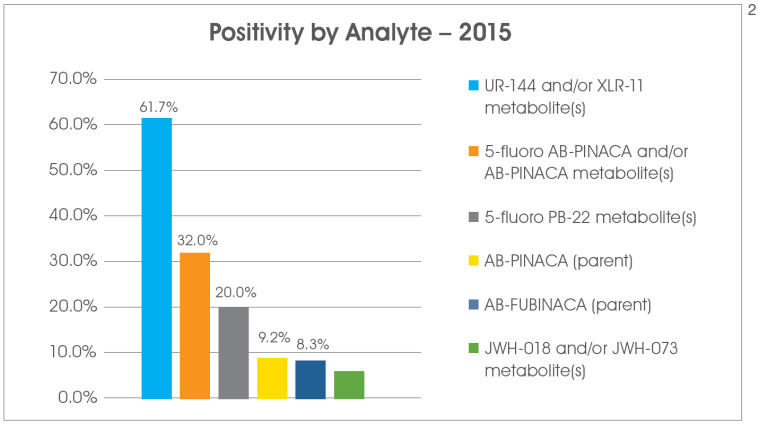
Synthetic Cannabinoids

Urine HEIA® Drug Screening Kits

Immunalysis now offers three distinct synthetic cannabinoid homogeneous enzyme immunoassays for the detection of synthetic cannabinoids in urine. Our assays, geared towards the detection of JWH-018, JWH-073, AM-2201, UR-144, XLR-11 and their metabolites, are now complemented by a new assay targeted at the next generation, AB-PINACA and ADB-PINACA compounds found in the current Spice or K2 products. Together, these assays detect Schedule I controlled substances and provide the most comprehensive screening tool for your automated chemistry analyzer.

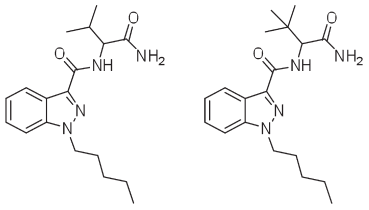
Prevalence: Over the past few years, synthetic cannabinoids have emerged as the most frequently detected group of designer drugs with an overall positive rate averaging 10% in 400,000 urine samples tested from the US criminal justice population.[1]



[2]

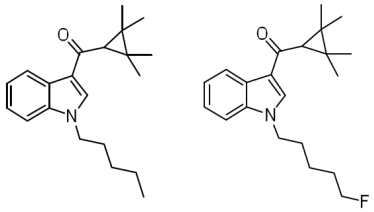
Synthetic Cannabinoids

K2-3



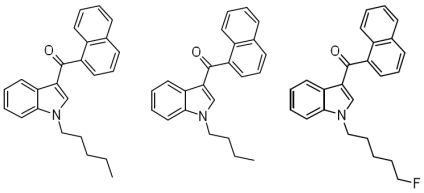
AB-PINACA ADB-PINACA

K2-2



UR-144 XLR-11

K2-1



JWH-018 JWH-073 AM-2201

- Liquid stable and ready to use
- Rapid, cost-effective screening solution
- Three distinct HEIA kits designed for qualitative testing with 10 ng/mL cutoff

1. Rana, S., Uralets, V. & Ross, W. (2013, Sept). Emerging Designer Drugs—To Regulate or Not To Regulate? Presented at the annual meeting of The International Association of Forensic Toxicologists, Madeira, Portugal.
2. Data provided by Redwood Toxicology Laboratory (2015).

Synthetic Cannabinoids-3 Urine HEIA® Drug Screening Kit

For the detection of AB-PINACA, ADB-PINACA, and their major metabolites

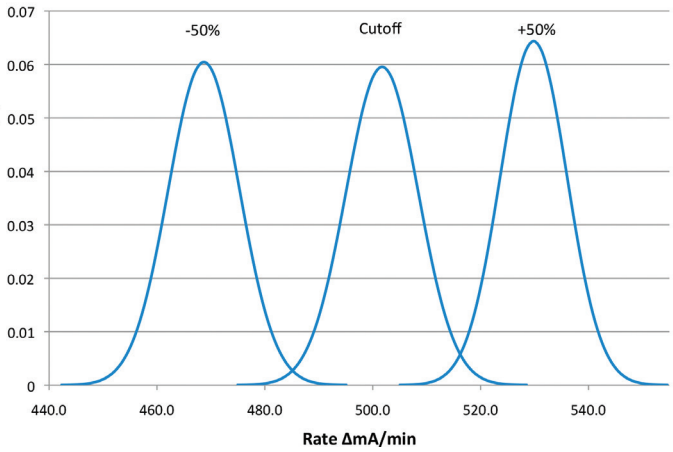
Assay Specifications

Methodology: Homogeneous enzyme immunoassay
Cutoff: 10 ng/mL
Calibrator: AB-PINACA pentanoic acid

Sensitivity: 100%
Specificity: 100%
Accuracy: 100%

		LC-MS/MS Confirmation (10 ng/mL)	
		Positive	Negative
HEIA (10 ng/mL)	Positive	40	0
	Negative	0	40

Overlap: AB-PINACA pentanoic acid (10 ng/mL cutoff)



Cross-Reactivity at 10 ng/mL

Analyte	Analyte Concentration (ng/mL)	AB-PINACA Pentanoic Acid Equivalents (ng/mL)	Cross-Reactivity (%)
AB-PINACA pentanoic acid	10	10	100
AB-PINACA	10	10	100
AB-PINACA N-(4-hydroxypentyl)	8	10	125
AB-PINACA N-(5-hydroxypentyl)	10	10	100
5-fluoro AB-PINACA	8	10	125
5-fluoro ABICA	20	10	50
5-fluoro ADBICA	12	10	83
5-fluoro AB PINACA N-(4-hydroxypentyl)	15	10	67
5-fluoro ADB-PINACA	9	10	111
5-chloro AB-PINACA	15	10	67
ADB-PINACA pentanoic acid	7	10	143
ADB-PINACA N-(4-hydroxypentyl)	8	10	125
ADB-PINACA N-(5-hydroxypentyl)	6	10	167
AB-FUBINACA	10	10	100
ADB-FUBINACA	10	10	100
ADBICA	20	10	50
ADBICA N-pentanoic acid	15	10	67
ADBICA N-(4-hydroxypentyl)	15	10	67
ADBICA N-(5-hydroxypentyl)	12	10	83
AB-CHMINACA	15	10	67

The following compounds produced N.Dresults at 100,000 ng/mL: AM2201 6-hydroxyindole, AM2201, JWH-007, JWH-015, JWH-019, JWH-022, JWH-073, JWH-081, JWH-122, JWH-398, JWH-018 4-hydroxyindole, JWH-018 5-hydroxyindole, JWH-073 N-butanoic acid, JWH-073 6-hydroxyindole, JWH-073 N-4-hydroxybutyl, 3-1-napthyl-1H-indole, BB-22, BB-22 3-carboxyindole, PB-22, PB-22 N-5-hydroxypentyl, PB-22 pentanoic acid, UR-144-N-heptyl, JWH-250 5-hydroxyindole, RCS-4-2 methoxy isomer, AM-2233.

Qualitative Precision at 10 ng/mL

Interday Precision (N = 80)		
Concentration	**Mean Absorbance (mAbs/min)**	**C.V.%**
5 ng/mL (control LOW)	469	1.4
10 ng/mL calibrator	502	1.3
15 ng/mL (control HIGH)	530	1.2

Order - Synthetic Cannabinoids-3 (HEIA)

Catalog Number	Description
350-0025	25 mL kit
350-0060W	60 mL wedge kit
350-0100	100 mL kit
350-0500	500 mL kit
10030-5	10 ng/mL calibrator
3012-5	5 and 15 ng/mL controls
Neg-10-1	10 mL negative reference calibrator

The charts and data provided above were generated in studies conducted by Immunalysis Corporation. This information is intended to be representative of the performance of the assay. Refer to the product insert for a full description of the performance characteristics for qualitative testing. For forensic use only.

Synthetic Cannabinoids-2 Urine HEIA® Drug Screening Kit

For the detection of UR-144, XLR-11, and their major metabolites

Assay Specifications

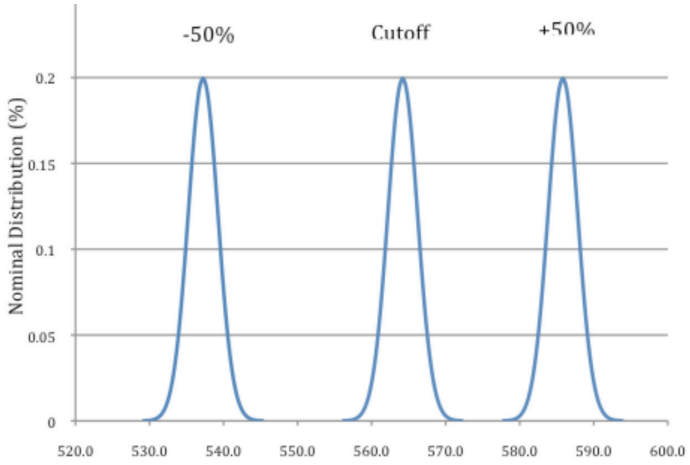
Methodology: Homogeneous enzyme immunoassay
Cutoff: 10 ng/mL
Calibrator: UR-144 N-pentanoic acid

Sensitivity: 96%
Specificity: 100%
Accuracy: 98%

		LC-MS/MS Confirmation (10 ng/mL)	
		Positive	Negative
HEIA (10 ng/mL)	Positive	24	0
	Negative	1*	40

*Result was qualitative on the LC-MS/MS; numerical value unavailable.

Overlap: UR-144 N-pentanoic acid (10 ng/mL cutoff)



Cross-Reactivity at 10 ng/mL

Analyte	Analyte Concentration (ng/mL)	UR-144 N-pentanoic Acid Equivalents (ng/mL)	Cross-Reactivity (%)
UR-144 N-pentanoic acid	10	10	100
UR-144	20	10	50
UR-144 N-(5-hydroxypentyl) -β-D-glucuronide	30	10	33
UR-144 N-(5-bromopentyl)	25	10	40
UR-144 N-(5-chloropentyl)	20	10	50
UR-144 N-heptyl	40	10	25
UR-144 N-(5-hydroxypentyl) metabolite	20	10	50
XLR-11	20	10	50
XLR-11 N-(4-pentenyl)	20	10	50
XLR-11 N-(4-hydroxypentyl) metabolite	70	10	14
AB-005	30	10	33
A-834735	20	10	50
JWH-250 N-(5-hydroxypentyl) metabolite	20,000	10	0.05
RCS-4-2 methoxy isomer	10,000	10	0.10
JWH-018 N-(5-hydroxypentyl) metabolite	3,000	10	0.3
AM-2233	10,000	10	0.10
A-796260	30	10	33

The following compounds produced N.D. results at 100,000 ng/mL: 1-Naphthoyl indole, 3-1 napthoyl-1H-indole, AM-2201, AM2201-6-hydroxyindole metabolite, AM-2201-N-4-hydroxypentyl metabolite, AM-2232, BB-22, BB-22 3-carboxyindole, JWH-007, JWH-018, JWH-018 4-hydroxyindole, JWH-018 5-hydroxyindole, JWH-018 N(5-hydroxypentyl β-d-glucuronide, JWH-018 pentanoic acid, JWH-019, JWH-022, JWH-073, JWH-073 6-hydroxyindole metabolite, JWH-073 N-butanoic acid, JWH-081, JWH-122, JWH-201, JWH-210, JWH-250, JWH-250 5 hydroxyindole metabolite, PB 22, PB 22 N (5Hydroxypentyl) metabolite, and PB 22 pentanoic acid.

The following compounds produced N.D. results at 50,000ng/mL: Cannabipiperidiethanone, JWH-250-N(4-hydroxypentyl) metabolite and JWH-250-N(5-carboxypentyl) metabolite
N.D. = Cross-reactivity is less than 0.05%.

Qualitative Precision at 10 ng/mL

Interday Precision (N = 80)		
Concentration	**Mean Absorbance (mAbs/min)**	**C.V.%**
5 ng/mL (control LOW)	562	0.9
10 ng/mL calibrator	584	0.9
15 ng/mL (control HIGH)	600	1.0

Order - Synthetic Cannabinoids-2 (HEIA)

Catalog Number	Description
346-0025	25 mL kit
346-0060W	60 mL wedge kit
346-0100	100 mL kit
346-0500	500 mL kit
C346-5-1	10 ng/mL calibrator
C346-5-2	5 and 15 ng/mL controls
Neg-10-1	10 mL negative reference calibrator

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Synthetic Cannabinoids-1 Urine HEIA® Drug Screening Kit

For the detection of JWH-018, JWH-073, AM-2201, and their major metabolites

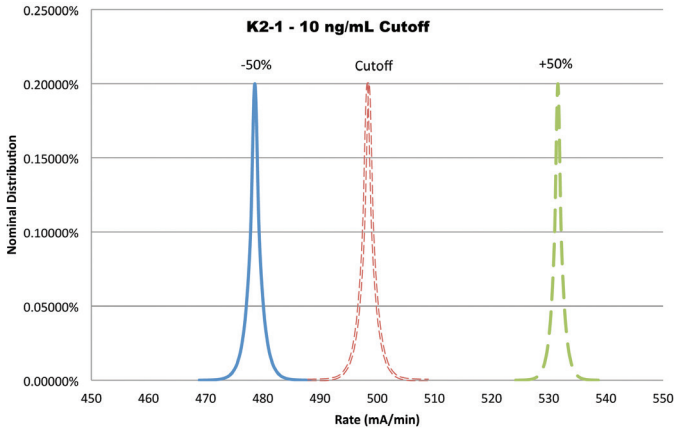
Assay Specifications

Methodology: Homogeneous enzyme immunoassay
Cutoff: 10 ng/mL
Calibrator: JWH-018 N-pentanoic acid

Sensitivity: 100%
Specificity: 87.5%
Accuracy: 96.9%

		LC-MS/MS Confirmation (10 ng/mL)	
		Positive	Negative
HEIA (10 ng/mL)	Positive	50	0
	Negative	0	14

Overlap: JWH-018 N-pentanoic acid (10 ng/mL cutoff)



Cross-Reactivity at 10 ng/mL

Analyte	Analyte Concentration (ng/mL)	Cross-Reactivity (%)
JWH-018 N-pentanoic acid	10	100
JWH-018 N-(5-hydroxypentyl)	15	66.7
WH-018 4-hydroxyindole	135	7.4
JWH-018 5-hydroxyindole	40	25.0
AM-2201 N-(4-hydroxypentyl)	12	83.3
AM-2201 6-hydroxyindole	20	50.0
JWH-073 N-(4-hydroxybutyl)	13	76.9
JWH-073 6-hydroxyindole	16	62.5
JWH-073 N-butanoic acid	20	50.0
JWH-007	42	23.8
JWH-015	25	40.0
JWH-018	20	50.0
JWH-019	40	25.0
JWH-022	15	66.7
JWH-073	15	66.7
JWH-081	3,000	0.3
JWH-122	100	10.0
JWH-200	12	83.3
JWH-201	100,000	N/D
JWH-250	4,000	0.3
JWH-398	300	3.3
AM-2201	15	66.7
3-(1 naphthoyl)1-H-Indole	18	55.6

Qualitative Precision at 10 ng/mL

Interday Precision (N = 40)

Concentration	Result	Total Result
5 ng/mL (control LOW)	NEG	40 Negative
10 ng/mL calibrator	N/A	20 NEG / 20 POS
15 ng/mL (control HIGH)	POS	40 Positive

Order - Synthetic Cannabinoids-1 (HEIA)

Catalog Number	Description
344-0025	25 mL kit
344-0060W	60 mL wedge kit
344-0100	100 mL kit
344-0500	500 mL kit
10005	10 ng/mL calibrator
3003	5 and 15 ng/mL controls
Neg-10-1	10 mL negative reference calibrator

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