OPI

cobas®

ONLINE DAT Opiates 300/2000

Drug abuse testing

Order information

REF	CONTENT		Analyzers on which **cobas c** pack can be used
20767158 122	ONLINE DAT Opiates 300/2000 (200 tests)	System-ID 07 6715 8	COBAS INTEGRA 400 plus COBAS INTEGRA 800
03304671 190	Preciset DAT Plus I CAL 1-6 (6 × 5 mL)		
03304680 190	Preciset DAT Plus II CAL 1-6 (6 × 5 mL)		
03304698 190	C.f.a.s. DAT Qualitative Plus (6 × 5 mL)		
04590856 190	C.f.a.s. DAT Qualitative Plus Clinical (3 × 5 mL)		
03312950 190	Control Set DAT I (for 2000 ng/mL assay) PreciPos DAT Set I (2 × 10 mL) PreciNeg DAT Set I (2 × 10 mL)		
03312968 190	Control Set DAT II (for 300 ng/mL assay) PreciPos DAT Set III (2 × 10 mL) PreciNeg DAT Set III (2 × 10 mL)		
04500873 190	Control Set DAT Clinical (for 300 ng/mL assay) PreciPos DAT Clinical (2 × 10 mL) PreciNeg DAT Clinical (2 × 10 mL)		

English

System information

Test OPIS, test-ID 0-406 for semiquantitative assay (4 calibrators), 300 ng/mL

Test OPIS6, test-ID 0-407 for semiquantitative assay (6 calibrators), 300 ng/mL

Test OPI2S, test-ID 0-409 for semiquantitative assay (6 calibrators), 2000 ng/mL

Test OPI3Q, test-ID 0-408 for qualitative assay, 300 ng/mL

Test OP2QL, test-ID 0-410 for qualitative assay, 2000 ng/mL

Test OP3QC, test-ID 0-526 for qualitative assay, 300 ng/mL, using C.f.a.s. DAT Qualitative Plus Clinical

Intended use

Opiates 300/2000 (OPI) is an in vitro diagnostic test for the semiquantitative and qualitative detection of morphine and its metabolites in human urine at cutoff concentrations of 300 ng/mL and 2000 ng/mL on COBAS INTEGRA systems. Semiquantitative test results may be obtained that permit laboratories to assess assay performance as part of a quality control program. Semiquantitative assays are intended to determine an appropriate dilution of the specimen for confirmation by a confirmatory method such as gas chromatography/mass spectrometry (GC/MS).

Opiates 300/2000 provides only a preliminary analytical test result. A more specific alternate chemical method must be used in order to obtain a confirmed analytical result. GC/MS is the preferred confirmatory method.[1] Clinical consideration and professional judgement should be applied to any drug of abuse test result, particularly when preliminary positive results are used.

Summary

Morphine, a natural product of the opium poppy, is a narcotic analgesic used for centuries as a medicine for the relief of severe pain. Extracted from opium obtained from the poppy's resin, morphine may, in turn, be further chemically refined to heroin (the more potent, diacetylated analog of the parent drug). These chemically similar "opiates" reduce sensitivity to physical and psychological stimuli, dulling pain, fear and anxiety. Users are usually lethargic and indifferent. Accompanying effects may include constriction of the pupils, itching, constipation, nausea, vomiting, and respiratory depression. Death by overdose, usually resulting from dose miscalculation or dose strength variability, is caused by respiratory failure.[2,3,4]

The opiates are usually administered intravenously or subcutaneously, but may also be smoked or sniffed. Upon entering the circulation, they tend to concentrate in the lungs, spleen, kidneys and liver; lower concentrations are found in the body's musculature and central nervous system. A variety of pathways are involved in the body's detoxification of the opiates, including the removal of chemical side groups (dealkylation), addition of hydroxyl groups, hydrolytic breakdown, and conjugation to glucuronic acid (a common body sugar).[5] Morphine is excreted in the urine as morphine-3-glucuronide, unchanged free morphine, and other minor metabolites. Although some opiate metabolites appear in the bile and feces, urinary excretion is the primary route of elimination.[1,6]

The opiates produce strong physical dependence; withdrawal symptoms can begin to appear within a few hours of the last dose and may continue for 5 to 10 days. The addict may pursue continued opiate use as much to avoid the discomfort of withdrawal as to achieve the desired insensate euphoria.[7,8]

Test principle

Kinetic interaction of microparticles in a solution (KIMS)[9,10] as measured by changes in light transmission.

In the absence of sample drug, soluble drug conjugates bind to antibody-bound microparticles, causing the formation of particle aggregates. As the aggregation reaction proceeds in the absence of sample drug, the absorbance increases.

When a urine sample contains the drug in question, this drug competes with the drug derivative conjugate for microparticle-bound antibody. Antibody bound to sample drug is no longer available to promote particle aggregation, and subsequent particle lattice formation is inhibited. The presence of sample drug diminishes the increasing absorbance in proportion to the concentration of drug in the sample. Sample drug content is determined relative to the value obtained for a known cutoff concentration of drug.[11]

Reagents - working solutions

R1 Conjugate Reagent

Conjugated morphine derivative in buffer with BSA and 0.09 % sodium azide.

SR Antibody/Microparticle Reagent

Microparticles coated with morphine antibody (mouse monoclonal) in buffer with BSA and 0.09 % sodium azide.

R1 is in position B and SR is in position C.

Precautions and warnings

Pay attention to all precautions and warnings listed in Section 1 / Introduction of this Method Manual.

For USA: Caution: Federal law restricts this device to sale by or on the order of a physician.

Reagent handling

COBAS INTEGRA 400 plus analyzer

Mix all new (non-punctured) **cobas c** packs for 1 minute on a cassette mixer before loading on the analyzer. All in-use **cobas c** packs must also be mixed in the same manner at the beginning of each week (once a week).

COBAS INTEGRA 800 analyzer

Ready for use. After **cobas c** pack puncture, the analyzer automatically mixes the reagent for 1 minute and for half a minute during Begin of Day.

Storage and stability

Shelf life at 2-8 °C:	See expiration date on **cobas c** pack label
COBAS INTEGRA 400 plus analyzer	
On-board in use at 10-15 °C	12 weeks
COBAS INTEGRA 800 analyzer	
On-board in use at 8 °C	26 weeks

Do not freeze reagents. Reagents that have been frozen should be discarded.

Specimen collection and preparation

Only the specimens listed below were tested and found acceptable.

Urine: Collect urine samples in clean glass or plastic containers. Fresh urine specimens do not require any special handling or pretreatment, but an effort should be made to keep pipetted samples free of gross debris. Samples should be within the normal physiological pH range of 5-8. No additives or preservatives are required. It is recommended that urine specimens be stored at 2-8 °C and tested within 5 days of collection.[12]

For prolonged storage, freezing of the sample is recommended.

Centrifuge highly turbid specimens before testing.

Adulteration or dilution of the sample can cause erroneous results. If adulteration is suspected, another sample should be collected. Specimen validity testing is required for specimens collected under the *Mandatory Guidelines for Federal Workplace Drug Testing Programs*.[13]

Caution: Specimen dilutions should only be used as an estimation for GC/MS and are not intended for patient values. Dilution procedures, when used, should be validated.

Materials provided

See "Reagents – working solutions" section for reagents.

Assay

For optimum performance of the assay follow the directions given in this document for the analyzer concerned. Refer to the appropriate operator's manual for analyzer-specific assay instructions.

Application for urine

COBAS INTEGRA 400 plus test definition

300 ng/mL cutoff		*Semiquantitative*	*Qualitative*
Measuring mode		Absorbance	Absorbance
Abs. calculation mode		Endpoint	Endpoint
Reaction mode		R1-S-SR	R1-S-SR
Reaction direction		Increase	Increase
Reaction start		SR	SR
Wavelength A		552 nm	552 nm
Test range	*OPIS*	0-600 ng/mL	0-4000
	OPIS6	0-2000 ng/mL	
with postdilution	*OPIS*	0-6000 ng/mL	
	OPIS6	0-20000 ng/mL	
Postdilution factor		10 recommended[a)]	No
Calc. first/last		33/57	33/57
Unit		ng/mL	

a) For use when estimating concentration in preparation for GC/MS analysis.

Pipetting parameters		Diluent (H_2O)
R1	97 µL	0 µL
Sample	8.5 µL	2 µL
SR	47 µL	0 µL
Total volume	154.5 µL	

2000 ng/mL cutoff	*Semiquantitative*	*Qualitative*
Measuring mode	Absorbance	Absorbance
Abs. calculation mode	Endpoint	Endpoint
Reaction mode	R1-S-SR	R1-S-SR
Reaction direction	Increase	Increase
Reaction start	SR	SR
Wavelength A	552 nm	552 nm
Test range	0-8000 ng/mL	0-4000
with postdilution	0-80000 ng/mL	
Postdilution factor	10 recommended[b)]	No
Calc. first/last	33/57	33/57
Unit	ng/mL	

b) For use when estimating concentration in preparation for GC/MS analysis.

Pipetting parameters		Diluent (H_2O)
R1	97 µL	0 µL
Sample	2.5 µL	2 µL
SR	47 µL	0 µL
Total volume	148.5 µL	

COBAS INTEGRA 800 test definition

300 ng/mL cutoff		*Semiquantitative*	*Qualitative*
Measuring mode		Absorbance	Absorbance
Abs. calculation mode		Endpoint	Endpoint
Reaction mode		R1-S-SR	R1-S-SR
Reaction direction		Increase	Increase
Reaction start		SR	SR
Wavelength A		552 nm	552 nm
Test range	*OPIS*	0-600 ng/mL	0-4000
	OPIS6	0-2000 ng/mL	
with postdilution	*OPIS*	0-6000 ng/mL	
	OPIS6	0-20000 ng/mL	
Postdilution factor		10 recommended[c)]	No
Calc. first/last		44/98	44/98
Unit		ng/mL	

c) For use when estimating concentration in preparation for GC/MS analysis.

Pipetting parameters			Diluent (H_2O)	
R1		102 µL	5 µL	
Sample		8 µL	2 µL	*OPIS*
		8 µL	5 µL	*OPIS6, OPI3Q, OP3QC*
SR		48 µL	5 µL	
Total volume	*OPIS*	170 µL		
	OPIS6, OPI3Q, OP3QC	173 µL		

2000 ng/mL cutoff	*Semiquantitative*	*Qualitative*
Measuring mode	Absorbance	Absorbance
Abs. calculation mode	Endpoint	Endpoint
Reaction mode	R1-S-SR	R1-S-SR
Reaction direction	Increase	Increase
Reaction start	SR	SR
Wavelength A	552 nm	552 nm

Test range	0-8000 ng/mL	0-4000
with postdilution	0-80000 ng/mL	
Postdilution factor	10 recommended[d)]	No
Calc. first/last	44/98	44/98
Unit	ng/mL	

d) For use when estimating concentration in preparation for GC/MS analysis.

Pipetting parameters		Diluent (H_2O)
R1	102 µL	5 µL
Sample	2 µL	5 µL
SR	48 µL	5 µL
Total volume	167 µL	

Calibration

Calibrators

Semiquantitative applications

OPIS, 0-406 Preciset DAT Plus II calibrators, CAL1-4
0, 150, 300, 600 ng/mL morphine
(300 cutoff, DATS7, system-ID 07 6795 6)

OPIS6, 0-407 Preciset DAT Plus II calibrators, CAL1-6
0, 150, 300, 600, 1000, 2000 ng/mL morphine
300 cutoff, (DATS8, system-ID 07 6796 4)

OPI2S, 0-409 Preciset DAT Plus I calibrators, CAL1-6
0, 600, 1000, 2000, 4000, 8000 ng/mL morphine
(2000 cutoff, DATS2, system-ID 07 6764 6)

Qualitative applications

OPI3Q, 0-408 Preciset DAT Plus II calibrators, CAL 1
0 ng/mL *or* deionized water
and
Preciset DAT Plus II calibrators, CAL 3
300 ng/mL
(300 cutoff, DATQ3, system-ID 07 6770 0)

For qualitative applications, the cutoff of 300 ng/mL is assigned a value of 1000.

OP2QL, 0-410 Preciset DAT Plus I calibrators, CAL 1
0 ng/mL *or* deionized water
and
C.f.a.s. DAT Qualitative Plus
2000 ng/mL
(2000 cutoff, DATQ1, system-ID 07 6744 1)

For qualitative applications, the cutoff of 2000 ng/mL is assigned a value of 1000.

OP3QC, 0-526 Preciset DAT Plus I or II calibrators, CAL 1
0 ng/mL *or* deionized water
and
C.f.a.s. DAT Qualitative Plus Clinical
300 ng/mL
(300 cutoff, DATQ5, system-ID 07 6880 4)

For qualitative applications, the cutoff of 300 ng/mL is assigned a value of 1000.

Calibration mode

Semiquantitative applications
Logit/Log 4

Qualitative applications
Linear regression

Calibration replicate: Duplicate recommended

Calibration interval

COBAS INTEGRA 400 plus analyzer:
Each lot, every 4 weeks, and as required following quality control procedures

COBAS INTEGRA 800 analyzer:

OPIS, OPIS6, OPI2S:
Each lot, every 8 weeks, and as required following quality control procedures

OPI3Q, OP2QL, OP3QC:
Each lot, every 6 weeks, and as required following quality control procedures

Calibration interval may be extended based on acceptable verification of calibration by the laboratory.

A calibration curve is generated using the calibrators. Calibrators must be placed from the highest concentration first to the lowest last on the CAL/QC rack. This curve is retained in memory by the COBAS INTEGRA system and recalled for later use.

Traceability: This method has been standardized against a primary reference method (GC/MS).

Quality control

Quality control

300 ng/mL cutoff

Control Set DAT II

PreciPos DAT Set II
(DAT2P, system-ID 07 6771 9)

PreciNeg DAT Set II
(DAT2N, system-ID 07 6772 7)

or

Control Set DAT Clinical

PreciPos DAT Clinical
(DATCP, system-ID 07 6879 0)

PreciNeg DAT Clinical
(DATCN, system-ID 07 6878 2)

2000 ng/mL cutoff

Control Set DAT I

PreciPos DAT Set I
(DAT1P, system-ID 07 6753 0)

PreciNeg DAT Set I
(DAT1N, system-ID 07 6754 9)

Control sequence: User defined

Control after calibration: Recommended

For quality control, use control materials as listed in the “Order information” section. In addition, other suitable control material can be used.

Drug concentrations of Control Set DAT I, II, and Clinical have been verified by GC/MS.

The control intervals and limits should be adapted to each laboratory’s individual requirements. Values obtained should fall within the defined limits. Each laboratory should establish corrective measures to be taken if values fall outside the defined limits.

Follow the applicable government regulations and local guidelines for quality control.

Results

COBAS INTEGRA systems report results with the following test flags.

Semiquantitative result reporting
OPIS (300 ng/mL cutoff)

Flag	COBAS INTEGRA	Value range
No flag	Negative	< 300 ng/mL
<TEST RNG	Negative	< 0 ng/mL

Flag	COBAS INTEGRA	Value range
>TEST RNG	Positive	> 600 ng/mL
POS 300	Positive	≥ 300 ng/mL

Value ranges listed above are based on a cutoff value of 300 ng/mL.

OPIS6 (300 ng/mL cutoff)

Flag	COBAS INTEGRA	Value range
No flag	Negative	< 300 ng/mL
<TEST RNG	Negative	< 0 ng/mL
>TEST RNG	Positive	> 2000 ng/mL
POS 300	Positive	≥ 300 ng/mL

Value ranges listed above are based on a cutoff value of 300 ng/mL.

OPI2S (2000 ng/mL cutoff)

Flag	COBAS INTEGRA	Value range
No flag	Negative	< 2000 ng/mL
<TEST RNG	Negative	< 0 ng/mL
>TEST RNG	Positive	> 8000 ng/mL
POS 2000	Positive	≥ 2000 ng/mL

Value ranges listed above are based on a cutoff value of 2000 ng/mL.

Qualitative result reporting
OPI3Q, OP3QC (300 ng/mL cutoff)

Flag	COBAS INTEGRA	Value range
No flag	Negative	< 1000
<TEST RNG	Negative	< 0
>TEST RNG	Positive	> 4000
POS 1000	Positive	≥ 1000

Value ranges above are based on assigning the cutoff of 300 ng/mL a value of 1000.

OP2QL (2000 ng/mL cutoff)

Flag	COBAS INTEGRA	Value range
No flag	Negative	< 1000
<TEST RNG	Negative	< 0
>TEST RNG	Positive	> 4000
POS 1000	Positive	≥ 1000

Value ranges above are based on assigning the cutoff of 2000 ng/mL a value of 1000.

Semiquantitative result reporting

The semiquantitation of preliminary positive results should only be used by laboratories to determine an appropriate dilution of the specimen for confirmation by a confirmatory method such as GC/MS. It also permits the laboratory to establish quality control procedures and assess control performance.

Note: When using the post-dilution function (1:10 dilution), to ensure the sample was not over-diluted, the diluted result must be at least half the analyte cutoff value times 10. If the diluted result falls below half the analyte cutoff value times 10, repeat the sample with a smaller dilution. A dilution that produces a result closest to the analyte cutoff is the most accurate estimation. To estimate the preliminary positive sample's concentration, multiply the result by the appropriate dilution factor. Dilutions should only be used as an estimation for GC/MS.

Limitations - interference

See the "Specific performance data" section of this document for information on substances tested with this assay. Reports in the literature indicate that the ingestion of food containing poppy seeds may cause positive test results due to the natural content of morphine in poppy seeds. When present in sufficient quantity, this “poppy seed morphine” can be detected by all chemical and immunological assays for morphine. There is the possibility that other substances and/or factors may interfere with the test and cause erroneous results (e.g., technical or procedural errors).

A preliminary positive result with this assay indicates the presence of morphine and its metabolites in urine. It does not measure the level of intoxication.

Urine levels of $MgSO_4$ greater than 625 mg/dL (51.9 mmol/L) were found to interfere with the assay.

For diagnostic purposes, the results should always be assessed in conjunction with the patient’s medical history, clinical examination and other findings.

ACTION REQUIRED

Special Wash Programming: The use of special wash steps is mandatory when certain test combinations are run together on COBAS INTEGRA analyzers. Refer to the CLEAN Method Sheet for further instructions and for the latest version of the Extra wash cycle list.
Where required, special wash/carry-over evasion programming must be implemented prior to reporting results with this test.

Specific performance data

Representative performance data on the COBAS INTEGRA analyzers are given below. Results obtained in individual laboratories may differ.

Precision

Precision was determined in an internal protocol using a series of morphine controls in replicates of 20 for 5 runs. The following results were obtained on a COBAS INTEGRA 700 analyzer.

Semiquantitative precision (300 ng/mL cutoff)

Repeatability	150 ng/mL	240 ng/mL	300 ng/mL	360 ng/mL	600 ng/mL	1000 ng/mL
Mean ng/mL	142	236	296	357	583	927
SD	4.8	5.4	5.2	8.0	11.5	27.4
CV %	3.4	2.3	1.8	2.2	2.0	3.0

Intermediate precision	150 ng/mL	240 ng/mL	300 ng/mL	360 ng/mL	600 ng/mL	1000 ng/mL
Mean ng/mL	142	236	298	360	590	951
SD	6.7	9.7	9.3	11.1	17.7	40.9
CV %	4.8	4.1	3.1	3.1	3.0	4.3

Semiquantitative precision (2000 ng/mL cutoff)

Repeatability	600 ng/mL	1000 ng/mL	1600 ng/mL	2000 ng/mL	2400 ng/mL	4000 ng/mL
Mean ng/mL	612	1030	1620	1982	2350	3851
SD	25.5	24.0	32.5	32.9	51.7	113.8
CV %	4.2	2.3	2.0	1.7	2.2	3.0

Intermediate precision	600 ng/mL	1000 ng/mL	1600 ng/mL	2000 ng/mL	2400 ng/mL	4000 ng/mL
Mean ng/mL	593	1008	1634	2011	2389	3892
SD	31.2	31.0	44.9	55.8	66.3	146.5
CV %	5.3	3.1	2.7	2.8	2.8	3.8

Qualitative precision
300 ng/mL cutoff

Cutoff (x)	Number tested	Correct results	Confidence level
0.8x (240 ng/mL)	100	100	> 95 % negative reading
1.2x (360 ng/mL)	100	100	> 95 % positive reading

2000 ng/mL cutoff

Cutoff (x)	Number tested	Correct results	Confidence level
0.8x (1600 ng/mL)	100	100	> 95 % negative reading
1.2x (2400 ng/mL)	100	100	> 95 % positive reading

Lower detection limit of the test

49 ng/mL (300 ng/mL cutoff assay)
374 ng/mL (2000 ng/mL cutoff assay)

The lower detection limit represents the lowest measurable analyte level that can be distinguished from zero. It is calculated as the value lying 2 standard deviations above that of the zero calibrator (zero calibrator + 2 SD, repeatability, n = 50).

Accuracy

100 urine samples, obtained from a clinical laboratory where they screened negative in a drug test panel by another technology, were evaluated for morphine and its metabolites on a COBAS INTEGRA 700 analyzer. All 100 samples were negative relative to the 300 and 2000 ng/mL cutoffs.

50 urine samples, obtained from clinical laboratories where they screened preliminary positive by a commercially available enzyme immunoassay and confirmed positive for morphine and its metabolites by GC/MS were also evaluated on a COBAS INTEGRA 700 analyzer. All 50 samples were positive with the COBAS INTEGRA Opiates 300/2000 assay relative to the 300 and 2000 ng/mL cutoffs.

300 ng/mL cutoff

		GC/MS	
		+	–
COBAS INTEGRA 700 analyzer	+	50	0
	–	0	0

2000 ng/mL cutoff

		GC/MS	
		+	–
COBAS INTEGRA 700 analyzer	+	50	0
	–	0	0

Analytical specificity

The specificity of the COBAS INTEGRA Opiates 300/2000 assay was determined by generating inhibition curves for each of the compounds listed and determining the approximate quantity of each compound that is equivalent in assay reactivity to the 300 ng/mL and 2000 ng/mL assay cutoffs. All data were obtained using the COBAS INTEGRA 400 analyzer, unless otherwise specified.

Compound	Approximate ng/mL equivalent to 300 ng/mL of morphine	Approximate percent cross-reactivity
Codeine	233	129
Dihydrocodeine	324	93
Ethylmorphine	333	90
6-Acetylmorphine	359	84
Dihydromorphine	449	67
Diacetylmorphine[e)]	462	65
Morphine-3-glucuronide	721	42
Hydrocodone	734	41
Thebaine	767	39
Hydromorphone	924	32
Oxycodone	46575	0.6
Meperidine	62337	0.5
n-Norcodeine	72078	0.4
Fentanyl	175000	0.2

e) tested on the COBAS INTEGRA 700 analyzer only

Compound	Approximate ng/mL equivalent to 2000 ng/mL of morphine	Approximate percent cross-reactivity
Codeine	1517	132
Ethylmorphine	2177	92
Dihydrocodeine	2224	90
6-Acetylmorphine	2246	89
Diacetylmorphine[f)]	3030	66
Dihydromorphine	3919	51
Morphine-3-glucuronide	5398	37
Hydromorphone	5734	35
Thebaine	5737	35
Hydrocodone	6118	33
n -Norcodeine	551941	0.4
Oxycodone	461613	0.4
Meperidine	644767	0.3
Fentanyl	3000000	0.07

f) tested on the COBAS INTEGRA 700 analyzer only

Drug interference

The following compounds were added to aliquots of pooled normal human urine at a concentration of 100000 ng/mL. None of these compounds gave values in the assay that were equal to or greater than 0.5 % cross reactivity. All data were obtained using the COBAS INTEGRA 700 analyzer.

Acetaminophen
Acetylsalicylic acid
Aminopyrine
Amitriptyline
Amobarbital
d-Amphetamine
l-Amphetamine
Ampicillin
Ascorbic acid
Aspartame
Atropine
Benzocaine
Benzoylecgonine (cocaine metabolite)
Benzphetamine
Butabarbital
Caffeine
Calcium hypochlorite
Cannabidiol
Chlordiazepoxide
Guaiacol glycerol ether
Hydrochlorothiazide
Ibuprofen
Imipramine
Isoproterenol
Ketamine
Lidocaine
LSD
Melanin
Methadone
d-Methamphetamine
Methaqualone
Methylphenidate
Methyprylon
Mianserin
Naloxone
Naltrexone
Naproxen
Niacinamide
Norethindrone

Chloroquine	*l*-Norpseudoephedrine
Chlorpheniramine	Oxazepam
Chlorpromazine	Penicillin G
Clomipramine	Pentobarbital
Cocaine	Phencyclidine
Desipramine	Phenobarbital
Dextromethorphan	Phenothiazine
Dextropropoxyphene	Phenylbutazone
Diazepam	Phenylpropanolamine
Diphenhydramine	Procaine
Diphenylhydantoin	Promazine
Dopamine	Promethazine
Ecgonine	*d*-Pseudoephedrine
Ecgonine methyl ester	*l*-Pseudoephedrine
d-Ephedrine	Quinidine
d,l-Ephedrine	Quinine
l-Ephedrine	Secobarbital
Epinephrine	Sulindac
Erythromycin	Tetracycline
Estriol	Tetrahydrozoline
Fenoprofen	Δ^9 THC-9-carboxylic acid
Furosemide	Trifluoperazine
Gentisic acid	Verapamil
Glutethimide	

The cross-reactivity for Rifampin was tested with the COBAS INTEGRA Opiates 300/2000 assay. The results obtained were 10 % and 14 % for the 300 ng/mL and 2000 ng/mL cutoffs, respectively.

Any modification of the instrument as set forth in this labeling requires validation by the laboratory.

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A point (period/stop) is always used in this Method Sheet as the decimal separator to mark the border between the integral and the fractional parts of a decimal numeral. Separators for thousands are not used.

Symbols

Roche Diagnostics uses the following symbols and signs in addition to those listed in the ISO 15223-1 standard (for USA: see https://usdiagnostics.roche.com for definition of symbols used):

CONTENT	Contents of kit
→	Volume after reconstitution or mixing
GTIN	Global Trade Item Number

FOR US CUSTOMERS ONLY: LIMITED WARRANTY

Roche Diagnostics warrants that this product will meet the specifications stated in the labeling when used in accordance with such labeling and will be free from defects in material and workmanship until the expiration date printed on the label. THIS LIMITED WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. IN NO EVENT SHALL ROCHE DIAGNOSTICS BE LIABLE FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES.

CE

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