



**RANDOX**  
TOXICOLOGY

# Drugs of Abuse Arrays

Rapid multiplex testing from a single sample

Evidence  
Evidence Investigator  
Evidence MultiStat  
Evidence Evolution



# Randox Drugs of Abuse Arrays simultaneously detect multiple drug classes in a single sample using the unique multiplexing Biochip Array Technology.

## Randox Drugs of Abuse Arrays are suitable for a wide range of settings including:

- Anti-Doping Laboratories
- Police/Crime Laboratories
- Workplace Drug testing
- Clinical Laboratories
- Forensic Toxicology Laboratories
- Research Laboratories
- Sports testing
- Veterinary testing



## Key Benefits

- Simultaneous detection of multiple drug classes in a single sample.
- Applicable to different sample types - urine, whole blood, oral fluid, vitreous humour, post-mortem blood, forensic matrices, tissue and meconium.
- Small sample volume – as little as 7µl for multiple results.
- Kits for whole blood eliminate the need for lengthy extraction procedures.
- Separate detection of amphetamine, methamphetamine and MDMA.
- Two test sites for benzodiazepines on DoA I and DoA I+ allow discrimination of oxazepam and lorazepam with cross-reactivities for other benzodiazepines including phenazepam.
- Broad recognition of barbiturates.
- Broad recognition of tricyclic antidepressants on DoA I+.
- Different test sites for oxycodone and other opioids on DoA II to increase potential information from the screening tests.
- Excellent correlation with confirmatory methods.
- Excellent assay performance, user defined cut-off levels and ready-to-use biochips – saving time and resources.

### Drugs of Abuse Array I (DoA I)

Amphetamine	Cocaine metabolite
Methamphetamine	(Benzoylcegonine)
Barbiturates	Methadone
Benzodiazepine 1	Opiates
Benzodiazepine 2	Phencyclidine
Cannabinoids	Creatinine*

### Drugs of Abuse Array I Plus (DoA I+)

Amphetamine	MDMA
Methamphetamine	Methadone
Barbiturates	Opiates
Benzodiazepine 1	Phencyclidine
Benzodiazepine 2	Tricyclic Antidepressants
Buprenorphine	TCA's (generic)
Cannabinoids	Creatinine*
Cocaine metabolite	
(Benzoylcegonine)	

### Drugs of Abuse Array II (DoA II)

Buprenorphine	Methaqualone
Fentanyl	Oxycodone 1
Generic Opioids	Oxycodone 2
Ketamine	Propoxyphene
LSD	Creatinine*
MDMA	

\* Creatinine included as a dilution marker in urine

### Sample types

Urine	Vitreous Humour
Whole Blood	Meconium
Oral Fluid	Forensic Matrices
Post-mortem Blood	
Tissue	

## Drugs of Abuse Array I Performance Data Outline

### Application for Oral Fluid on Evidence Investigator analyser

#### Precision data

Analyte	Intra-assay precision (n=20)	
	Level 1 % CV	Level 2 % CV
Amphetamine	7.9	5.5
Methamphetamine	5.5	4.8
Barbiturates	6.0	5.0
Benzodiazepine 1	6.3	9.3
Benzodiazepine 2	5.7	4.7
Cannabinoids	8.1	9.3
Cocaine metabolite (Benzoylecgonine)	6.0	3.9
Methadone	7.1	8.7
Opiates	9.0	6.4
Phencyclidine	13.8	15.1

09/375/DO

## Drugs of Abuse Array I Plus Performance Data Outline

### Application for Urine on Evidence analyser

Cross-reactivity (CR) of tricyclic antidepressants assay profile at a 100ng/ml cut-off

TCA assay			
Compound	%CR	Compound	%CR
Nortriptyline	100	Amitriptyline	71.8
Imipramine N Oxide	1335.7	Doxepin	71.4
Opipramol	386	Protryptiline	62.6
Trimipramine	375	Promazine	60.9
Imipramine	217.4	Dothiepin	39.4
Cyclobenzaprine	170.6	Maprotiline	28.3
Desipramine	131.2	Cyproheptidine	20.2

10/055, 163/358, 08/224/EA, 07/069, 089, 091, 097, 102, 103, 107, 175/EA, 03/348/DA

### Application for Urine kit on Evidence analyser

Overall average % agreement with GC/MS

DoA I (urine)	
Overall average % agreement with GC/MS	90.3

### Application for Whole Blood on Evidence analyser

Sensitivity

Assay	LOD (neat sample) (ng/ml)
Amphetamine	6.40
Barbiturates	6.34
Benzodiazepine 1	1.47
Benzodiazepine 2	1.16
Buprenorphine	0.30
Cannabinoids	3.94
Cocaine Metabolite (Benzoylecgonine)	0.29
MDMA	7.72
Methadone	0.63
Methamphetamine	27.00
Opiates	0.37
Phencyclidine	0.38
Tricyclic Antidepressants (TCAs generic)	4.22

10/337/DB, 10/04/498, 10/385/DB, 10/412/DB

## Drugs of Abuse Array II Performance Data Outline

### Application for Urine on Evidence analyser

Cross-reactivity (CR) of Oxycodone 1, 2 and Generic Opioids compounds at a 100ng/ml cut-off.

Compound	Oxycodone 1 (%CR)	Oxycodone 2 (%CR)	Generic Opioids (%CR)
Oxycodone	100.0	100.0	100.0
Noroxycodone	17.5	<0.1	<0.1
Oxymorphone	<0.1	4.3	4.0
Hydromorphone	<0.1	0.2	125.5
Ethylmorphine	0	<0.1	958.4
Codeine	0.1	3.0	284.3
Hydrocodone	23.1	4.1	2224.9
Morphine	<0.1	<0.1	10.9
Thebaine	0.1	7.7	18.5
Levorphanol	<0.1	<0.1	20.1
Norcodeine	<0.1	<0.1	5.8
Morphine-3B-D-Glucuronide	<0.1	<0.1	3.8
Normorphine	0	0	8.2
Heroin	<0.1	<0.1	12.3
6 Monoacetylmorphine	<0.1	0.6	5.0
Dihydrocodeine	<0.2	1.4	129.5

07/069, 089, 091, 097, 102, 103, 107, 175, 4/EA, 08, 224, DA

### Application for Whole Blood on Evidence analyser

Precision

Assay	Intra-assay Precision (n-20)		
	Level 1 (%CV)	Level 2 (%CV)	Level 3 (%CV)
Buprenorphine	3.1	4.7	4.3
Fentanyl	5.1	4.6	6.6
Generic Opioids	4.4	3.7	4.4
Ketamine	7.2	7.2	6.3
LSD	8.5	8.8	8.3
Methaqualone	6.1	6.6	6.1
MDMA	5.7	4.2	5.8
Oxycodone 1	3.3	2.5	4.1
Oxycodone 2	4.5	3.5	5.4
Propoxyphene	6.2	10.0	8.9

05/058/EB



## Evidence

The Evidence, a fully automated analyser, is the world's first protein Biochip Array Technology system and is suitable for higher throughput laboratories.

Description	360 Biochips		180 Biochips	
	Description	Cat. No	Description	Cat. No
DoA Array I	Urine qualitative	EV3500	Urine qualitative	EV3542
	Whole Blood semi-quantitative	EV3612	Whole Blood semi-quantitative	EV3615
	Oral fluid (forensic use only)	EV3613	Oral fluid (forensic use only)	EV3616
	Urine semi-quantitative (forensic use only)	EV3635		
	Urine semi-quantitative	EV3611	Urine semi-quantitative	EV3614
DoA Array I Plus	Urine	EV3742	Urine	EV3743
	Whole Blood	EV3747	Whole Blood	EV3748
DoA Array II	Urine	EV3655	Urine	EV3654
	Whole blood (forensic use only)	EV3685	Whole Blood	EV3686



## Evidence Investigator

The Evidence Investigator is a semi-automated analyser suitable for small to medium sized laboratories.

Description	Description	Cat. No
DoA Array I	Urine qualitative	EV3512
	Whole Blood semi-quantitative	EV3618
	Oral fluid (forensic use only)	EV3619
	Urine semi-quantitative	EV3617
	Urine semi-quantitative (forensic use only)	EV3636
DoA Array I Plus	Urine	EV3746
	Whole Blood	EV3751
DoA Array II	Urine	EV3662
	Whole Blood	EV3681



## Evidence MultiStat

The Evidence MultiStat is a compact benchtop system for laboratory quality results near the site of patient care. It is suitable for emergency departments, doctors surgeries, forensic laboratories and rehabilitation clinics.

Description	Description	Cat. No
DoA Array	Urine	EV3715
	Whole Blood	EV3732
DoA Array I Plus	Urine	EV3777



## Evidence Evolution

The Evidence Evolution is the world's first random access biochip testing platform with advanced STAT testing capabilities, suited to large laboratories. The Evidence Evolution offers complete system integration, with the most comprehensive test menu on the market.

Multi-analyte controls and calibrators are available

# RANDOX TOXICOLOGY

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