GOLD STANDARD DIAGNOSTICS

Wine Testing: Monitor the Quality and Safety of Wine with Rapid Methods

Wine analysis is nearly as diversified as wine itself. It is essential to ensure the quality, authenticity and, above all, safety of the product. Bioanalytical test methods are a convenient way to do so, due to their short analysis time, high sensitivity and cost-effectiveness. The comprehensive solutions provided by Gold Standard Diagnostics offer improved testing efficiency while meeting the highest standards.

Rapid Testing Solutions

- Allergens
- Mycotoxins
- Histamine
- Automation

Allergen detection

Fining wine is a centuries-old important step to clarify wine and ensuring its quality and stability. Traditional fining agents are protein-based (proteinaceous) and derived from animal products, usually milk or egg. Because residual traces can pose an allergy risk, the OIV has released the RESOLUTION OIV-OENO 520-2014 “Code of good fining practices for wine to be applied in the use of proteinaceous wine fining agents”. The limit of detection (LOD) has been defined for the allergens Casein, Lysozyme and Ovalbumin at 0.25 mg/L (ppm).

The SENSI*Spec* ELISA Casein, SENSI*Spec* ELISA Lysozyme and SENSI*Spec* ELISA Ovalbumin test kits provide considerably lower **LODs, ensuring the highest safety** when analysing for respective allergens.

But the most striking advantage is that all buffers are free from hazardous substances, such as ß-mercaptoethanol, and the **simplicity of the sample preparation is unmatched**: just add wine to the buffer, mix, and carry out the ELISA process!

Article Number	Product Name	LOD [mg/L]
HU0030027 / HU0030003	SENSI*Spec* ELISA Casein 48 / 96 wells	0.02
HU0030036 / HU0030012	SENSI*Spec* ELISA Lysozyme 48 / 96 wells	0.002
HU0030041 / HU0030017	SENSI*Spec* ELISA Ovalbumin 48 / 96 wells	0.004

As a further advantage for laboratories, we offer the SENSI*Spec* Allergen Spiking Solutions. These can be used to produce positive control samples. They also provide the option for internal process validations and quality assessments at any time.

Article Number	Product Name
HU0030051	SENSI*Spec* Spike Solution Casein
HU0030061	SENSI*Spec* Spike Solution Lysozyme
HU0030066	SENSI*Spec* Spike Solution Ovalbumin

Histamine monitoring

Histamine is a biogenic amine and is a degradation product of the amino acid histidine. Histamine is produced by the malolactic fermentation during the production of wine, champagne, and fruit juice. The histamine content varies widely between types of wine.

Some people suffer from histamine intolerance (HIT), which is not an allergy but rather a metabolic disorder. These people have limited activity of the enzyme diamine oxidase, meaning histamine is only partially metabolised and symptoms like flushing, headache, itching, difficulty in breathing, and diarrhea can occur, for example.

To date, European histamine regulations do not apply to wines and no limit has been defined for this product. Terms like “low-histamine wine” or “histamine-free wine” are not allowed to be used. However, histamine values analysed immediately before or after bottling can be mentioned to consumers to help guide their purchase choice.

With the **SENSI*Spec* ELISA Histamine, very precise values at an unmatched LOD** can be achieved.

Article Number	Product Name	LOD [µg/L]
HU0030200	SENSI*Spec* ELISA Histamine (96 wells)	0.002

Mycotoxin screening

Ochratoxin A is one of the most abundant food-contaminating mycotoxins. It is produced by different mold species of Aspergillus and Penicillium and it infects grapes still on the vine, especially during the ripening period.

While Ochratoxin A is less abundant in moderate climates, there is an increased risk of higher amounts in warmer regions, such as the Mediterranean. However, changing climate conditions have the potential to shift the existing limits.

The European Commission regulation 1881/2006 sets the maximum tolerable concentration of Ochratoxin A in wine, sparkling wine and grape juice to 2 µg/kg (ppb).

Instrumental analytical tests, such as HPLC, are more time-consuming and cost-intensive compared to ELISA tests.

With the **SENSI*Spec* Ochratoxin A Rapid, a cost-effective and fast ELISA-based screening** can be applied in advance. Only samples that have a concentration close to the 2 µg/L limit need then be subjected to an instrumental analysis.

Article Number	Product Name	LOD [µg/L]
HU0030080	SENSI*Spec* Ochratoxin A Rapid (96 tests)	1.0

Another mycotoxin produced by molds appearing on grapes is patulin. In wine, patulin is degraded by yeast during the fermentation process. However, in grape juice and in freshly crushed, non-pasteurized fruit juice (must) considerable patulin levels have previously been observed. In 2006, patulin was detected in wine in Germany even during the fermentation process (Federweißer).

NEW! **The Patulin ELISA Kit** is a bioanalytical assay to detect this mycotoxin in juice and other products available for the very first time. According to the European Commission regulation 1881/2006 the maximum tolerable concentration of Patulin in juices is 50 µg/kg (ppb).

Article Number	Product Name	LOD [µg/L]
500106	Patulin, ELISA, 96-test	7.0
500110	Patulin, 1X6 ELISA 96-test kit	7.0

Automation

We offer precise, compact and cost-efficient instruments supported with outstanding customer service.

- **The BOLT™** is the standard platform for our ELISA-based analytical test kits. This one-plate ELISA processor enables a full automation in a compact and cost-efficient manner. Proper cleaning management of the steel canula between samples eliminates the need for pipette tips thus helping to reduce plastic waste.

  Different allergen kits can be handled in parallel and implemented result protocols ease the analyses.

Specifications	
System Architecture	Open, fully customizable
High Precision Micro-Syringe	Aspirate 1uL with ≤ 3% CV
On-board Reader(s)	Spectrophotometer or Spectrophotometer + Fluorescence Combo Reader
Forced Convection Incubator	Evenly heats to eliminate “Edge Effect“
Linear Shaker	Precise adherence to assay protocols / No-spill design
Small Footprint	Fits on a 60cm deep standard laboratory bench; weight: 27 kg (59.5 lbs)
Sample Capacity	96 sample positions
User Interface	MS Windows Graphical User Interface (Windows 7 or above)
CE Marked	Yes
Article No.	00500

- **GSD Absorbance 96 ELISA reader** is a new category of plate readers with the mission to simplify the workflow in the laboratory. The reader delivers a robust performance and accurate results with a small footprint.

Specifications	
Article No.	EIAREAD002
Size and weight	9.6 x 15.4 x 5.5 cm, 900g
Microplates types	96-well microplates
Wavelength selection	Example combinations (FWHM 10 nm): 450, 492, 562, 620 nm / 405, 450, 540, 630 nm / 492, 562, 605, 650 nm. Other filter combinations in the range of 400–1000 nm

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