

Analytical test kits to ensure gluten-free food

Most comprehensive product range

- R5 antibody based dip stick and ELISAs
- For swabbing and food analysis
- Precise and sensitive assays
- Approved by AOAC/AACCI/ASBC/ICC
- Validated for automation



Dip
Stick

PCR

ELISA

Gluten-free food for gluten intolerant patients

Coeliac disease is triggered by *gluten* (proteins found in wheat, barley and rye) resulting in damage of the small intestine. The only treatment is a lifelong adherence to a gluten-free or reduced-gluten diet. Avoiding gluten in the diet is not easy since cereals are used in the preparation of many foods.

RIDASCREEN® Gliadin is the most used test kit world-

wide to quantify the gluten concentration in food. The R5- antibody used in the test kit detects the prolamins of wheat, rye and barley, with no cross reactivity to soy and oats. **This Mendez ELISA R5 method has been validated in several international collaborative studies and obtained AOAC and AACCI approvals (see also table 1 for further information).**

Codex Alimentarius and the Mendez ELISA R5 method



The Codex Standard 118-1979 (revised 2008) sets limit values for gluten-free food (< 20 mg/kg gluten) and defines the Mendez ELISA R5 method for the determination of gluten.

The Codex Standard 234-1999 “Recommended methods of analysis and sampling” endorses the R5 Mendez ELISA as a Type I method.

The AOECs (Association of European Celiac Societies) is in charge of licensing the “crossed grain” label to help consumers identifying gluten-free food. The AOECs recommends the R5 Sandwich ELISA (Mendez) for natural and heat-processed foods and the R5 competitive ELISA for hydrolyzed food.

R5 test kits – dip stick or ELISA (*competitive/sandwich*)



Depending on food processing, different test kits are recommended for gliadin analysis as can be seen in Table 1. The test kits are useable for matrixes like biscuits, bread, chocolate, cereals and also for

hydrolyzed food like beer, starch syrup, starch, malt extract, sourdough and soy sauce. RIDASCREEN® Gliadin is also suitable for automation.

Table 1: Different processed food and the respective gliadin test kit recommended for analysis

Intended use	All kinds of food samples (e.g. biscuits, bread, chocolate)			Hydrolyzed/fermented food (e.g. beer, starch syrup)
	Surfaces			
Test kit	RIDA®QUICK Gliadin	RIDASCREEN® Gliadin	RIDASCREEN®FAST Gliadin	RIDASCREEN® Gliadin competitive
Method	Dip stick (qualitative)	Sandwich ELISA (quantitative)	Sandwich ELISA (quantitative)	Competitive ELISA (quantitative)
Antibody used	R5-mAb	R5-mAb	R5-mAb	R5-mAb
Calibrator material	No calibrator	Calibrated to purified gliadin material of the WG PAT		Prolamin hydrolysate (mixture of wheat, rye and barley)
Extraction	Ethanol (60 %) or Cocktail (patented)	Cocktail (patented) (RIDA® Extraction Solution only after validation)		Ethanol (60 %)
Detection	Intact prolamins and large fragments with more than one epitope			Small peptide fragments (and intact prolamins)
Detection limit	pos. result > 2.5 mg/kg	1.5 mg/kg gliadin	2 mg/kg gliadin	1.4 mg/kg gliadin
Limit of quantification	–	2.5 mg/kg gliadin	5 mg/kg gliadin	5 mg/kg gliadin
Incubation time	5 min.	90 min.	30 min.	40 min.
Validation	AOAC-OMA in process AACCI in process	AOAC-OMA 2012.01 AOAC-RI 120601 AACCI 38.50.01	Internal	AACCI 38.55.01 AOAC-OMA 2015.05 New

Direct swabs for hygiene control

A Hazard Analysis of Critical Control Points (HACCP) is necessary to ensure gluten-free products. The dip stick RIDA®QUICK Gliadin is an ideal tool for carrying out surface swabs for hygiene control within

production sites or the laboratory. Low and high gluten concentrations are detected (no hook-effect, no overdose effect) RIDA®QUICK Gliadin is user friendly and currently the only R5 dip stick available worldwide.



Figure 1: RIDA®QUICK Gliadin dip stick can be used directly as a swab test

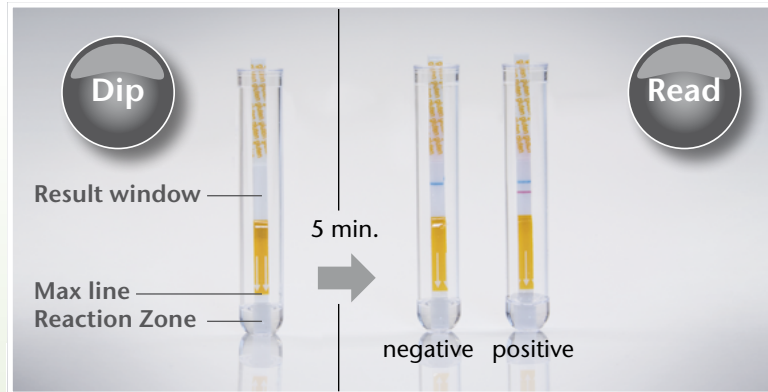
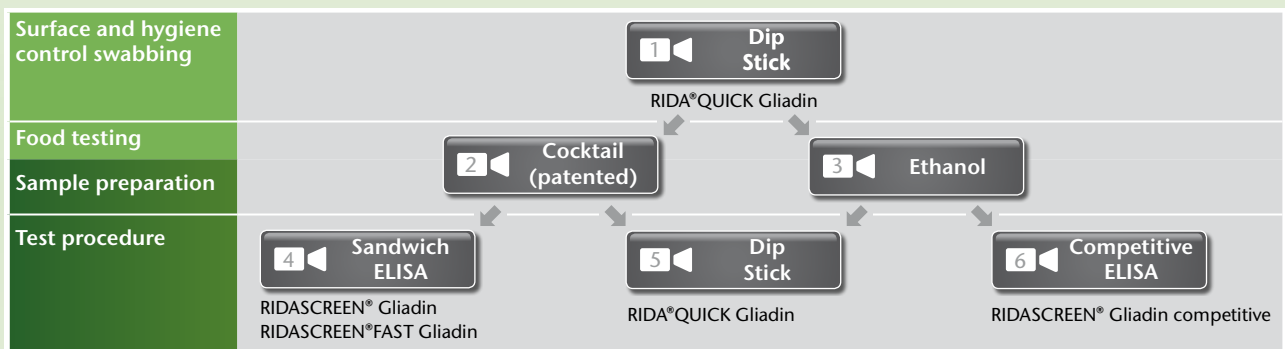


Figure 2: The RIDA®QUICK Gliadin strip is then immersed in the buffer solution and is read after 5 min.

Training videos on Gluten Analysis

This interactive webbased brochure allows you to watch our training videos if the computer is connected to the internet. Simply click on the small camera icons

below to watch and learn all about the different sample preparations and the practical test procedures. Each video takes approximately 5 minutes.



Product testing using ELISA and PCR

Gluten-free products are constantly surveyed for the presence of gluten by manufacturers or by food inspectors.

SureFood® Gluten can be used as a confirmatory method for wheat contamination. The positive result for a soy cheese sample obtained by the R5 Mendez ELISA was confirmed by real time PCR (see Table 2).

Table 2: Analysis of soy cheese contaminated with wheat

Food (declaration)	RIDASCREEN® Gliadin ELISA [Gliadin mg/kg]	SureFood® PCR Gluten	PCR Wheat
Soy cheese 1 (gluten-free)	49.9	positive	positive
Soy cheese 2 (gluten-free)	39.6	positive	positive



Product	Description	No. of Tests/Amount	Art. No.
Gliadin/Gluten			
ELISA Microtiter Plates			
<u>RIDASCREEN® Gliadin</u> AOAC-OMA 2012.01 AOAC-RI 120601 AACCI 38-50.01 Codex Method (Type I)	Official R5 Mendez method: Sandwich ELISA to quantify prolamines from wheat, rye and barley in e.g. food declared as gluten-free; sample extraction with R7006 or R7016 (not contained in the kit); the kit is suitable for automation; Detection limit: 1.5 mg/kg (ppm) gliadin or 3.0 mg/kg (ppm) gluten	96 determinations Incubation time: 1 hr 30 min	R7001
<u>RIDASCREEN®FAST Gliadin</u>	R5 sandwich ELISA Detection limit: 2.0 mg/kg (ppm) gliadin or 4.0 mg/kg (ppm) gluten	48 determination Incubation time: 30 min	R7002
<u>RIDASCREEN® Gliadin competitive</u> (2nd generation) AACCI 38-55.01 AOAC-OMA 2015.05	R5 competitive ELISA; sample preparation with an ethanolic solution; the standard material is a hydrolyzate (mixture of wheat, rye and barley); Detection limit: 1.36 mg/kg (ppm) gliadin or 2.7 mg/kg (ppm) gluten	96 determinations Incubation time: 40 min	R7021
ELISA – Accessories			
<u>Cocktail (patented)</u>	Developed by Prof. Mendez; officially recommended extraction buffer for all processed e.g. heat treated food samples in conjunction with R7001, R7002, R7003, R7004	105 ml	R7006
<u>Cocktail (patented)</u>	Corresponding to R7006 but larger bottle size	1000 ml	R7016
<u>RIDA® Extraction Solution (colorless)</u>	Alternative to the Cocktail (patented) (use only after extraction comparison with Cocktail): The extraction is faster (35 min compared to 1 h 50 min with the cocktail); it is used in conjunction with R7001, R7002, R7003, R7004	105 ml	R7098
<u>Set of 3 processed Gliadin Assay Controls</u>	Three assay controls: 3 positive homogenized processed snack samples; produced by Trilogy® Analytical Laboratories	3 x 1.5 g	R7012
<u>Set of 3 Gliadin Assay Controls</u>	Three assay controls: 1 negative, 2 positive, homogenized flour samples; produced by Trilogy® Analytical Laboratories	3 x 1.5 g	R7010
Lateral Flow Test Strips (immunochromatographic tests)			
<u>RIDA®QUICK Gliadin</u> AOAC in preparation	The immunochromatographic test is based on the R5 antibody and detects prolamines from wheat, rye and barley; the test strips can be used directly for swabs on surfaces or for analysis of e.g. gluten-free raw materials or processed food extracted with Cocktail (patented) Detection limit: 1 - 2 µg gliadin/100 cm ² on surfaces Detection limit: 2.5 mg/kg (ppm) gliadin in food	25 test strips in reclosable tube, 25 plastic pipettes, sample diluent (ready-to-use), 30 vials Incubation time: 5 min	R7003
<u>RIDA®QUICK Gliadin (single packaged)</u>	Corresponding to R7003, test strips are single packaged and no plastic pipettes are included	25 test strips single packaged, sample diluent (ready-to-use), 30 vials Incubation time: 5 min	R7004
<u>RIDA®QUICK Gliadin (ready to swab)</u>	Corresponding to R7003, test strips are single packaged, prefilled vials with ready-to-use sample buffer are included	25 test strips single packaged, 25 prefilled vials with ready-to-use buffer	R7005
DNA preparation			
<u>SureFood® PREP Advanced</u>	For highly processed matrices (food and feed)	50 preparations	S1053
Real-time PCR			
<u>SureFood® ALLERGEN ID Gluten</u>	Detection of gluten containing cereals (wheat, spelt, barley, oats, kamut, rye) Detection limit: ≤ 0.4 mg/kg (ppm); using QUANTARD Allergen 40	100 reactions	S3106
<u>SureFood® ALLERGEN QUANT Gluten</u>	Detection of gluten containing cereals (wheat, spelt, barley, oats, kamut, rye) Detection limit: ≤ 0.4 mg/kg (ppm) Quantification limit: 1 mg/kg (ppm); using QUANTARD Allergen 40	100 reactions	S3206
Laboratory reference material for quantification			
<u>SureFood® QUANTARD Allergen 40</u>	Laboratory reference material for quantitative real-time PCR. Corn flour contains 12 potential allergens in concentrations of 40 mg/kg (ppm)	2 g	S3301