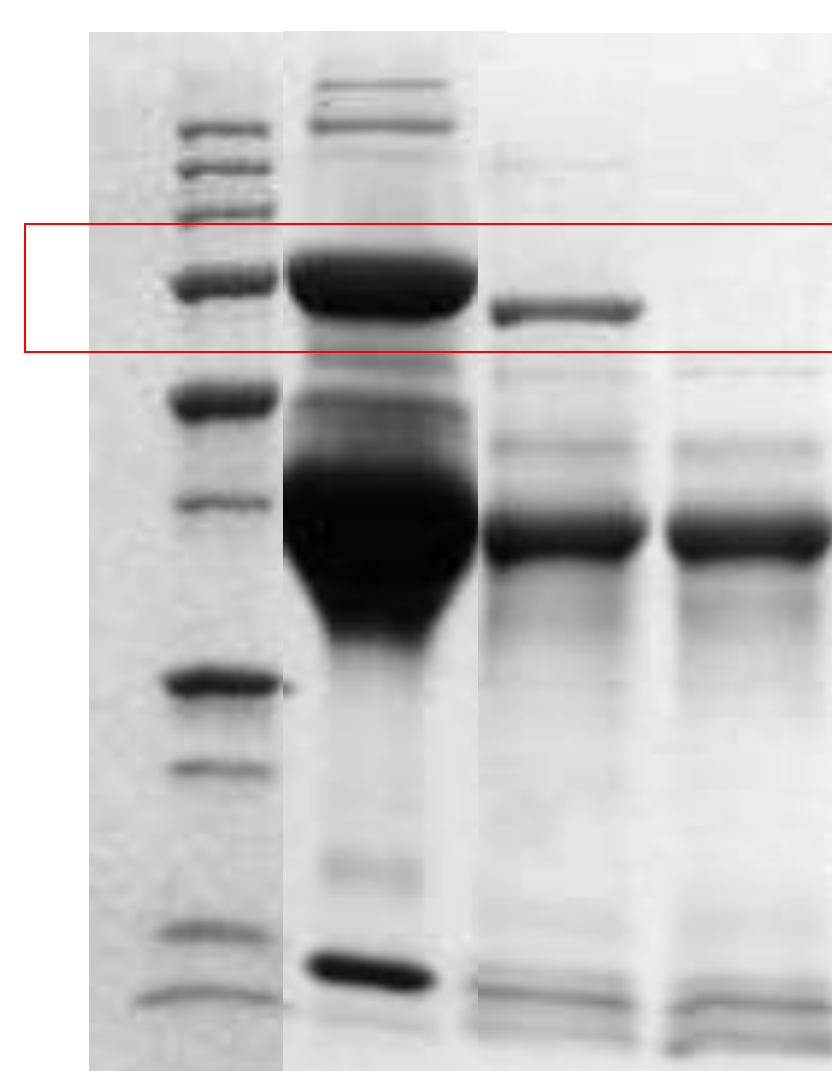


Did it work?

✓ Bacterial Growth?



✓ Changes in egg proteins?

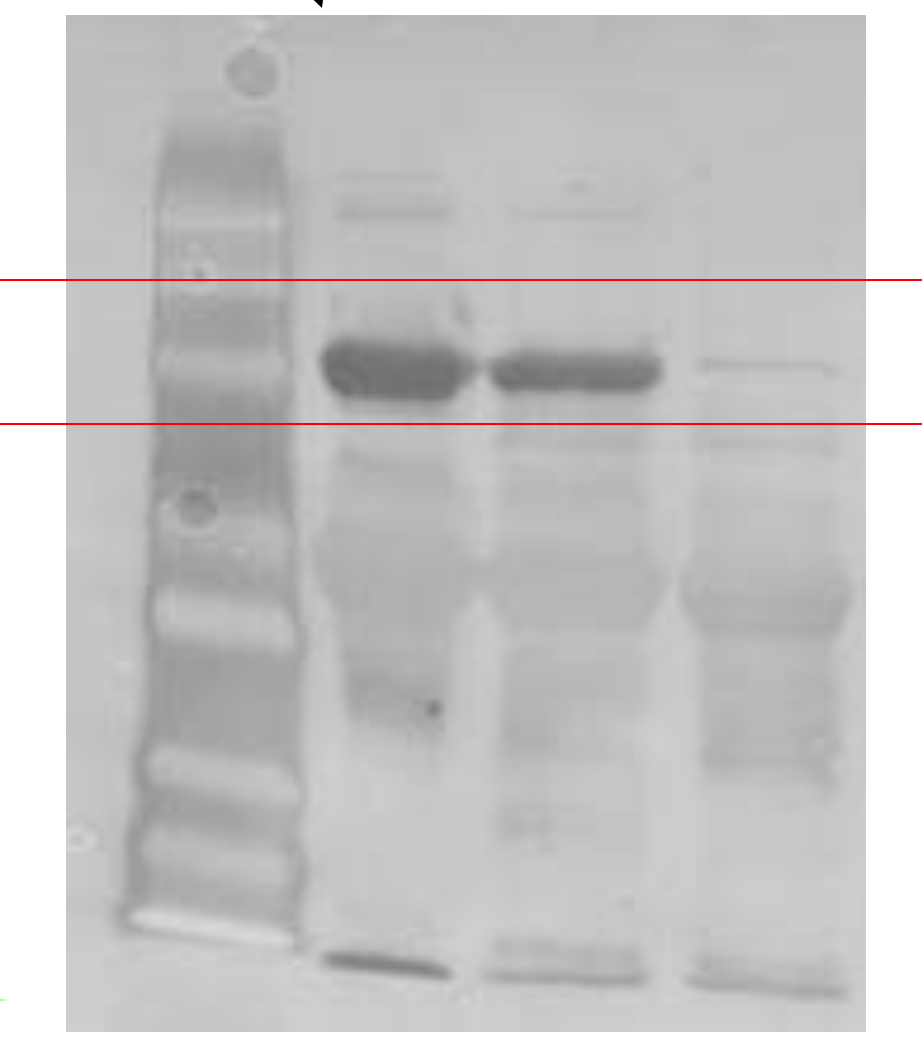


Something disappeared!

Does this affect the allergenicity of egg white?

✓ Reduced allergenicity?

Could potentially be applied in the food industry!



S Egg 0h 24h

Future work: Determine allergenicity of baked sourdough bread.

Ultimate Goal: Develop a novel technique for reduction of egg white allergens to produce a hypoallergenic egg product.