

# Allergen residue testing

## Why is it important?

**Casein, skim milk** and **egg** (whites and albumin) are commonly used fining agents during the winemaking process, potentially leaving traces in the finished wine. Screening your wine for the presence of these allergen residues is critical for labeling, if exporting to the European Union (EU) or to Canada through the Liquor Control Board of Ontario (LCBO).

The new regulations related to allergen declarations on wine labels apply from 1<sup>st</sup> of July 2012. **Unfiltered** or **filtered** wines, **non-vintage** wines and wines dated **2012 and beyond** will be required to carry allergen labeling unless they can be demonstrated free of residues.

The EU prefers ELISA (Enzyme-linked immunosorbent assay) based test methods, with a detection limit (LOD) of 0.25 ppm, to be used to prove the absence of these materials.



## How do we detect them?

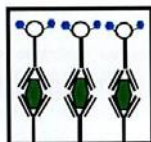
**Egg (Ovomucoid)** is one of the main allergens in egg white and appears to be allergenic in minute quantities. We run a double antibody (sandwich) ELISA using specific anti-ovomucoid antibodies coated onto microwells.

**Milk (Alpha S Casein)** is the major protein in milk and accounts for about 80% of total milk proteins. We run a double antibody (sandwich) ELISA using specific anti-casein antibodies coated onto microwells.

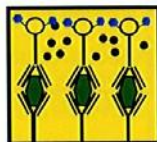
**Step 1**  
Sample is added



**Step 2**  
Antigen-Antibody Complex



**Step 3**  
Coloured End-Point



**Step 1** The sample is added and if residue is present it will bind to the specific antibodies.

**Step 2** Enzyme labeled conjugate is added and binds to the captured residue to form a 'sandwich'.

**Step 3** Substrate is added and forms a blue colour if residue is present. A yellow colour is formed once acid is added to stop the reaction.

**Step 4** Results are then read on a micro-plate reader and concentrations determined from the standard curve.

## How are results reported?

Results < 0.25 ppm are reported as 'Not Detected'. We report Total egg white protein<sup>1</sup> and Total milk protein<sup>2</sup> with an uncertainty of measurement of  $\pm 0.1$ ppm.

<sup>1</sup>1ppm of whole egg powder is equivalent to 0.28ppm of Total egg white protein and  $\sim 0.14$ ppm of Ovalbumin.

<sup>2</sup>1ppm of skim milk powder is equivalent to 0.32ppm of Total milk protein and 0.26ppm of Casein.

Please contact [commercialservices@awri.com.au](mailto:commercialservices@awri.com.au) for further information.

Analysis	Target response time	Volume required	Price per sample (ex.GST)
Total egg white protein residue	48 hours	10 mL	\$110
Total milk protein residue	48 hours	10 mL	\$110
Egg and Milk residue	48 hours	20 mL	\$200

*Don't get caught with egg on your label!*