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*Season's Greetings*

and all the best  
for 2011 from R-Biopharm.

# Our products



## Enzytec™ Generic Oxalic acid (E2100)



The analysis of oxalic acid in food, for example in beer and honey, is carried out by classical enzymatic analysis. Up until recently, R-Biopharm distributed the well-known oxalic acid test from Roche Diagnostics however the kit was discontinued by the manufacturer leaving a gap in the range. Fortunately, R-Biopharm have managed to source an alternative in the form of the new Enzytec™ Generic Oxalic acid test (Art. No. E2100), which is now available.

In this new test, oxalate is oxidized to carbon dioxide and hydrogen peroxide by oxalate oxidase. The hydrogen peroxide reacts with 3-methyl-2-benzo-thiazolinone-hydrazone (MBTH) and 3-(dimethylamino)benzoic acid (DMAB) in the presence of peroxidase, to yield an indamines dye which has an absorbance maximum at 590 nm. The intensity of the color produced is directly proportional to the concentration of oxalate in the sample:



The practical test procedure is similar to all other Enzymatic kits:

Pipette into cuvettes:	Reagent Blank (RB)	Standard	Sample
Reagent 1 (buffer)	2000 µl	2000 µl	2000 µl
Distilled water	100 µl	-	-
Standard (oxalic acid 45 mg/l)	-	100 µl	-
Sample	-	-	100 µl
Mix carefully, after approx. 5 minutes at 37 °C read the absorbance A1, then add:			
Reagent 2 (enzyme)	200 µl	200 µl	200 µl
Mix carefully, incubate at 37 °C until the end of the reaction (approx. 15 min) and read the absorbance A2.			

The absorbances measured for the samples cannot be converted into concentrations with the usual Lambert-Beer formula, because the extinction coefficient of the color reagent is not known. For this reason, the test is

calibrated via a standard which has exactly 45 mg/l oxalic acid. The measured optical density of a sample is compared to the standard and allows calculation of the concentration:

$$C_{\text{Sample}} [\text{mg/l}] = (\Delta A_{\text{Sample}} / \Delta A_{\text{Standard}}) \times 45$$

This calculation is equivalent to a linear calibration curve, as displayed here below with the example from a typical run:

Standards	mg/l	OD (Δ A)
Zero	0.0	0.000
Standard Oxalate (vial 3)	45.0	0.669
Reagent Blank	0,016 (A)	

Controls	Target value (mg/l)	Result (mg/l)	Recovery
Oxalate control 1	45	44.6	99 %
Oxalate control 2	90	91.5	102 %

The result from control 2 shows that the test is linear up to 90 mg/l. The sample reached a Δ A around 1.350, which is twice as much as

the 45 mg/l standard (Δ A = 0.669). The test is therefore linear up to this high absorbance range, and so sample results can be extrapolated.

lated up to 90 mg/l. Accordingly, the measuring range goes from 0 to 90 mg/l.

The lowest detection limit varies in each lab, considering the absorbance difference that can be measured in a reproducible way (depending on the quality of the instruments and on the operator):

- for  $\Delta A = 0.050$ , the limit is around 3.40 mg/l
- for  $\Delta A = 0.020$ , the limit is around 1.35 mg/l

These limits can be decreased to lower levels by increasing the sample volume in the test.

This test is therefore suitable for measuring oxalate concentrations in many types of food samples, even to very low concentrations.



## bioavid Lateral Flow product line

### Allergen Rapid Tests in the dip-stick format are now available with 10 tests per kit

Hidden allergens cause the highest risk for allergic consumers and they mostly come from cross-contaminations in food-producing plants. Reasons for cross-contamination can be e.g. cross-contact before and after receipt, poor storage, contaminated shared equipment, airborne dust, improper incorporation of re-work, incomplete or incorrect packaging and other reasons.

Of the different methods for allergen detection, Lateral Flow Tests (dip-stick) are the only true on site tests, and thus have the broadest potential application sites.

R-Biopharm is offering exclusively the bioavid

Lateral Flow tests, comprising easy to use and rapid tests for the major food allergens, like total milk protein, whole egg, tree nuts, amongst others. Until now the tests are available also with 10 determinations. Furthermore, individual Combi Kits with 50 tests are available. In each box, 10 packets of different allergens can be combined on request.

A laboratory service can be requested separately. For difficult matrices applications can be developed or validations can be performed.

Please inquire individually.



## VitaFast® product line

R-Biopharm is proud to announce that a further two of the VitaFast® tests, Vitamin B12 and Biotin, have obtained the Performance

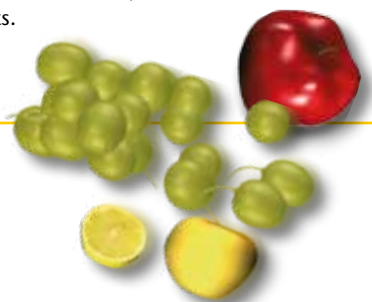
Method Status from AOAC-RI (Association of Official Analytical Chemists – International Research Institute).

The following tests all now have the AOAC-RI status:

P1001	VitaFast® Folsäure/Folic Acid	Certificate No. 100903
P1002	VitaFast® Vitamin B12	Certificate No. 101002
P1003	VitaFast® Biotin	Certificate No. 101001
P1005	VitaFast® Pantothensäure/Pantothenic Acid	Certificate No. 100904
P1007	VitaFast® Vitamin B2 (Riboflavin)	Certificate No. 100902

These tests have been validated and certified as a Performance Tested Method by the AOAC Research Institute as an effective

method for the detection of the respective vitamins in food and pharmaceutical products.



## RIDA®COUNT product line

### Improved RIDA®COUNT Yeast & Mold Rapid (R1008) now available!

The improved RIDA®COUNT Yeast & Mold Rapid (R1008) test is now available! The ready-to-use test cards, coated with dry nutrient medium (modified yeast-glucose-chloramphenicol medium), are designed for the detection of yeasts and molds within just **48 hours**.

The metabolic enzymes of yeasts and molds convert the chromogenic substance contained in the medium during their growth, and the colonies that emerge take on a bordeaux-red color.

The medium in the previous version of the product made use of chromogenic substances that were reduced by the enzymes of the respiratory chain of yeasts and molds to form blue dyes, resulting in a blue coloration of the emerging colonies.

Since many untreated food products contain enzymes that are similar to those contained

in the molds (cereals, vegetables, fruit, meat, etc.), in frequent instances the investigation of these matrices yielded a blue background coloration on the test cards of the RIDA®COUNT Yeast & Mold Rapid. Depending on the intensity of the background color, in many cases this made it difficult – or even impossible – to detect yeasts and molds in low sample dilutions.

This problem has now been largely solved thanks to the improved chromogenic system of detection of the new RIDA®COUNT Yeast & Mold Rapid test (R1008). The bordeaux-red-colored colonies are now distinctly set off against a pink-colored background, even in foods with a high content of metabolic enzymes (e.g. liver, meat, fish, etc.).



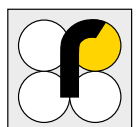
**Illustration:** Untreated barley grains (ground, diluted 1:10 with 0.9 % NaCl solution) applied in 1-ml portions to the RIDA®COUNT Yeast & Mold Rapid test card in the former format (left) and to the test card with the new, improved detection system (right).



The illustration shows the difference between the old (left) and new (right) versions of the product.

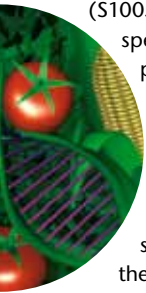
Both test cards were incubated at 25°C for 48 hours after application of the samples. The activity of the enzymes contained in the barley grains converts the chromogenic agent that was an ingredient of the former

version of the product, and the test card turns blue in color. Colonies of yeasts and molds cannot be distinguished from the background. The color of the test card in the new product version is not influenced by the food enzymes, and colonies of yeasts and molds can be easily recognized.



## SureFood® PCR products from our partner CONGEN Biotechnologie GmbH, Berlin

### News



The SureFood® ANIMAL ID, PCR-ELISA (S1005\*) product range for animal-species specification will be phased out of production at the end of 2010, and is already being replaced step by step by real-time PCR systems.

Up to now, the hybrid system of a PCR with subsequent ELISA quantification was an appropriate solution for some laboratories. With the ever-increasing use of real-time PCR instruments in most laboratories and the rising need for quantitative PCR, the PCR-ELISA range has now become obsolete. The already available qualitative SureFood®

ANIMAL ID real-time PCR tests in the area of animal-species specification for cats and dogs, cattle, pigs, chickens, turkeys, horses, and a highly sensitive test for pigs shall in future be supplemented by tests for ruminants and ducks. The quantitative tests, SureFood® ANIMAL QUANT real-time PCR tests, for cattle, pigs, and chickens shall be gradually expanded by further parameters as customer requirements dictate.

The SureFood® ALLERGEN real-time PCR test for the determination of celery (Celery, S3105) now has improved sensitivity. The handling procedure, however, remains the same.

## Information from R-Biopharm Rhône, Scotland

### UK food safety given boost

A new regulation-busting scheme introduced by the new UK government aims to raise food safety standards however the Food Standards Agency fear that it could lead to delays in the introduction of new EC safety laws.

The One-In, One-out (OIOO) scheme was launched at the beginning of September and will cover UK legislation only, until October 2011, with EU law included after that date. The program will prohibit government departments in England from introducing new regulations that impose a burden on business without finding at least equivalent

savings. Wales, Scotland and Northern Ireland are not yet covered by the measure. A report written by a member of the FSA has shown that various challenges face the FSA if it signs up to the scheme. In order to limit the effect of EU law, the UK will have to be effective in making its views heard to challenge 'burdensome approaches' and secure reasonable transition periods for EU legislation. Despite these challenges however, the report suggests that the scheme should be of benefit to consumers, businesses and authorities.

### New allergen standard – first draft due in 2012

The British Standards Institution (BSI) is aiming to produce the first draft of a new standard for the control of allergens in food production by 2012. It is believed that the Anaphylaxis Campaign's (AC) allergen control standard, launched in 2007 and axed in 2009, will be the starting point for the new standard. It will be refined and further developed in the coming months and should be available in early 2012. Although the AC's

standard was comprehensive, the industry proved reluctant to spend extra money on training and accrediting it therefore many manufacturers couldn't justify signing up for another scheme. Food manufacturers however still need support, advice and training when it comes to managing allergens in their supply chains, particularly in the area of risk management assessment and therefore the standard should prove useful.

## New publication about DZT MS-PREP® Immunoaffinity columns available

A publication which looks at the simultaneous quantitative determination of DON, ZON, T-2 & HT-2 in wheat and biscuit samples by LC/ESI-MS/MS coupled with immunoaffinity clean-up using DZT MS-PREP® was recently published. The study also looks at the effect of sample dilution, solvent concentration, sample loading as well as the effects of ion suppression.

Various solvent concentrations were tested. Samples were diluted to 3 %, 7.5 % and 15 % methanol concentration and passed through the immunoaffinity column. For methanol concentrations of 15 %, recoveries ranged from 83 % to 92 %. The results with DZT MS-PREP® demonstrate that higher solvent tolerances than usual can be used with the immunoaffinity columns. Matrix effects are one of the major problems

with LC-MS/MS therefore matrix matched standards, internal standards or isotopic standards can be used. If satisfactory sample purification is performed the matrix effects can be reduced. To demonstrate this, a competitor's solid phase columns were compared to clean-up with DZT MS-PREP® immunoaffinity columns. It was found that ion suppression occurred with the competitor's columns and it was found that ion suppression was lowered by purification of the toxins when using the DZT MS-PREP® immunoaffinity columns for sample clean-up. The higher clean-up ability of DZT MS-PREP® compared to the other solid phase columns indicates that an immunoaffinity column clean-up can minimize the need for matrix matched standards.

## If you are interested in our products,

please contact your local distributor.

The next R-Biopharm<sup>news</sup> will be published in the 1<sup>st</sup> quarter 2011.

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