

# STABILITY OF MILK AND GLIADIN ALLERGENS ON SWABS DURING SEVEN DAYS AT DIFFERENT STORAGE TEMPERATURES

**KEY FINDINGS:** Milk and gliadin can be still be detected on R-Biopharm polyurethane based swabs by ELISA after 7 days in the fridge with the concentrations tested

**RECOMMENDATIONS:** Test three swabs per area to decrease the risk of false negative + Train on how to properly use swabs

## Background:

There is a demand from laboratories and food industries to know if allergens on swabs could be stored and tested later than the recommended 24h.

## Objective:

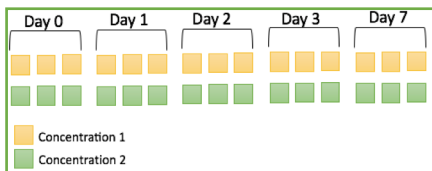
Measure the stability of milk and gliadin allergens on swabs during seven days in good and poor storage conditions

## Method:

### 1. INAF-Laval University

- Stainless surface contaminated with: Almond milk, chocolate powder, strawberries, wheat flour, corn oil and sugar for milk testing and Milk, butter, gluten-free oat flour, ham slice, turkey slice, corn oil and potato peeling for gliadin testing
- Poor cleaning (water + kimwipe)
- Two concentrations of milk and gliadin were put on stainless surface and left to dry
- R-Biopharm polyurethane swabs with PBS (triplicates) were tested for 7 days, and stored without extraction buffer at 4°C and 37°C for milk and 37°C only for gliadin
- Extraction was made in the swab tube following r-Biopharm extraction procedure and detection was made with r-Biopharm ELISA kits and Thunderbolt® (Gold Standard Diagnostics)

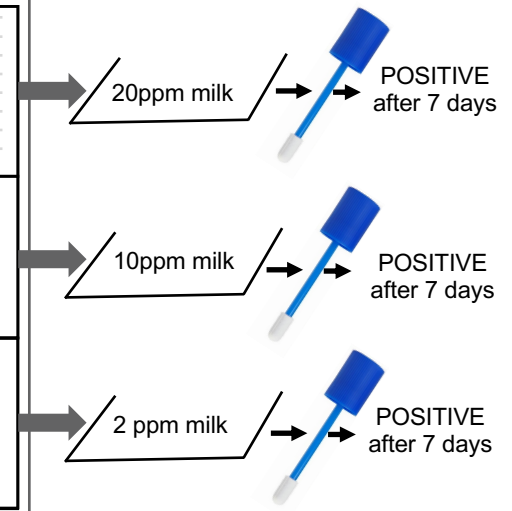
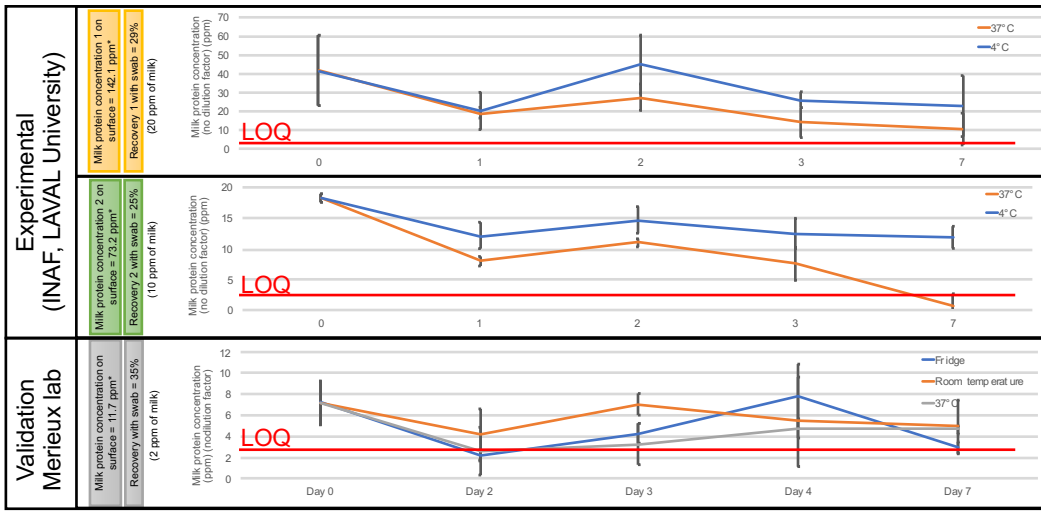
Number of swabs required per allergen and per storage condition:



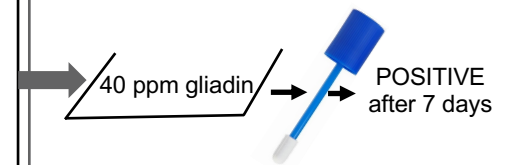
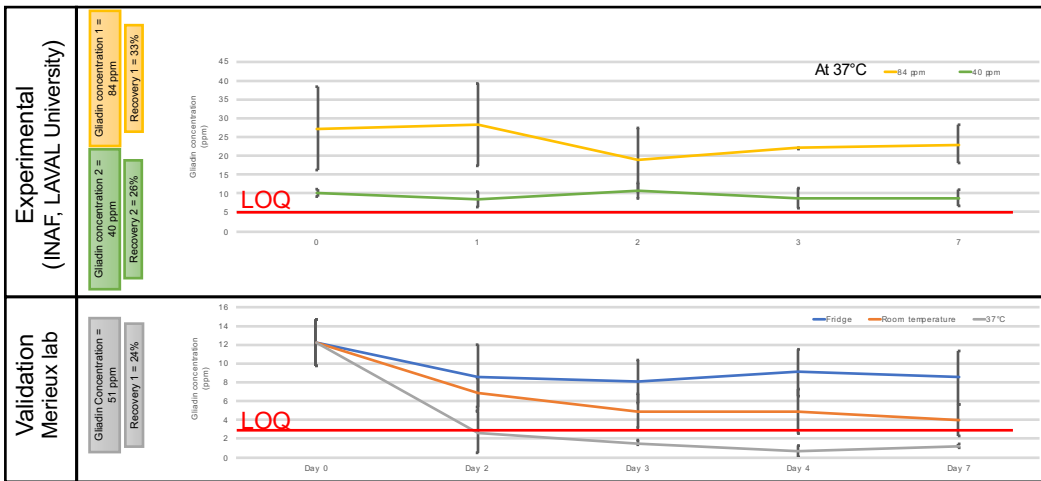
### 2. Validation (Merieux NutriSciences lab)

- Same protocol but with clean stainless surface
- Milk and gliadin solutions (2 concentrations) were put on stainless surface and left to dry
- Extraction protocols remained the same. No use of Thunderbolt®.

## Evolution of MILK protein concentration on swabs during 7 days:



## Evolution of GLIADIN concentration on swabs during 7 days:



Confirmed in the validation step but the authors would recommend to store in the fridge.

## Conclusions:

Milk and gliadin allergens can be still be detected on R-Biopharm polyurethane swabs by ELISA after 7 days in the fridge with the concentrations tested.

It is recommended to test three swabs per area to decrease the risk of false negative and to train on how to properly use swabs.

## Acknowledgements:

The authors wish to thank the research team in INAF to allow us to use a stainless surface in their kitchen, Gabe Faubert, Sean Tinkey, Jodi Nickerson and Kurt Johnson for their support and guidance and Attara Hell and Emilie Manny for their help to build this poster

In collaboration with: