

A close-up photograph of two bees on a honeycomb. The honeycomb is a golden-brown color with a hexagonal pattern. The bees are brown and black with translucent wings. One bee is in the upper right, and the other is in the lower left. The background is a dark, out-of-focus honeycomb.

RANDOX

FOOD DIAGNOSTICS

Antibiotic Honey Screening

The natural choice



Randox Food Diagnostics is the global leader for antibiotic screening in honey. With over 30 years' experience and a dedicated research and development team, Randox Food is committed to the development and manufacturing of high quality and reliable antibiotic screening solutions.

With products manufactured to the highest quality, users are provided with the most advanced diagnostic equipment for the quantitative analysis of a vast number of antimicrobials in honey.

Re-defining standards within the antibiotic honey screening industry, Randox's patented multiplex technology will reduce labour costs, increase throughput and combine convenience with confidence.

Why Test?

Antibiotics are commonly used in apiculture to treat many bacterial diseases as a therapeutic or preventative measure, protecting honey bees. Antimicrobial drugs are effective against diseases such as Foulbrood and play an essential role in apiculture, ensuring the health of bees. This, in turn, safeguards the sustainability of this pivotal component in the agricultural sector.

While antibiotics are effective at fighting diseases, there is a risk of drug residues being present in the finished product; as a result the use of antimicrobials in apiculture is regulated, with some being banned. This focus towards protecting the consumer has created a demand for rapid, reliable and sensitive screening methods.

The detection of antibiotic residues plays a key role in the security and safety of a vital global industry.

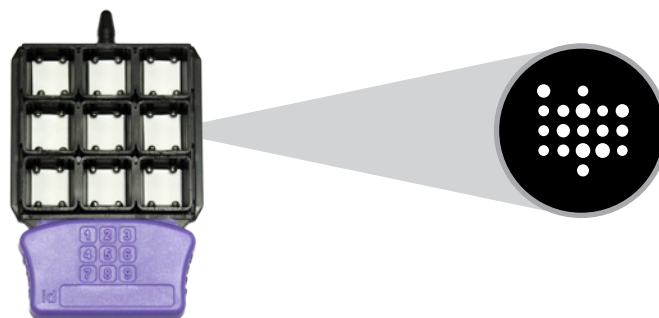


Multiplex Screening

Randox Food Diagnostics presents the world's only multi-analyte quantitative antibiotic screening analyser, the Evidence Investigator. Using Randox patented Biochip Array Technology, the analyser simultaneously detects multiple antibiotics from a single honey sample within a lab setting.

The Evidence Investigator reduces the number of samples sent to confirmation laboratories, by isolating samples that are below the tolerance cut off level. Removing the need for extensive confirmation testing, Biochip Array Technology ensures reliable results that are strongly comparable to LC/MS-MS.

Randox Food Diagnostics is proud to have developed this unique multiplex method and combined with a globally trusted test portfolio, forms a powerful tool for any laboratory or testing facility.



Biochip carrier

Spotted antibodies

Evidence Investigator Process



Add 50µl of prepared sample and reagents to each biochip



Use Thermoshaker to incubate up to 54 samples



Rinse, tap and dry each carrier prior to imaging



Add signal to each biochip and load onto the analyser



Image and result processing on Evidence Investigator

Evidence Investigator Package

Randox Food Diagnostics provides a complete package along with the Evidence Investigator including PC, imaging software, barcode scanner; Randox's customised Thermoshaker and full training.



Thermoshaker



PC and imaging software



Barcode scanner



Evidence Investigator



Multiplex screening



for honey analysis

Biochip Array Technology

Antimicrobial Array I Ultra (EV3843)

Assay	Compound	Specificity	LOD ¹
Sulphadimethoxine	Sulphadimethoxine	100	5.0*
Sulphadiazine	Sulphadiazine	100	5.0
Sulphadoxine	Sulphadoxine	100	5.0
Sulphamethoxazole	Sulphamethoxazole	100	1.6
	Sulphamethizole	92	
Sulphapyridine	Sulphapyridine	100	8.0
Sulphamethoxypyridazine	Sulphamethoxypyridazine	100	5.0
Sulphachlorpyridazine	Sulphachlorpyridazine	100	5.0
Sulphamerazine	Sulphamerazine	100	5.0
Sulphisoxazole	Sulphisoxazole	100	5.0
Sulphathiazole	Sulphathiazole	100	5.0
Sulphamethazine	Sulphamethazine	100	5.0
Sulphaquinoxaline	Sulphaquinoxaline	100	5.0
Sulphamonomethoxine	Sulphamonomethoxine	100	20
Trimethoprim	Trimethoprim	100	9.0
Dapsone	Dapsone	100	3.5

*10ppb is recommended for screening raw honey

Antimicrobial Array III (EV3695)

Assay	Compound	Specificity	LOD ¹
AOZ	4-NP-AOZ	100	0.3
	Furazolidone	8.3	
AMOX	4-NP-AMOX	100	0.08
	Furaltadone	41	
AHD	4-NP-AHD	100	0.3
	Nitrofurantoin	42	
SEM	4-NP-SEM	100	0.5

Antimicrobial Array CAP only (EV3738)

Assay	Compound	Specificity	LOD ¹
Chloramphenicol	Chloramphenicol	100	0.14
	Chloramphenicol Glucuronide	75.1	

Antimicrobial Array II Plus** (EV4169A/B)

Assay	Compound	Specificity	LOD ¹
Quinolones	Norfloxacin	100	2.5
	Pefloxacin	84	
	Enrofloxacin	76	
	Ciprofloxacin	59	
	Ofloxacin	57	
	Enoxacin	54	
	Pipemidic Acid	36	
	Fleroxacin	32	
	Levofloxacin	32	
	Nadifloxacin	27	
	Orbifloxacin	23	
	Danofloxacin	20	
	Marbofloxacin	16	
	Oxolinic Acid	12	
	Difloxacin	8	
	Pazufloxacin	7	
	Sarafloxacin	6	
Ceftiofur	Ceftiofur	100	2.0
	Desfuroylceftiofur	92	
Thiamphenicol	Florfenicol	100	1.0
	Thiamphenicol	53	
Streptomycin	Streptomycin	100	3.0
	Dihydrostreptomycin	182	
Tylosin	Tylosin	100	1.0
	Tilmicosin	37	
Tetracycline	Tetracycline	100	4.5
	4-epitetracycline	87	
	Rolitetetracycline	67	
	4-epioxytetracycline	52	
	Oxytetracycline	52	
	Chlortetracycline	51	
	Demeclocycline	41	
	Doxycycline	23	
	4-epichlortetracycline	20	
	Methacycline	11	

**Antimicrobial Array II (EV3524A/B) still available.

Antimicrobial Array IV (EV3878A/B)

Assay	Compound	Specificity	LOD ¹
Spiramycin/Josamycin	Spiramycin	100	2.0
	Kitasamycin	169	
	Spiramycin I	79	
	Acetylspiramycin	32	
	Josamycin	27	
Apramycin	Apramycin	100	2.0
Bacitracin	Bacitracin	100	1.2
Neomycin/Paromomycin	Neomycin	100	1.0
	Paromomycin	182	
	Framycetin	25	
Tobramycin	Tobramycin	100	4.0
	Kanamycin B	24	
	Dibekacin	20	
Tylosin B/Tilmicosin	Tylosin B	100	1.0
	Tylosin A	105	
	Tilmicosin	82	
	Tylvalosin	48	
Spectinomycin	Spectinomycin	100	2.6
Amikacin	Amikacin	100	6.0
	Kanamycin A	260	
	Kanamycin B	9	
Lincosamides	Lincomycin	100	8.0
	Clindamycin	160	
	Pirlimycin	38	
Erythromycin	Erythromycin	100	2.5
	Clarithromycin	498	
	Roxithromycin	334	
	Gamithromycin	51	
	Tulathromycin	10	
Streptomycin	Streptomycin	100	4.0
	Dihydrostreptomycin	135	
Virginiamycin	Virginiamycin M1	100	2.0

Antimicrobial Array V (EV4027)

Assay	Compound	Specificity	LOD ¹
Nitroimidazole	Metronidazole	100	0.9
	Ronidazole	310	
	Hydroxy-Metronidazole	145	
	Dimetridazole	90	
	Ternidazole	85	
	Ipironidazole	82	
	HMMNI	56	
Chloramphenicol	Chloramphenicol	100	0.1
	Chloramphenicol Glucuronide	75	

Accessories

Name	Cat. No.	Volume
Antimicrobial Array II Conjugate	RFD8364	1 ml
Antimicrobial Array III Conjugate	RFD8365	1 ml
Antimicrobial Array CAP only Conjugate	RFD8368	1 ml
Antimicrobial Array II Controls	AMC5035	3x1 ml
Antimicrobial Array III Controls	AMC5306	3x1 ml

Antimicrobial Array I, IV and V controls included in kits.

Independent References

Evaluation and Validation of a Biochip Multi-Array technology for the screening of antibiotic residues in honey according to the European guideline for the validation of screening methods.

V. Gaudin, C. Hedou, E. Verdon,

Anses (E.U ref. lab), Fougere, France

Method Validation for Simultaneous Determination of 12 Sulfonamides in Honey using Biochip Array Technology.

I.D. Popa (Morariu), E.C. Schiriac, S. Matiut, R. Cuciureanu

University of Medicine & Pharmacy, Romania, Farmacia (2012), Vol. 60, Iss. 1

Coming Soon | Pesticides Array

The all new Pesticides Array from Randox Food is currently in development; this will provide multiple results for the world's most prevalent pesticides, including Amitraz, Fluralinate and Coumaphos from a single honey sample.

Key

¹Limit of Detection (PPB)

Analysis Times

Assay	Cat. No.	Samples Per Kit	Sample Preparation	Incubation & Assay	Total Time
Antimicrobial Array I Ultra	EV3843	Up to 54	20 mins	2 hrs	2 hrs 30 mins
Antimicrobial Array II Plus	EV4169A/B	Up to 54	20 mins	2 hrs	2 hrs 30 mins
Antimicrobial Array III	EV3695	Up to 54	4 hrs	2 hrs	6 hrs
Antimicrobial Array CAP only	EV3738	Up to 54	50 mins	2 hrs	3 hrs
Antimicrobial Array IV	EV3878A/B	Up to 54	20 mins	2 hrs	2 hrs 30 mins
Antimicrobial Array V	EV4027	Up to 54	50 mins	2 hrs	3 hrs



Example : Antimicrobial Array II Plus (EV4169A/B)

Discrete Test Regions on each biochip for individual analytes

- 1

Reference spot
- 2

Correction spot
- 3

Quinolones
- 4

Ceftiofur
- 5

Thiamphenicol
- 6

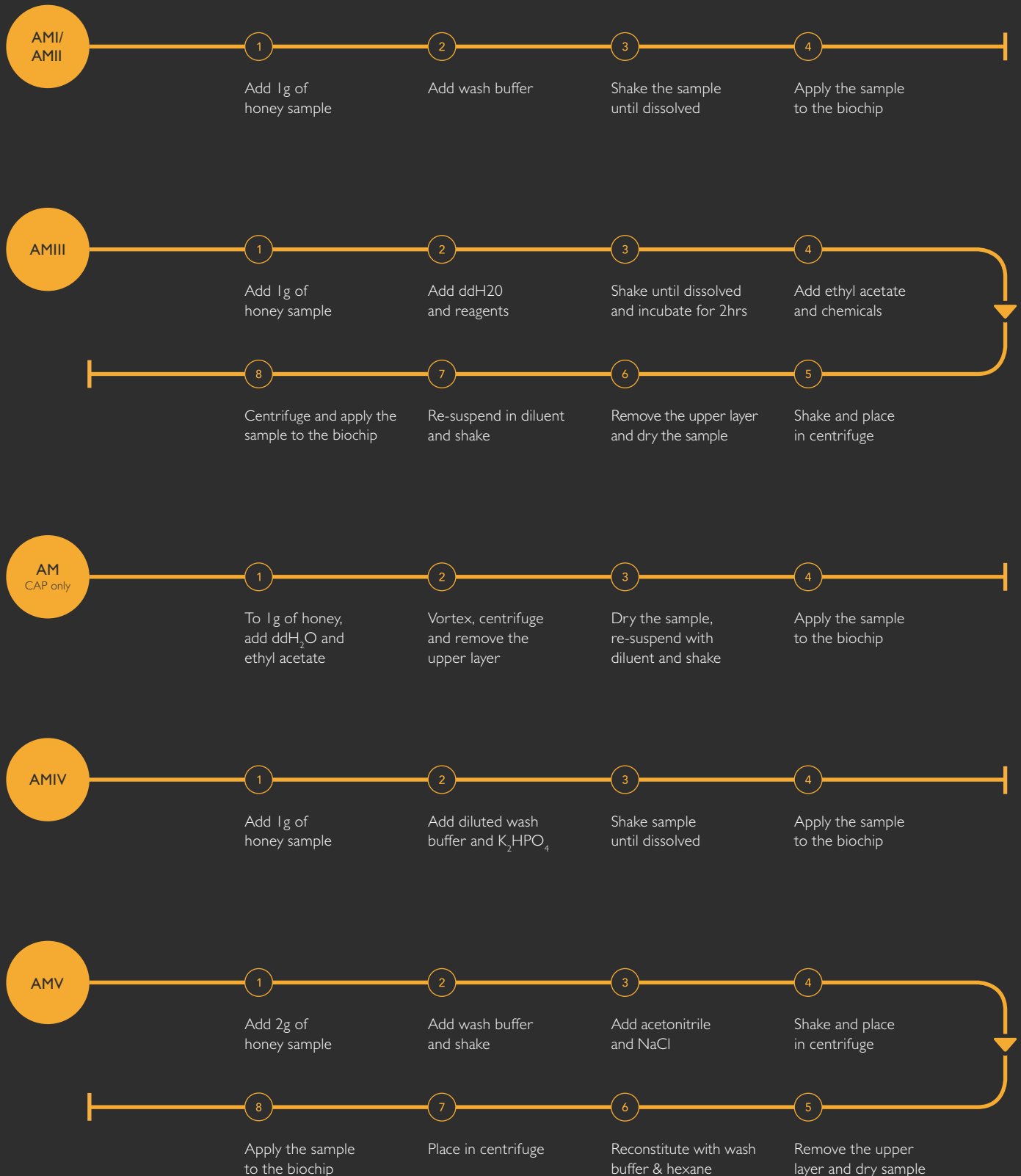
Streptomycin
- 7

Tylosin
- 8

Tetracyclines
- 9

Correction spot

Sample Preparations



Benefits of Biochip Array Technology

Higher throughput

- 54 samples assessed in under two hours

Floral honey validation

- Validation of various floral honey types, including raw honey

Multiplex screening

- Multiple antibiotic analyte screening from a single sample

Reduced false positives

- Less than 5% false positives and no false negatives

Dynamic test menu

- Growing menu of drug residue tests

Simple sample preparation

- Simple to use with little technical expertise required

Excellent sensitivity

- Quantitative concentration results (ppb) for each analyte

Cost savings

- Significant cost savings compared to confirmatory methods

The complete package

- Investigator unit, PC, software, Thermoshaker & barcode scanner

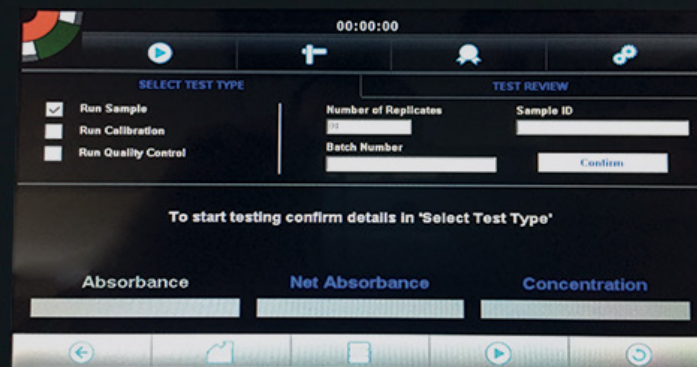


Honey Analysis with RX altona

The RX altona brings the most modern enzymatic analysis technology to the honey processing industry and is now available for the analysis of diastase and total sugars. Using enzymatic and colorimetric principles, the RX altona provides users with accurate and trusted results.

Accuracy with the flexibility of multiple wavelengths for further analysis, open channels and the ability to upload new parameters via USB, means the RX altona is the most versatile and easy to use enzymatic analyser on the market.

Product	Product Type	Cat. No.
RX altona	Analyser	RX6015
Glucose/Fructose	Reagent	GF2635
Phadebas® Honey Diastase Test (50 tablets)	Reagent	I321
Phadebas® Honey Diastase Test (5x100 tablets)	Reagent	I322



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Support Plan

Radox Food Diagnostics is offering full customer support with a 3-5 day installation plan included in the Evidence Investigator package.

This plan includes :

- » Full set up of equipment
- » Training on sample preparation
- » Training on assay procedure and imaging
- » Training on software and results reporting
- » Training on basic troubleshooting

This package also includes one year full warranty, one year of customer support as well as online trouble shooting.

Additional warranty plan also available – Protection Plan 'Pro' (up to four years). Radox Food also offers one and two day training recap sessions, at the request of the customer.



ELISA Test Kits

Randox Food Diagnostics' ELISA test kits allow for the screening of drug residues in various matrices and show favourable comparison with confirmatory methods.

Using antibodies cultivated at Randox HQ, ELISAs produced by Randox Food exclusively for the food industry boast excellent limits of detection, simple sample preparation and a vast test menu. All these elements, combined with Randox's quality assurance, guarantee premium quality screening.

Drug Residue	Cat. No.
AOZ	NF3465
AMOZ	NF3462
AHD	NF3463
β -lactams	BL3448
β -lactams standard accessory kit	BL1371
Chloramphenicol	CN1469
Flumequine	FQ3460
Quinolones	QL3454
SEM	NF3461
Streptomycin/Dihydrostreptomycin	STP3468
Sulphadiazine	SZ2147
Sulphamethazine	SM2146
Sulphamethoxazole	SZ3471
Sulphaquinoxaline	SQ2145
Tetracyclines SENSITIVE	TCS10117A/B
Oxytetracycline SENSITIVE	OXS10118A/B

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500+

laboratories using Randox
Food Diagnostics technology

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