

Robustness & Optimisation

BioSystems
Y15

BioSystems Y15,
Multiparametric automatic system

Food & Beverage analysis

human - centred biotech





Technological innovation

Efficiency in lab automation

BioSystems Y15 is an **open analyser** that easily adapts to any need and, thanks to its **multiple configuration options**, it can work with and monitor different sample types simultaneously.

Reliable and validated analysis system

BioSystems Y15, in conjunction with the dedicated reagents, is a **fully developed system validated for use in food and beverage industries and laboratories**. It provides rapid and accurate analytical results during the manufacturing process and facilitates quality control.

Minimum handling

Reagents adapted and dedicated to the analyser, avoiding the manual liquid handling.

Continuous loading

Samples continuous loading to streamline laboratory tasks.

Stable onboard temperature

BioSystems Y15c is the version equipped with a cooling system, which increases the onboard stability of reagents and ensures a constant temperature during work lists.

Simple and intuitive interface

A user-friendly software, designed specifically for these kind of analysis. The flexible and simple interface makes the BioSystems Y15 a versatile analyser that can adapt to any need.

Analytical solutions

Since 2008, we have been providing solutions for food and beverages analysis with the aim of improving their quality and safety. By listening to and understanding the needs of the sector, our team of professionals supports the food industry by developing and validating precise and reliable systems that offer an excellent user experience.

To ensure the best solution, we offer personalized assistance, providing technical and scientific support at every stage of the production process.



Technical &
scientific support



Remote
assistance



Customized
assessment



Minimal
manipulation



Fast and
convenient



Reagent
cost saving

A compact analytical system with maximum robustness that adapts to your laboratory.

BioSystems Y15:

Adapted and validated for various types of samples.

BioSystems Y15 parameters

ORGANIC ACIDS

	CODE
D-Lactic Acid	12801
L-Lactic Acid	12802
L-Malic Acid	12803
Acetic Acid	12810
Acetic Acid (Liquid)	12930
Gluconic Acid	12811
Tartaric Acid	12808
Pyruvic Acid	12826
L-Glutamic Acid	12830
Ascorbic Acid	12828
Citric Acid	12825

SUGARS

	CODE
Total Starch	12848
D-Glucose/D-Fructose	12800
Sucrose/ D-Glucose/D-Fructose	12819
Maltose/Sucrose/D-Glucose/D-Fructose	12893
Lactose/D-Galactose	12882

IONS

	CODE
Calcium	12824
Iron	12817
Copper	12814
Potassium	12823
Phosphate (Phosphorus)	12877

SULFITES

	CODE
Sulfite	12845

HISTAMINE

	CODE
Histamine	12829
Histamine Spike Solution	12891

GLUTEN

	CODE
Gluten	31000
Gluten Spike Solution	31002
Gluten Extraction Solution	31003

NITROGENOUS SUBSTANCES

	CODE
Nitrite	12842
Primary Amine Nitrogen (PAN)	12807
Ammonium	12809
Urea	12879

OTHER PARAMETERS

	CODE
Ethanol	12847
Polyphenols (Folin-Ciocalteu)	12815
Glycerol	12812
D-Sorbitol/Xylitol	12895
Acetaldehyde	12820

MULTICALIBRATORS

	CODE
Multical	12818
Ions Multical	12814

PRETREATMENTS

	CODE
Carrez Reagent	12837

BioSystems Y15

Automatic Random Access Analyser

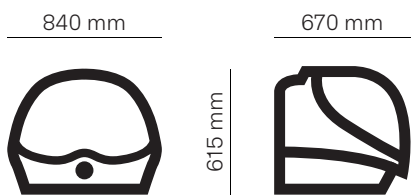
Highlights

- 150 cycles/hour (75 results/hour).
- Samples continuous loading.
- Dedicated reagents, minimum handling.
- Automatic pre and post dilution.
- User-friendly and adaptable software, direct results.

Item	Quantity	Code
BioSystems Y15 analyser	-	83106
BioSystems Y15C analyser	-	83106C
Reaction rotor	10 units	AC11485
Concentrated Washing Solution	500 mL	BO13416
Concentrated System Liquid	1000 mL	12889
Sample wells (pediatric cups)	1000 units	AC10770
Reagent bottles 50 mL + caps	10 units	BO11493
Reagent bottles 20 mL + caps	10 units	BO11494
Amber reagent bottles 50 mL + caps	10 units	BO13442
Halogen lamp Y15 6V/10W	1 unit	LA10429U

Intended use: automated analyser for the measurement of different kind of food and beverage samples. For professional use in analytical laboratories only.

Dimensions



Technical Specifications

THROUGHPUTS

Speed	150 cycles/hour
Mean throughput	75 results/hour

SAMPLE HANDLING

Positions for racks (reagents or samples)	4 or 2 in Y15c
Rack samples capacity	24 sample positions/rack
Max. capacity of samples	72 or 48 in Y15c
Barcode reader	External
Size of primary tubes	Ø 13 mm or 15 mm (max. height 100 mm)
Sample well diameter	13 mm
Sample types	Agri-food and beverage samples
Dispensing pump	Ceramic pump of high durability
Dispensing tip	Stainless steel 110 mm
Level detection	Capacitive
Sample pipetting volume	From 2 µL to 80 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:2 to 1:40
Tip wash	Inside and outside

REAGENTS HANDLING

Volume of reagent bottles	20 mL, 50 mL
Reagents rack capacity	10 bottles of 20 or 50 mL
Cooled reagent	Yes, in Y15c. 20 reagents max.
Temperature range of cooler	10 °C below room temperature (at 25 °C)
Reagent volume	R1 volume, 10 µL to 600 µL R2 volume, 10 µL to 200 µL
Dispensing mode	Ceramic pump without maintenance
Pipetting resolution	1 µL
Tip wash	Inside and outside

REACTION ROTOR

Reaction volume range	From 180 µL to 800 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	Dry without maintenance
Temperature	37.0 °C
Temperature accuracy	±0.2 °C

OPTICAL SYSTEM

Light Source	Halogen lamp (6V, 10W)
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Lightpath	6 mm
Wavelengths	340 - 405 - 420 - 520 - 560 - 600 - 620 - 635 - 670 nm (1 additional filter can be added by user)
Wavelength accuracy	±2 nm
Spectral range	340 - 900 nm
Photometric range	-0.05 to 3.6 A
Photometric detection system	Silicon photodiode
Internal resolution	<0.0001 A
Baseline stability	0.004 A max., 30 minutes at 505 nm

SIZE AND WEIGHT

Size (w., d., h.)	840 x 670 x 615 mm
Weight	45 Kg
Packaging	120x80x94 cm; 116 Kg

ELECTRICAL AND ENVIRONMENTAL REQUIREMENTS

Mains voltage	115 to 230 V
Mains frequency	50 or 60 Hz
Electric power	150 A (200 A in Y15c)
Ambient temperature	From 10 to 35 °C
Relative humidity	<75%
Altitude	<2500 m

FLUID REQUIREMENTS

System liquid solution bottle	3 L
Washing solution bottle	3 L
Waste solution bottle	3 L

MINIMUM COMPUTER REQUIREMENTS

Operative system	Windows® 10 (x64) or Windows® 11 (x64)
CPU	Equivalent to IntelCore i3 (8th generation) @ 3.10 GHz or over
RAM	8 GB
Hard Disk	40 GB or over
DVD Lector	Yes
Monitor minimum resolution	1280x800
Connector of serial channel	USB

LABORATORY INFORM ON SYSTEMS (LIS)

Connectivity to LIS	Yes
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BioSystems

SUCROSE /
D-GLUC / D-FRUC

REF 12819 40 mL

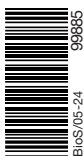
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BioS/05-24



BioSystems S.A.
Costa Brava 30, 08030 Barcelona (Spain)
t. +34 933 110 000
www.biosystems.global
foodbeverage@biosystems.global



Management
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www.tuv.com
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We make fish analysis easy

BioSystems
Y15

BioSystems Y15,
multiparametric analyser

Food & Beverage analysis

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Analytical solutions

The analysis of fresh and processed fish is made easier with our reagents and automatic analyser BioSystems Y15. Together with you, we guarantee quality and safety for your product.



Technical & scientific support



Remote assistance



Customized assessment



Minimal manipulation



Fast and convenient



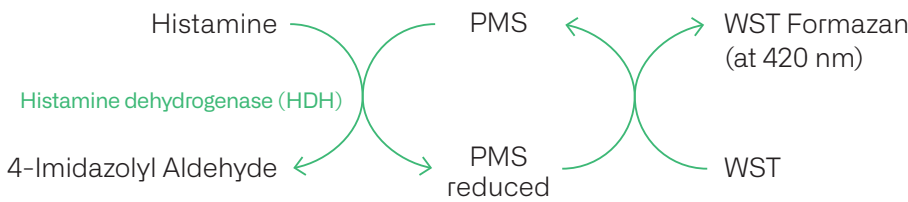
Reagent cost saving

BioSystems Y15 parameters

Reagent	Code
Histamine	12829
Histamine Spike Solution	12891
Sulfite	12845
Phosphate	12877
Ascorbic Acid	12828

Histamine | Ref. 12829

The reagent specifically detects the presence of histamine in fish and fishery products with high sensitivity (**histamine dehydrogenase** method). The analysis consists of a simple validated extraction and a rapid reaction with minimal reagent use. The system includes calibrators and is more economical and easier to use than expensive methodologies, such as immunoassay or HPLC.



Histamine kit for automated procedure, certified as AOAC Performance Tested MethodSM #072001.

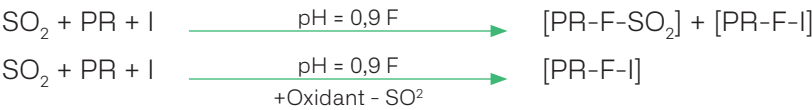
Immunoassays for allergens are available

Sulphites | Ref. 12845

The reagent for sulfite assay in crustaceans allows highly sensitive analysis of this substance and avoids interference by using the **pararosaniline** method.

The analysis consists of a simple validated extraction in crustaceans and a rapid reaction with minimal reagent use. The kit includes the extraction buffer and calibrator, making it very easy to use compared with other methodologies, and shows excellent correlation with the official method (Monier-Williams).

Principle of spectrophotometric method:



Phosphate | Ref. 12877

Phosphates are used as preservatives in many foods and in fish they serve mainly to maintain its organoleptic characteristics.

The inorganic **phosphate** present in the previously calcinated sample reacts with **molybdate** in an acid medium to form a complex which is quantified **spectrophotometrically**.

Principle of spectrophotometric method:

Phosphomolybdate | UV

Ascorbic Acid | Ref. 12828

Ascorbic acid is an organic acid that occurs naturally in various plant foods and is used as an **antioxidant** in many foods. In fish, it helps to maintain its properties.

In our method, the ascorbic acid present in the sample is reduced through the two reactions described.



BioSystems Y15

Automatic Random Access Analyser

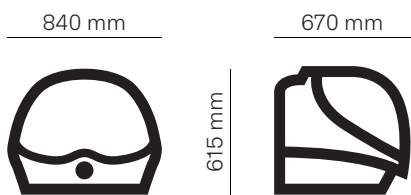
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BioSystems Y15 analyser	-	83106
BioSystems Y15C analyser	-	83106C
Reaction rotor	10 units	AC11485
Concentrated Washing Solution	500 mL	BO13416
Concentrated System Liquid	1000 mL	12889
Sample wells (pediatric cups)	1000 units	AC10770
Reagent bottles 50 mL + caps	10 units	BO11493
Reagent bottles 20 mL + caps	10 units	BO11494
Amber reagent bottles 50 mL + caps	10 units	BO13442
Halogen lamp Y15 6V/10W	1 unit	LA10429U

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Dimensions



Technical Specifications

THROUGHPUTS

Speed	150 cycles/hour
Mean throughput	75 results/hour

SAMPLE HANDLING

Positions for racks (reagents or samples)	4 or 2 in Y15c
Rack samples capacity	24 sample positions/rack
Max. capacity of samples	72 or 48 in Y15c
Barcode reader	External
Size of primary tubes	Ø 13 mm or 15 mm (max. height 100 mm)
Sample well diameter	13 mm
Sample types	Agri-food and beverage samples
Dispensing pump	Ceramic pump of high durability
Dispensing tip	Stainless steel 110 mm
Level detection	Capacitive
Sample pipetting volume	From 2 µL to 80 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:2 to 1:40
Tip wash	Inside and outside

REAGENTS HANDLING

Volume of reagent bottles	20 mL, 50 mL
Reagents rack capacity	10 bottles of 20 or 50 mL
Cooled reagent	Yes, in Y15c. 20 reagents max.
Temperature range of cooler	10 °C below room temperature (at 25 °C)
Reagent volume	R1 volume, 10 µL to 600 µL R2 volume, 10 µL to 200 µL
Dispensing mode	Ceramic pump without maintenance
Pipetting resolution	1 µL
Tip wash	Inside and outside

REACTION ROTOR

Reaction volume range	From 180 µL to 800 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	Dry without maintenance
Temperature	37.0 °C
Temperature accuracy	±0.2 °C

OPTICAL SYSTEM

Light Source	Halogen lamp (6V, 10W)
--------------	------------------------

Lightpath	6 mm
Wavelengths	340 - 405 - 420 - 520 - 560 - 600 - 620 - 635 - 670 nm (1 additional filter can be added by user)
Wavelength accuracy	±2 nm
Spectral range	340 - 900 nm
Photometric range	-0.05 to 3.6 A
Photometric detection system	Silicon photodiode
Internal resolution	<0.0001 A
Baseline stability	0.004 A max., 30 minutes at 505 nm

SIZE AND WEIGHT

Size (w., d., h.)	840 x 670 x 615 mm
Weight	45 Kg
Packaging	120x80x94 cm; 116 Kg

ELECTRICAL AND ENVIRONMENTAL REQUIREMENTS

Mains voltage	115 to 230 V
Mains frequency	50 or 60 Hz
Electric power	150 A (200 A in Y15c)
Ambient temperature	From 10 to 35 °C
Relative humidity	<75%
Altitude	<2500 m

FLUID REQUIREMENTS

System liquid solution bottle	3 L
Washing solution bottle	3 L
Waste solution bottle	3 L

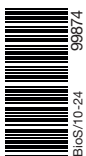
MINIMUM COMPUTER REQUIREMENTS

Operative system	Windows® 10 (x64) or Windows® 11 (x64)
CPU	Equivalent to IntelCore i3 (8th generation) @ 3.10 GHz or over
RAM	8 GB
Hard Disk	40 GB or over
DVD Lector	Yes
Monitor minimum resolution	1280x800
Connector of serial channel	USB

LABORATORY INFORM ON SYSTEMS (LIS)

Connectivity to LIS	Yes
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Bios/10-24



BioSystems S.A.
Costa Brava 30, 08030 Barcelona (Spain)
t. +34 933 110 000
www.biosystems.global
foodbeverage@biosystems.global



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Get the most of your time

BioSystems
Y15

Multiparametric automatic system

Juice, fruits and vegetables analysis

Food & Beverage analysis

human - centred biotech





Our complete system of reagents and instruments provides information throughout all the production steps, from raw materials to end products in different matrices (juice, concentrates, puree, etc.).

Analytical solutions

The reagents have been designed together with the **Automatic Analyser BioSystems Y15**, optimizing their performance and offering a unique system in the market.



Technical & scientific support



Remote assistance



Customized assessment



Minimal manipulation



Fast and convenient



Reagent cost saving

We help you ensure food quality and safety

Through the analysis of lactic acid or ethanol, both byproducts of fermentative metabolism, we can monitor the hygiene of the juice using indirect microbiology.

Other parameters, such as sugars or other organic acids, can also be analyzed through the automatic system in a quick, efficient, and simple way to ensure the quality and authenticity of the product or to label nutritional parameters in all types of fruits and vegetables.



NUTRITION FACTS



ADDITIVES PRESENCE



AUTHENTICITY



BY-PRODUCTS (INDIRECT MICROBIOLOGY)

Analytical Methods present in CODEX 247 standards

BioSystems Y15

SUGARS	CODE
D-Glucose/D-Fructose	12800
Sucrose/D-Glucose/D-Fructose	12819
Lactose/D-Galactose	12882
Sucrose	12894

ORGANIC ACIDS	CODE
D-Lactic Acid	12801
L-Lactic Acid	12802
L-Malic Acid	12803
L-Ascorbic Acid	12828
Citric Acid	12825
Acetic Acid (liquid)	12930
Tartaric Acid*	12808
D-Gluconic Acid*	12811
L-Glutamic Acid	12830

ALCOHOLS	CODE
Ethanol	12847
Glycerol	12812

NITROGENOUS SUBSTANCES**	CODE
Primary amino nitrogen	12807
Ammonia	12809

OTHER PARAMETERS	CODE
Polyphenols	12815
Gluten ***	31000

Immunoassays for allergens are available

* Validated only in grape juice
** Alternative to Formol index
*** Extraction and spike solution separately

BioSystems Y15

Automatic Random Access Analyser

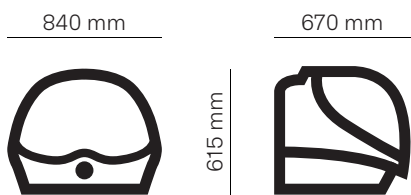
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Halogen lamp Y15 6V/10W	1 unit	LA10429U

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Dimensions



Technical Specifications

THROUGHPUTS

Speed	150 cycles/hour
Mean throughput	75 results/hour

SAMPLE HANDLING

Positions for racks (reagents or samples)	4 or 2 in Y15c
Rack samples capacity	24 sample positions/rack
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Sample well diameter	13 mm
Sample types	Agri-food and beverage samples
Dispensing pump	Ceramic pump of high durability
Dispensing tip	Stainless steel 110 mm
Level detection	Capacitive
Sample pipetting volume	From 2 µL to 80 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:2 to 1:40
Tip wash	Inside and outside

REAGENTS HANDLING

Volume of reagent bottles	20 mL, 50 mL
Reagents rack capacity	10 bottles of 20 or 50 mL
Cooled reagent	Yes, in Y15c. 20 reagents max.
Temperature range of cooler	10 °C below room temperature (at 25 °C)
Reagent volume	R1 volume, 10 µL to 600 µL R2 volume, 10 µL to 200 µL
Dispensing mode	Ceramic pump without maintenance
Pipetting resolution	1 µL
Tip wash	Inside and outside

REACTION ROTOR

Reaction volume range	From 180 µL to 800 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	Dry without maintenance
Temperature	37.0 °C
Temperature accuracy	±0.2 °C

OPTICAL SYSTEM

Light Source	Halogen lamp (6V, 10W)
--------------	------------------------

Lightpath	6 mm
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Photometric detection system	Silicon photodiode
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SIZE AND WEIGHT

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Weight	45 Kg
Packaging	120x80x94 cm; 116 Kg

ELECTRICAL AND ENVIRONMENTAL REQUIREMENTS

Mains voltage	115 to 230 V
Mains frequency	50 or 60 Hz
Electric power	150 A (200 A in Y15c)
Ambient temperature	From 10 to 35 °C
Relative humidity	<75%
Altitude	<2500 m

FLUID REQUIREMENTS

System liquid solution bottle	3 L
Washing solution bottle	3 L
Waste solution bottle	3 L

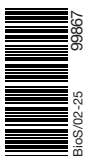
MINIMUM COMPUTER REQUIREMENTS

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RAM	8 GB
Hard Disk	40 GB or over
DVD Lector	Yes
Monitor minimum resolution	1280x800
Connector of serial channel	USB

LABORATORY INFORM ON SYSTEMS (LIS)

Connectivity to LIS	Yes
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Bios/02-25



BioSystems S.A.
Costa Brava 30, 08030 Barcelona (Spain)
t. +34 933 110 000
www.biosystems.global
foodbeverage@biosystems.global



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ISO 9001:2015
www.tuv.com
ID 0091006696

Sweeten your routine in the laboratory

BioSystems
Y15

Sugar analysis in foodstuff

Food & Beverage analysis

human - centred biotech





Carbohydrate analysis is an essential tool for monitoring different technological processes and their quality, in the detection of adulterations, as well as in the determination of nutritional parameters for their correct labeling.

Analytical solutions

The reagents have been designed together with the **Automatic Analyser BioSystems Y15**, optimizing their performance and offering a unique system in the market.



Technical & scientific support



Remote assistance



Customized assessment



Minimal manipulation



Fast and convenient



Reagent cost saving

D-Glucose / D-Fructose | Ref. 12800¹

Glucose and **fructose** are monosaccharides naturally present in different food or added as additives. The reagent allows the quantification of sugars separately or together in different food matrices such as juices and beverages, vegetables, meat, dairy or cereal-based products, among others.

Principle of the spectrophotometric method:

- Hexokinase
- Phosphoglucose isomerase
- Glucose-6-phosphate dehydrogenase

Sucrose / D-Glucose / D-Fructose | Ref. 12819¹

Sucrose, **glucose** and **fructose** are simple sugars naturally present in different foods or added as additives. The reagent enables the quantification of sucrose separately or all together in different food matrices such as juices and beverages, vegetables, meat, dairy, or cereal-based products, among others.

Principle of the spectrophotometric method:

- β -fructosidase
- Hexokinase
- Phosphoglucose isomerase
- Glucose-6-phosphate dehydrogenase

¹**Metrological** characteristics: for further technical information about the reagents, request the performance report from your supplier. On the instructions for use of each reagent, you will find more information about the matrix extraction processes.

Maltose / Sucrose / D-Glucose / D-Fructose | Ref. 12893¹

Maltose, sucrose, glucose and fructose are simple sugars (mono and disaccharides) naturally present in different foods. The reagent allows the quantification of the four sugars in different cereal-based products.

Principle of the spectrophotometric method:

- α -glucosidase
- β -fructosidase
- β -glucosidase
- Hexokinase
- Phosphoglucose isomerase
- Glucose-6-phosphate dehydrogenase

Sucrose | Ref. 12894¹

The reagent allows the quantification of sucrose in samples with higher concentration

Principle of the spectrophotometric method:

- β -fructosidase
- Hexokinase
- Glucose-6-phosphate dehydrogenase

Lactose / D-Galactose | Ref. 12882¹

Lactose is a disaccharide sugar, formed by D-glucose and **D-galactose**. Both substances are naturally present in dairy products or can be added externally as additives. The reagent has been validated in juices and beverages, cereal, meat or dairy products. It allows the quantification of sugars separately or the sum of both.

Principle of the spectrophotometric method:

- β -galactosidase
- Mutarotase
- β -galactose dehydrogenase

Depending on the application used, the reagent can be also used for lactose-free labeling (except for samples containing lactose-free dairy products).

¹**Metrological** characteristics: for further technical information about the reagents, request the performance report from your supplier. On the instructions for use of each reagent, you will find more information about the matrix extraction processes.



Starch | Ref. 12848¹

Starch is a complex carbohydrate formed by glucose polymers. It is the energy source in cereals and potatoes, where is naturally found. Also, its use as a thickener and texturizer is widely spread in the food industry. The reagent allows the quantification of starch, via glucose.

Principle of the spectrophotometric method:

- α-amilase
- Amiloglucosidase
- Hexoquinase
- Glucose-6-phosphate deshydrogenase

Validated Matrices²

 Reagents	 Juices	 Fruit & Vegetables	 Cereals Products	 Honey	 Dairy Products	 Meat Products	 Chocolates
D-GLUCOSE / D-FRUCTOSE	✓	✓	✓	✓	✓	✓	✓
SUCROSE / D-GLUCOSE / D-FRUCTOSE	✓	✓	✓	✓	✓	✓	✓
MALTOSE / SUCROSE / D-GLUCOSE / D-FRUCTOSE			✓				
SUCROSE	✓	✓					
LACTOSE / D-GALACTOSE			✓		✓	✓	✓
TOTAL STARCH			✓			✓	

¹**Metrological** characteristics: for further technical information about the reagents, request the performance report from your supplier. On the instructions for use of each reagent, you will find more information about the matrix extraction processes.

²Methods may also be used with other types of samples. Contact your supplier for more information.

BioSystems Y15

Automatic Random Access Analyser

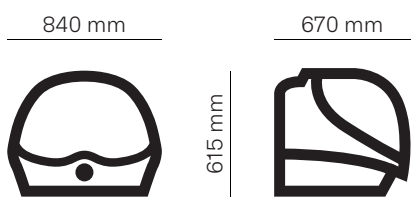
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Halogen lamp Y15 6V/10W	1 unit	LA10429U

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Technical Specifications

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Speed	150 cycles/hour
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Barcode reader	External
Size of primary tubes	Ø 13 mm or 15 mm (max. height 100 mm)
Sample well diameter	13 mm
Sample types	Agri-food and beverage samples
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Dispensing tip	Stainless steel 110 mm
Level detection	Capacitive
Sample pipetting volume	From 2 µL to 80 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:2 to 1:40
Tip wash	Inside and outside

REAGENTS HANDLING

Volume of reagent bottles	20 mL, 50 mL
Reagents rack capacity	10 bottles of 20 or 50 mL
Cooled reagent	Yes, in Y15c. 20 reagents max.
Temperature range of cooler	10 °C below room temperature (at 25 °C)
Reagent volume	R1 volume, 10 µL to 600 µL R2 volume, 10 µL to 200 µL
Dispensing mode	Ceramic pump without maintenance
Pipetting resolution	1 µL
Tip wash	Inside and outside

REACTION ROTOR

Reaction volume range	From 180 µL to 800 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	Dry without maintenance
Temperature	37.0 °C
Temperature accuracy	±0.2 °C

OPTICAL SYSTEM

Light Source	Halogen lamp (6V, 10W)
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Lightpath	6 mm
Wavelengths	340 - 405 - 420 - 520 - 560 - 600 - 620 - 635 - 670 nm (1 additional filter can be added by user)
Wavelength accuracy	±2 nm
Spectral range	340 - 900 nm
Photometric range	-0.05 to 3.6 A
Photometric detection system	Silicon photodiode
Internal resolution	<0.0001 A
Baseline stability	0.004 A max., 30 minutes at 505 nm

SIZE AND WEIGHT

Size (w., d., h.)	840 x 670 x 615 mm
Weight	45 Kg
Packaging	120x80x94 cm; 116 Kg

ELECTRICAL AND ENVIRONMENTAL REQUIREMENTS

Mains voltage	115 to 230 V
Mains frequency	50 or 60 Hz
Electric power	150 A (200 A in Y15c)
Ambient temperature	From 10 to 35 °C
Relative humidity	<75%
Altitude	<2500 m

FLUID REQUIREMENTS

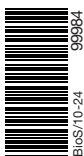
System liquid solution bottle	3 L
Washing solution bottle	3 L
Waste solution bottle	3 L

MINIMUM COMPUTER REQUIREMENTS

Operative system	Windows® 10 (x64) or Windows® 11 (x64)
CPU	Equivalent to IntelCore i3 (8th generation) @ 3.10 GHz or over
RAM	8 GB
Hard Disk	40 GB or over
DVD Lector	Yes
Monitor minimum resolution	1280x800
Connector of serial channel	USB

LABORATORY INFORM ON SYSTEMS (LIS)

Connectivity to LIS	Yes
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BioS/10-24



BioSystems S.A.
Costa Brava 30, 08030 Barcelona (Spain)
t. +34 933 110 000
www.biosystems.global
foodbeverage@biosystems.global



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System
ISO 9001:2015
www.tuv.com
ID 0091006696

Innovating gluten analysis

Speed & precision

BioSystems
Y15

Food & Beverage analysis

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What is gluten

Gluten is found in certain cereal grains as a group of structural proteins, primarily composed of prolamins and glutelins.

Grains containing gluten include all species of wheat, barley, rye, and some cultivars of oat; moreover, cross hybrids of any of these cereal also contain gluten, e.g. triticale. Gluten constitutes around 80% of total protein in bread wheat and it is a key compound in bakery and related technological processes in food industry.

Why is it analysed?

Certain of these proteins trigger celiac **disease**, **allergies**, or **intolerances** in some individuals, which can only be avoided in a gluten-free diet.

Gluten analysis is frequently tested using immunoassays based on antigen-antibody bond to detect and sometimes quantify the amount of gluten in a particular matrix. Proper and thorough labelling is essential and mandatory in most countries.

Regulations (EU) 1169/2011 and 828/2014 in the European Union, as well as similar ones in other countries, ensure appropriate gluten labelling and indicate the maximum permitted level (generally 20 ppm).

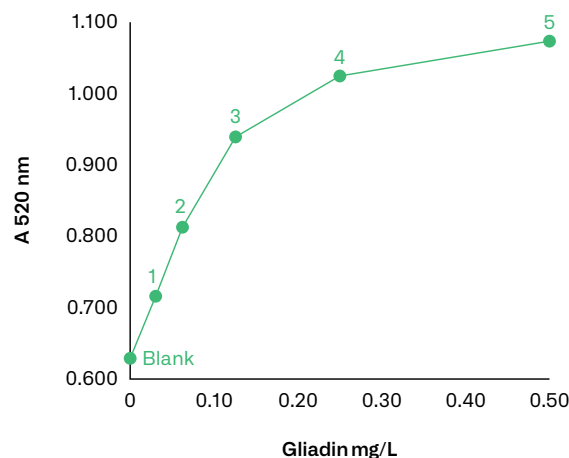


Our gluten analysis

We present a **new method** for quantifying gluten, based on an **immunoturbidimetric reagent automated in BioSystems Y15 analyser**. This method has the advantages of rapid tests (speed) while accurately quantifying Gluten (like ELISA) in automated way. Other analytes of interest in food industry can be done in the same platform like sugars, organic acids or histamine.

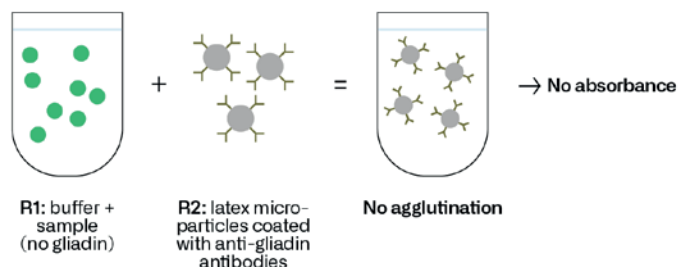
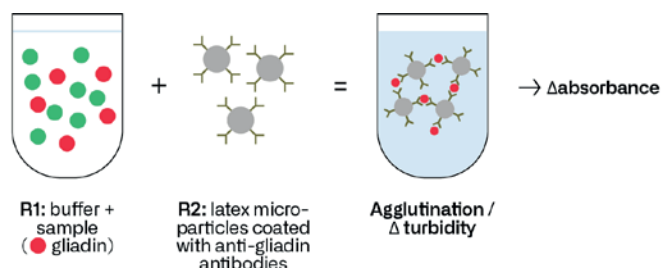
The Gluten test employs **immunoturbidimetry** with latex nanoparticles coated with a monoclonal antibody. This antibody specifically recognises the 33-mer fragment known for its high toxicity. This fragment is present in prolamins like gliadin.

When these coated nanoparticles react with gliadin in the sample, it increases the turbidity of the medium, which is measured using spectrophotometry. The increase in absorbance is proportional to the gluten concentration in the sample. Calibrators are supplied in the kit and are traceable to Gliadin from Prolamin Work Group (PWG).

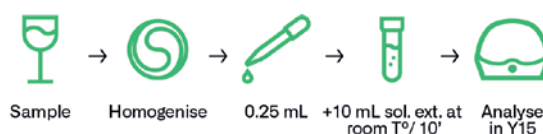


Gliadin/Prolamin in the sample is extracted in a single step with a user-friendly extraction solution (Ref. 31003), in a faster and safer way than other methods.

Solids extraction:



Liquids extraction:



Once extracted, the liquid sample is placed in the autoanalyser, giving direct results in ppm within 10 minutes for the first sample (with a capacity of up to 75 tests per hour).

We have also developed a spike solution to create internal controls (Ref. 31002). Gluten concentration is 250 mg/L of gluten and traceable to PWG. Spike solution can be used diluted in the extraction solution (Ref. 31003) or directly added to the matrix in order to evaluate recoveries.

Gluten performance characteristics | Ref. 31000:

Limit of quantification: 2.5 mg/kg (mg/L) gluten
Measurement interval: 2.5 - 40 mg/kg (mg/L) gluten

Precisión:

Matrices	Gluten contamination Source	mg/kg		RSDr
Corn flour	Wheat flour	5	10.7	
		20	8.4	
Rice flour	Wheat flour	5	9.2	
		20	11.7	
Red wine	Wheat flour	5	3.5	
		10	3.4	
Sausage	Wheat flour	5	8.0	
		20	10.5	
Cacao powder	Gluten Spike Solution	5	7.1	
		10	3.6	
Cookies	Gluten Spike Solution	2.5	4.1	
		10	2.0	

The reagent has been validated according to the AOAC Guidelines, and it shows excellent results in front of the official method (R5 antibody – Category I from CODEX Alimentarius).

FAPAS. Quality Control Material		R5 antibody kit		BioSystems Y15 Gluten		
Reference	Matrix	Assigned value. Xa (range for z ≤2)	Nº of data points Xa	Mean (n=5) mg/kg	Bias. mg/kg	Bias (%)
T27247BQC	Cake mix	19.3 (9.6 - 28.9)	100	12.1	-7.20	63
T27252AQC	Oat based foodstuff	16.6 (8.3 - 24.9)	61	18.3	1.70	110
T27262QC	Cooked biscuit	76 (38.0 - 114.0)	73	90.2	14.20	119
T27264BQC	Infant soya formula	24.8 (12.4 - 37.2)	52	36.8	12.00	148
T27271AQC	Cake mix	39.2 (19.6 - 58.8)	68	38.2	-0.98	97
T27275AQC	Cake mix	14.9 (7.5 - 22.4)	94	17.8	2.87	119
T27301BQC	Cake mix	16.0 (8.0 - 24.0)	78	17.0	0.95	106
T27314QC	Cooked Biscuit	56.3 (28.1 - 84.1)	58	55.1	-1.22	98
T27331AQC	Cake mix	13.9 (6.9 - 20.8)	88	16.6	2.70	119
T27331BQC	Cake mix	5.53 (2.76 - 8.29)	48	4.1	-1.46	74

FAPAS. Material de Control de Calidad		Kit de anticuerpo R5		Y15 Gluten BioSystems		
Reference	Matrix	Reference value (U)	Nº of data points RV	Media (n=5) mg/kg	Bias. mg/kg	Bias (%)
TYG001RM	Cake mix	14.4 (1.7)	95	14.7	0.3	103
TYG002RM	Cake mix	28.8 (2.4)	103	28.0	-0.8	97



BioSystems Gluten kit

Our gluten quantification method allows you to perform automated analysis by immunoturbidimetry, obtaining fast and accurate results.

Key features include:

- Immunoassay: quantitative and direct method
- Ready-to-use reagents and standards
- No calibration required for every run
- No washing step
- No need for trained personnel
- Single-step extraction without requiring a fume cabinet

Producto	Código
Gluten	31000
Gluten Spike Solution	31002
Gluten Extraction Solution	31003

BioSystems Y15

Automatic Random Access Analyser

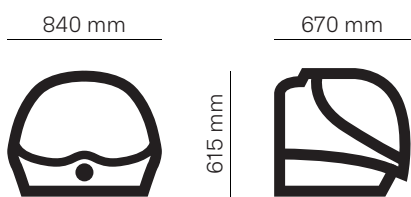
Highlights

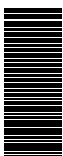
- 150 cycles/hour (75 results/hour).
- Samples continuous loading.
- Dedicated reagents, minimum handling.
- Automatic pre and post dilution.
- User-friendly and adaptable software, direct results.

Item	Quantity	Code
BioSystems Y15 analyser	-	83106
BioSystems Y15C analyser	-	83106C
Reaction rotor	10 units	AC11485
Concentrated Washing Solution	500 mL	BO13416
Concentrated System Liquid	1000 mL	12889
Sample wells (pediatric cups)	1000 units	AC10770
Reagent bottles 50 mL + caps	10 units	BO11493
Reagent bottles 20 mL + caps	10 units	BO11494
Amber reagent bottles 50 mL + caps	10 units	BO13442
Halogen lamp Y15 6V/10W	1 unit	LA10429U

Intended use: automated analyser for the measurement of different kind of food and beverage samples. For professional use in analytical laboratories only.

Dimensions





BioS/05-24 ZSM00005



BioSystems S.A.
Costa Brava 30, 08030 Barcelona (Spain)
t. +34 933 110 000
www.biosystems.global
foodbeverage@biosystems.global



Management
System
ISO 9001:2015
www.tuv.com
ID 0091006696