RANDOX
FOOD DIAGNOSTICS

Milk Analysis

PERFORMANCE TESTED
AOAC
RESEARCH INSTITUTE
LICENSE NUMBER 051705

Better Science, Safer Milk

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Guarding the Global Dairy Industry

Commitment to research and development is the driving force behind our innovative technology and has allowed Randox Food Diagnostics to become a global leader in drug residue screening. With a comprehensive range of testing solutions and validations across a range of matrices, we are changing the face of food safety and quality worldwide.

Randox Food Diagnostics has developed a specific product portfolio to suit the needs of global dairy processors. Putting the food and agriculture industries at the forefront of what we do has allowed Randox Food to become the industries trusted supplier of the most innovative technology. Randox's patented Biochip Array Technology offers the user more information, faster and cheaper than ever before, empowering them to protect not only their dairy products, but the animals that produce them.

Biochip Array Technology

Randox's patented Biochip Array Technology (BAT) provides multiple results from a single, undivided sample. Accurate, repeatable and trusted results on a 9x9mm ceramic chip. Our unique technology is at the forefront of testing and provides a large number of results in less time when compared to other methods.

Dedicated test menus provide the option for both qualitative and quantitative results. These versatile arrays are ideal for dairy screening, providing you with the ability to accurately detect antibiotic residues, antiparasitic residues, unauthorised substances and pathogens in milk and dairy products using a single platform method. This technology ultimately provides a more informed decision on confirmatory analysis required.

Benefits

Simultaneous Detection

Multiplex testing facilitates simultaneous screening of contaminants in milk from a single undivided sample.

Excellent Sensitivity

Unrivalled multi-analyte detection of contaminants to fulfil global regulatory requirements with qualitative and quantitative formats available.

Higher Throughput

The Biochip can assess one sample in 18 minutes using the fully automated Evidence MultiSTAT, up to 48 samples in under two hours using the semi-automated Evidence Investigator and 60 in one hour with the fully automated Evidence Evolution.

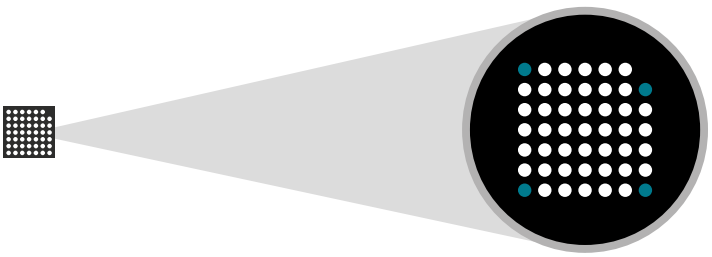
Multiplex Explained

Randox's patented Biochip Array Technology is based upon a standard competitive immunoassay format, but provides multiple results from a single sample. BAT utilises a micro-spotting technique to create a versatile array which can accommodate 44 discrete test regions (DTRs). Each DTR is coated with a single high quality, engineered antibody which is used to detect the presence of multiple compounds (for example the InfiniPlex array for milk can screen up to 130 veterinary drugs providing the most comprehensive level of testing currently available to the dairy industry). Multiplex screening increases the throughput of testing, greatly reduces labour requirements and provides unrivaled test consolidation.

Key

Discrete test region

Quality control spot



7x7 Biochip surface

44 discrete test regions on each biochip for individual analytes

The Evidence Series

The Evidence Series of immunoassay analysers are powered by Biochip Array Technology and combine the latest technological advances for contaminants detection using immunoassay principles. This has resulted in the creation of three systems that allow for simultaneous quantitative or qualitative analysis. The Evidence Investigator*, the Evidence MultiSTAT and Evidence Evolution.

*AOAC Certified with Antimicrobial Array I Ultra Kit

Evidence Investigator

750 (H) x 480 (D) x 420 (W) mm

- Semi automated system
- Consolidation of testing delivers multiple test results from a single sample
- Fast analysis of up to 48 samples in under 2 hours (96 samples in 2 hours 30 minutes)
- Ideal for centralised laboratories

Evidence MultiSTAT

585 (H) x 535 (D) x 570 (W) mm

- Fully automated system including touch screen interface
- Extremely easy to use with 3 simple steps to results
- Highly accurate results in less than 18 minutes
- Ideal for processing plants, low throughput laboratories or at farm level

Evidence Evolution

1320 (H) x 1200 (D) x 1675 (W) mm

- Fully automated technology enables random and continuous access, STAT loading and batch mode
- Running up to 60 samples per hour with up to 2640 results, 36 minutes to the first result and results every minute thereafter
- Ideal for medium/high throughput laboratories

Qualitative Analysis

InfiniPlex for Milk brings the world's first screening technology that ensures dairy processors are compliant with regulations. The advanced screening array is designed to simultaneously detect up to 130 contaminants including: antibiotics, anti-inflammatories, corticosteroids, growth promoters, anti-parasitic, mycotoxins, novobiocin, melamine and cyromazine. InfiniPlex provides insight into the specific veterinary drugs administered at animal level from as little as 25µl sample of raw bovine milk.

InfiniPlex is changing the face of the global dairy industry, providing the most comprehensive screening test available in a single sample and meeting the complex market needs where competitors cannot.

Why Choose InfiniPlex?

Comprehensive and Easy to Use

43 reported DTRs and 130 analytes per Biochip can be obtained with minimal technical expertise required from the user

No Sample Preparation

25µl of milk sample is directly added to the Biochip, supplying a qualitative result for up to 130 contaminants

Drug Discrimination

Detects compounds to identify combinations of veterinary drugs used, as residues are often specific pharmaceutical product combinations

Detection of Unauthorised Substances

Including: Apramycin, Chloramphenicol, Cyromazine, Dapsone, Doxycycline, Florfenicol, Gamithromycin, Paromomycin, Tulathromycin, Phenylbutazone, Ractopamine

Compliance with EU Annex 37/2010

The InfiniPlex array offers a 98% compliance rate with all currently regulated antibiotics within the EU from a single test. The residue profile of the InfiniPlex array makes it the most comprehensive array available on the market. To compete with the power of InfiniPlex you would need to purchase and interpret 37 of our top 9 competitor's kits, still only achieving a 77% compliance within the EU.

InfiniPlex Decision Levels

Catalogue No - EV4076

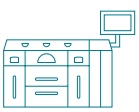
Assay (DTR)	Drug Residue	Decision Level
Quinolones	Enrofloxacin	12.50
	Ciprofloxacin	13.80
	Danofloxacin	11.30
	Difloxacin	20.00
	Marbofloxacin	22.50
	Oxolinic Acid	15.00
	Flumequine	22.50
Beta-Lactams	Benzylpenicillin	0.88
	Ampicillin	2.00
	Dicloxacillin	2.00
	Amoxicillin	2.40
	Cloxacillin	1.30
	Oxacillin	1.40
	Nafcillin	3.00
	Cefalonium	0.35
	Cefoperazone	3.80
	Cefapirin	5.00
	Cefquinome	6.30
	Ceftiofur	25.00
	Cefacetril	10.00
	Cefazolin	18.00
	Penicillin V	0.15
	Desacetylcefapirin	3.75
Cefalexin	Cefalexin	23.00
Erythromycin	Erythromycin	2.50
	Gamithromycin	32.00
	Tulathromycin	50.00
	Oleandomycin	60.00
Spiramycin	Spiramycin	52.00
	Neospiramycin	56.00
Tylosin	Tylosin A	7.50
	Tilmicosin	50.00
Lincomycin	Lincomycin	6.50
Pirlimycin	Pirlimycin	11.00
Streptomycin	Streptomycin	32.00
	Dihydrostreptomycin	20.00

Assay (DTR)	Drug Residue	Decision Level
Gentamicin	Gentamicin	22.00
Neomycin	Neomycin	9.00
	Paromomycin	3.00
	Framycetin	7.50
Kanamycin	Kanamycin A	4.00
Spectinomycin	Spectinomycin	3.00
Amphenicols	Chloramphenicol	0.22
	Florfenicol	0.40
	Thiamphenicol	1.60
Trimethoprim	Trimethoprim	13.00
Baquiloprim	Baquiloprim	3.00
Rifaximin	Rifaximin	1.00
Apramycin	Apramycin	6.00
Virginiamycin	Virginiamycin M1	0.75
Tobramycin	Tobramycin	7.00
Tetracyclines	Chlortetracycline	16.30
	Tetracycline	10.00
	Oxytetracycline	18.80
	Doxycycline	50.00
Polymixins	Colistin	1.30
	Polymixin B	0.50
Bacitracin	Bacitracin	2.00
Cefuroxime	Cefuroxime	8.50
5-hydroxy Flunixin	5-OH Flunixin	0.25
	Flunixin	0.36
Meloxicam	Meloxicam	6.00
Metamizole	4-methylaminoantipyrin	42.00
	Metamizole (Dipyrone)	24.00
Phenylbutazone	Phenylbutazone	1.25
	Oxyphenbutazone	1.50
Methylprednisolone	Methylprednisolone	0.40
	Prednisolone	1.40

Assay (DTR)	Drug Residue	Decision Level
Tolfenamic Acid	Tolfenamic Acid	1.60
Chlormadinone	Chlormadinone	1.20
Sulphaguanidine	Sulphaguanidine	50.00
Sulphamethazine	Sulphamethazine (Sulphadimidine)	1.20
	Sulphamerazine	25.00
	Sulphamoxol	174.00
Sulphapyridine	Sulphapyridine	0.90
	Sulphaethoxypyridazine	30.00
	Sulphamethoxypyridazine	30.00
	Sulphamoxol	28.50
	Sulphasalazine	1.20
	Sulphanitran	60.00
	Sulphathiazole	50.00
	Sulphamonomethoxine	80.00
Dapsone	Dapsone	1.70
	Sulphathiazole	70.00
	Sulphadoxine	100.00
	Sulphadimethoxine	7.00
	Sulphanitran	210.00
	Sulphapyridine	200.00
	Sulphaquinoxaline	5.00
	Sulphamerazine	25.00
	Sulphamonomethoxine	48.00
	Sulphadiazine	60.00
	Sulphamethoxypyridazine	85.00
	Sulphamethizole	50.00
	Sulphameter	10.00
	Sulphaisomidine	16.00
	Sulphamethazine	30.00
	Sulphaethoxypyridazine	120.00
	Sulphamethoxazole	100.00
Melamine	Melamine	200.00
	Cyromazine	27.00
Nitroxynil	Nitroxynil	1.50
Aflatoxin M1	Aflatoxin M1	0.038
Novobiocin	Novobiocin	12.50

Assay (DTR)	Drug Residue	Decision Level
Hygromycin B	Hygromycin B	7.50
Dexamethasone	Dexamethasone	0.20
	Betamethasone	2.50
Sulphonamides	Sulphathiazole	24.00
	Sulphaquinoxaline	4.50
	Sulphadimethoxine	1.60
	Sulphacetamide	2.40
	Sulphadoxine	2.50
	Sulphabenzamide	0.56
	Sulphamethoxazole	1.60
	Sulphamonomethoxine	0.76
	Sulphachlorpyridazine	1.80
	Sulphadiazine	14.00
	Sulphamethoxypyridazine	40.00
	Sulphisoxazole	0.75
	Sulphamerazine	22.00
	Sulphamethizole	6.00
	Sulphameter	6.00
	Sulphamoxol	88.00
	Sulphanitran	46.00
	Sulphaphenazole	4.60
	Sulphatroxazole	0.75
	Sulphisomidine	13.00
	Sulphaethoxypyridazine	30.00
	Sulphapyridine	110.00
Ractopamine	Ractopamine	0.32

Available on



Assay Time - 36mins

Assay Time - 2hrs

Assay Time - 18mins

Quantitative Analysis

Each Investigator biochip kit is provided with 6 biochip carriers which allows up to 45 samples to be screened in under 2 hours (96 samples in 2 hours 30 minutes). Biochip Array Technology offers high levels of sensitivity and accuracy matched with quantifiable results. Consolidated screening reduces preparation and analysis times, whilst still providing the same trusted results.

Evidence Investigator

750 (H) x 480 (D) x 420 (W) mm

- Semi automated system
- Consolidation of testing delivers multiple test results from a single sample
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- Ideal for centralised laboratories

Evidence Evolution

1320 (H) x 1200 (D) x 1675 (W) mm

- Fully automated technology enables random and continuous access, STAT loading and batch mode
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The Anthelmintic Array

Randox Food Diagnostics recognise the global need to test for regulated veterinary drug residues. The Anthelmintic Array provides the only reliable, comprehensive test for the detection of residues of anti-parasitic veterinary drugs on the market, including; benzimidazoles, avermectins and other analytes listed below.

Anthelmintics

Catalogue No - EV3770

Accessories - Milk Prep Kit (EV3776)

Sample Prep - 1hr

Assay Time - Under 2 hours

Assay (DTR)	LOD	Drug Residue	%CR
Benzimidazoles	1.00	Albendazole*	100
		Albendazole Sulphoxide	99
		Albendazole Sulphone	178
		Fenbendazole	10
		Oxfendazole (Fenbendazole Sulphoxide)	40
		Oxibendazole	48
		Mebendazole	18
		Oxfendazole sulphone (Fenbendazole Sulphone)	14
		Hydroxy Mebendazole	1
		Flubendazole	29
		Hydroxy Flubendazole	2
		Parbendazole	30
		Carbendazim	10
Amino Benzimidazoles	0.30	Albendazole 2-amino sulphone*	100
		Amino-flubendazole	99
		Amino-mebendazole	141
Thiabendazole	0.50	Thiabendazole*	100
		5-hydroxythiabendazole	91
		Cambendazole	800
Triclabendazole	0.60	Triclabendazole*	100
		Triclabendazole Sulphoxide	40
		Triclabendazole Sulphone	1
		Keto-triclabendazole	150
Levamisole	2.00	Levamisole*	100
Moxidectin	1.60	Moxidectin*	100
Avermectins	0.75	Ivermectin*	100
		Abamectin	178
		Doramectin	75
		Emamectin Benzoate	254
		Eprinomectin	191

*Each LOD standardised to this compound

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Antimicrobial Array I ULTRA

Catalogue No - EV3843

Accessories - Milk Prep Kit (EV3776)

Sample Prep - 10mins

Assay Time - Under 2 hours

Assay (DTR)	LOD	Drug Residue	%CR
Sulphadimethoxine	0.60	Sulphadimethoxine*	100
		Sulphamonomethoxine	1.7
Sulphadiazine	0.50	Sulphadiazine*	100
Sulphadoxine		Sulphadoxine*	100
Sulphamethoxazole	0.50	Sulphamethoxazole*	100
		Sulphamethizole	92
		Sulphachlorpyridazine	12.1
Sulphachlorpyridazine	0.50	Sulphachlorpyridazine*	100
		Sulphamethizole	1.2
Sulphamethoxypyridazine	0.50	Sulphamethoxypyridazine*	100
		Sulphaethoxypyridazine	56
		Sulphachlorpyridazine	2.1
Sulphamerazine	0.50	Sulphamerazine*	100
		Sulphadiazine	4.8
Sulphisoxazole	0.50	Sulphisoxazole*	100
		Sulphachlorpyridazine	2.9
Sulphathiazole	0.50	Sulphathiazole*	100
		Sulphadiazine	6.2
		Sulphapyridine	1.5
Sulphamethazine	2.50	Sulphamethazine*	100
		Sulphamerazine	1.9
Sulphaquinoxaline	0.50	Sulphaquinoxaline*	100
Sulphapyridine	0.50	Sulphapyridine *	100
		Sulphasalazine	12.9
		Sulphamethoxypyridazine	3.4
		Sulphathiazole	1.6
Trimethoprim	0.5	Trimethoprim*	100
Dapsone	0.5	Dapsone*	100
Sulphamonomethoxine	2.00	Sulphamonomethoxine*	100

*Each LOD standardised to this compound

Antimicrobial Array II Plus

Catalogue No - EV4169 A/B

Accessories - Milk Prep Kit (EV3776)

Sample Prep - 10mins

Assay Time - Under 2 hours

Assay (DTR)	LOD	Drug Residue	%CR
Quinolones	1.00	Norfloxacin*	100
		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	1.50	Ceftiofur*	100
		Desfuroylceftiofur	92
Thiamphenicol	0.50	Florfenicol*	100
		Thiamphenicol	53
Streptomycin	2.00	Streptomycin*	100
		Dihydrostreptomycin	99
Tylosin	2.50	Tylosin*	100
		Tilmicosin	37
Tetracyclines	1.00	Tetracycline*	100
		4-epitetracycline	87
		Rolitetracycline	67
		4-epioxytetracylcine	52
		Oxytetracycline	52
		Chlortetracycline	51
		Demeclocycline	41
		Doxycycline	23
		4-epichlortetracycline	20
		Methacycline	11

*Each LOD standardised to this compound

Antimicrobial Array III CAP only

Catalogue No - EV3738

Accessories - Milk Prep Kit (EV3776)

Sample Prep - 10mins

Assay Time - Under 2 hours

Assay (DTR)	LOD	Drug Residue	%CR
Chloramphenicol	0.04	Chloramphenicol*	100
		Chloramphenicol Glucuronide	75.1

*Each LOD standardised to this compound

Beta Lactams Plus

Catalogue No - EV3957 A/B

Accessories - Milk Prep Kit (EV3776)

Sample Prep - 10mins

Assay Time - Under 2 hours

Assay (DTR)	LOD	Drug Residue	%CR
Beta Lactams	0.75	Ampicillin*	100
	0.80	Amoxicillin	59
	3.00	Cloxacillin	52
	3.00	Dicloxacillin	70
	18.00	Nafcillin	6
	3.00	Oxacillin	47
	0.40	Penicillin G	388
	0.40	Penicillin V	246
	12.50	Cefacetril	7
	10.00	Cefazolin	6
	5.00	Cefoperazone	105
	2.00	Cefquinome	12
	20.00	Ceftiofur	11
	2.00	Cephalonium	237
	6.00	Cefapirin	81
	100.00	Cephalexin	1
Cephalexin	0.30	Cephalexin*	100
		Cefadroxil	39.4
Cefuroxime	1.25	Cefuroxime*	100

*Each LOD standardised to this compound

Protecting Animal Health

Randox would like to introduce our new bovine pathogen array. Providing simultaneous antibody detection against some of the world's most economically important infectious agents:

- Bovine Viral Diarrhoea
- Bovine Herpesvirus I
- Paratuberculosis
- Leptospirosis
- Salmonella (S.Dublin and S. Typhimurium)
- Neospora Caninum
- Fasciola Hepatica

Benefits

Enhanced Surveillance

Increased efficiency at producer level with the ability to simultaneously detect antibodies against this extensive array of bovine pathogens

Superior Diagnostic Capacity

Detection of subclinical and co-infected animals differentiation between vaccination and natural infection (DIVA* capacity) from a single sample

Test Consolidation

Streamlined laboratory organisation with reduced labour, turnaround time and assay costs as all tests are performed simultaneously

*where feasible

Local Engineers. Global Coverage

Randox Food Diagnostics provide customers with an unrivalled support service. A team of highly trained specialists are on-hand to deal with any technical and service issues you may have.

Global Offices

We have 25 international offices acting as direct points of contact for customers

100+ Specialists

Randox has over 100 engineers and tech support specialists placed around the world to ensure an efficient response to customer requests

350

Scientists

Randox has 350 scientists placed around the world, dedicated to providing a quality product offering

Global Distributors

We have official Randox Food Diagnostics technical distributors in over 100 countries

Aftercare

We offer the ultimate after-care support with tailored service packages to suit your available budget

Notes

RANDOX HEALTH

GRAND NATIONAL

500+

laboratories using Randox Food Diagnostics technology

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