

FAST SCREENING KIT OF 1st LEVEL FOR LABELLED DRUGS OF ABUSE
in urine/hair/whole blood by LC/MS





THE ONLY

kit ready to use for Screening Tests of 1st level by LC/MS on

3 MATRICES

URINE - HAIR - WHOLE BLOOD



Morphine, Codeine, 6-Monoacetylmorphine, 3,4-MDA, 3,4-MDE, 3,4-MDMA, MBDB, Amphetamine, Metamphetamine, Benzoylcegonine, Cocaine, Methadone, EDDP, Norbuprenorphine, Buprenorphine, delta-9-THC-COOH, Cocaethylene, Ecgonine Methyl Ester, 11-OH-THC, Dihydrocodeine, Ketamine, Oxycodone, Morphine-6-beta-glucuronide, Morphine-3-beta-glucuronide, Norbuprenorphine glucuronide, Codeine-6-beta-glucuronide, THC-COOH glucuronide, Buprenorphine glucuronide



INTRODUCTION

The present method allows the semi-quantitative determination of Morphine, Codeine, 6-Monoacetylmorphine, 3,4-MDA, 3,4-MDE, 3,4-MDMA, MBDB, Amphetamine, Metamphetamine, Benzoylcegonine, Cocaine, Methadone, EDDP, Norbuprenorphine, Buprenorphine, delta-9-THC-COOH, Cocaethylene, Ecgonine Methyl Ester, 11-OH-THC, Dihydrocodeine, Ketamine, Oxycodone, Morphine-6-beta-glucuronide, Morphine-3-beta-glucuronide, Norbuprenorphine glucuronide, Codeine-6-beta-glucuronide, THC-COOH glucuronide, Buprenorphine glucuronide by LC/MS.

This method aims to present itself as an alternative to the classic methods of immunoenzymatic screening, allowing to carry out a semi-quantitative analysis on the panel of labelled substances of abuse on urinary matrix, keratin and whole blood.



STRENGHT POINTS

- + With an only kit you can analyze 3 different matrices: urine, hair, whole blood
- + Forensic Labs that have an LC/MS could use their Chromatographic systems also to do Screening tests instead of using immunoenzymatic platforms
- + It is a more specific test compared to the Immunochemical test
- + The more specificity allows you to avoid many false positive samples
- + The Method could be implemented without any problem with other molecules if the Ministry of Health requires it.

Screening and confirmation cut-off values in Urine

Substance Class or substance (screening target substance)	Screening cut-off (ng/ml)	Confirmation cut-off (ng/ml)
Opiates (free morphine) Total Morphine ^a Total Codeine ^a 6-Monoacetylmorphine	300	100 100 10
Cocaine metabolite (benzoylecgonine) Cocaine Benzoylecgonine	300	100 100
Amphetamines and congeneris Amphetamine Methamphetamine	500	200 200
3,4-Methylenedioxymethamphetamine and congeneris MDMA MDA MDEa MBDB	500	200 200 200 200
Methadone (Methadone) Methadone EDDP	300	100 100
Cannabinoids (THC-COOH) THC-COOH	50	15
Buprenorphine Total Buprenorphine ^a Total norbuprenorphine ^a	5	5 5

a- the value is reported to the sample subjected to hydrolysis (to check the efficiency of the hydrolysis reaction of morphine-3-glucuronide in the process of method validation is mandatory)

Ref. GUIDELINES FOR LABORATORIES SEARCHING FOR SUBSTANCES OF ABUSE ON BIOLOGICAL SAMPLES TAKEN FROM THE LIVING SUBJECTS WITH "TOXICOLOGICAL AND FORENSIC-MEDICAL-LEGAL PURPOSES" [Rev. n. 4, 6 December 2012 from the Scientific Association Quality Commission "Group of Italian Forensic Toxicologists" (GTFI)].

Cut-off values according to Society of Hair Testing (SOHT)

Cut-off di screening secondo le raccomandazioni SOHT			Cut-off di conferma secondo le raccomandazioni SOHT	Cut-off di conferma secondo il provvedimento 18/09/2008 sui lavoratori con mansioni a rischio
Classe di sostanza	Cut-off (ng/mg)	Analita	Cut-off (ng/mg)	Cut-off (ng/mg)
Amfetamine	0,2	Amfetamina	0,2	0,2
		Metamfetamina	0,2	0,2
		MDA	0,2	0,2
		MDMA	0,2	0,2
		MDEA	-	0,2
Cannabinoidi	0,1	THC	0,05	0,1
		THC-COOH	0,0002	-
Cocaina	0,5	Cocaina	0,5	0,2
		BEG, EME, CE, NC*	0,05	0,05
Oppiacei	0,2	Morfina	0,2	0,2
		Codeina	0,2	0,2
		6-MAM [§]	0,2	0,2
Metadone	0,2	Metadone	0,2	0,2
		EDDP	0,05	-
Buprenorfina	0,01	Buprenorfina	0,01	0,05
		Norbuprenorfina	0,01	-

* BEG: benzoilecgonina, EME: ecgoninametilestere, CE: cocaetilene, NC: norcocaina
[§] 6-MAM – 6-monoacetilmorfina

GUIDELINES FOR THE DETERMINATION OF SUBSTANCES OF ABUSE IN THE HAIR MATRIX

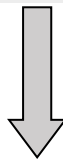
Edited by Simona Pichini and Roberta Pacifici

For blood, there are no guidelines for cut-off values for first level screening.

From recent literature, it is recommended that 10 ng/mL for cannabinoids, 20 ng/mL for opiates, methadone and cocaine class and 40 ng/mL for amphetamines be considered.

Analytical Procedure - URINE

SAMPLE DILUTION



INJECTION

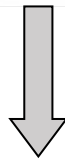


Analytical Procedure - HAIR

HAIR WASHING



HYDROLYSIS OF 1 HOUR AT 100°C

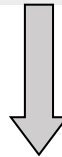


INJECTION



Analytical Procedure - WHOLE BLOOD

SAMPLE DEPROTEINIZATION



INJECTION





TO SUMMARIZE....

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“FAST SCREENING OF 1st LEVEL FOR LABELLED
DRUGS OF ABUSE in urine/hair/whole blood by LC/MS”

allows

- ✚ With an only kit to analyze 3 different matrices: urine, hair, whole blood
- ✚ Forensic Labs that have an LC/MS to use their Chromatographic systems also to do Screening tests, instead of using immunoenzymatic platforms.
- ✚ To reach a higher specificity than Immunochemical tests
- ✚ To avoid many false positive samples thanks to higher specificity
- ✚ The lab to implement the method with other molecules if the Ministry of Health requires it.

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Produced by

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