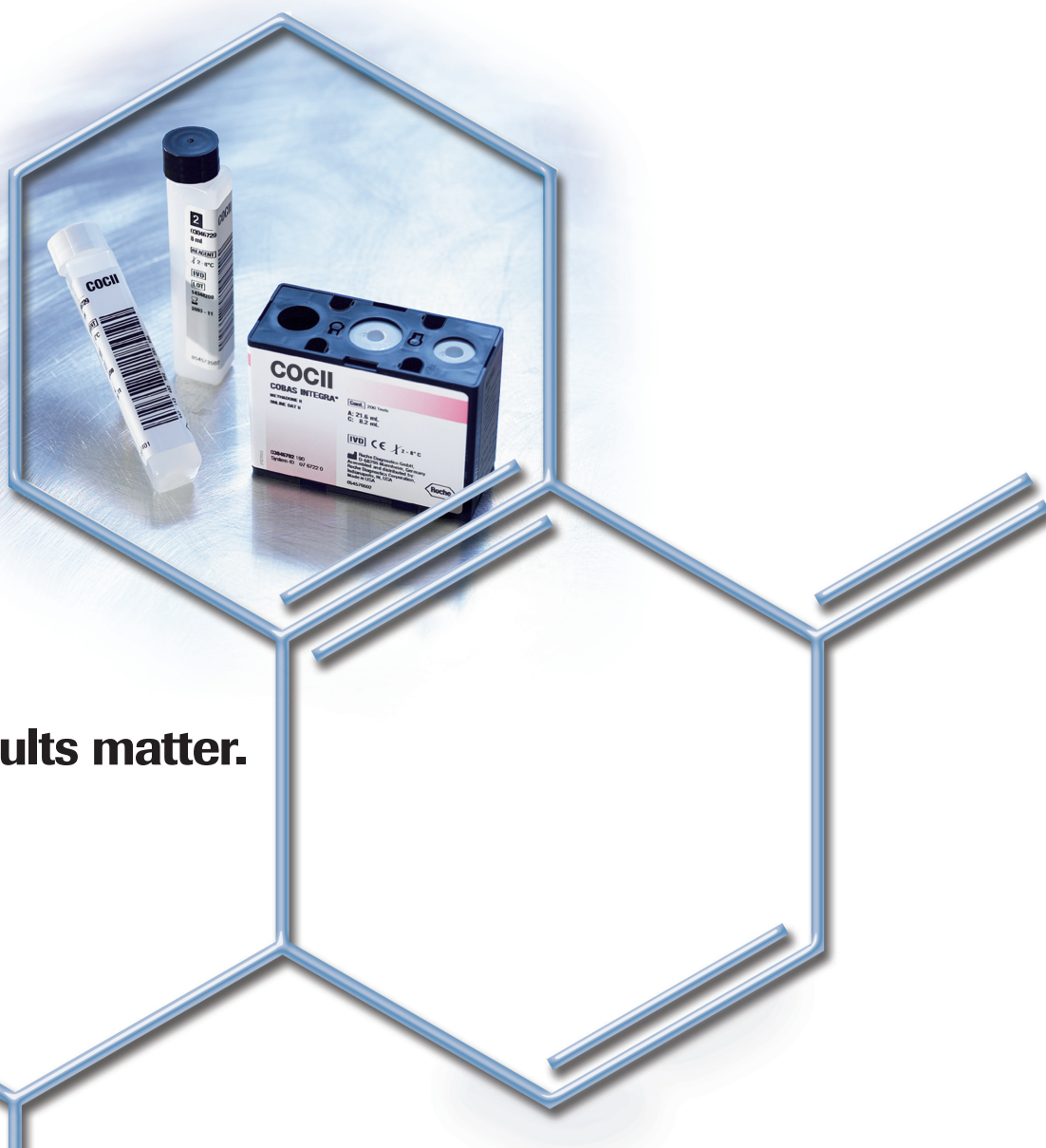


OnLine DAT Cross-reactivity Booklet Version 2.0

From tough questions to reliable answers.



Results matter.

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Revision History

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Publication Reference Number	Date	Revision purpose
04508084001 Version 1.0	August 2004	Document creation
04508084002 Version 1.1	January 2006	Updated entire document for corporate standards
2585-00-0510 Version 2.0	May 2010	• Updated with Amphetamines II, DRI Oxycodone, DRI Methadone Metabolite, and the cobas c analyzers. • R/Hitachi Barbiturate, Benzodiazepine, Propoxyphene, and PCP were deleted. • COBAS MIRA was removed.

The following pages are a compilation of the cross-reactivity information provided in the package inserts of the Abuscreen® OnLine Automated Assays and the OnLine DAT II assays. Information from additional studies performed by Roche Diagnostics per the request of our valued customers which may not appear in the package inserts is also included. The tables list the highest level tested; however, this does not mean that there was interference at a higher level.

Experiments were not always run on all platforms. Compounds were tested on the COBAS INTEGRA, Roche/Hitachi and/or **cobas c** analyzers. The specific instrument used is not indicated where extrapolation between applications was considered reasonable.

Please consider the following when interpreting a DAT screen result:

- The data is based on studies on parent compounds, typically at 100,000 ng/mL
- The cross-reactivity of any metabolites is an unknown
- The concentrations of parent drug and its metabolites in a urine specimen are subject to all the variables of pharmacokinetics, dosage, and the client's state of hydration.

Please note that drug screens provide only preliminary analytical test results. A more specific alternate chemical method such as gas chromatography/mass spectrometry (GC/MS) must be used in order to obtain a confirmed analytical result. GC/MS is the preferred confirmatory method. Clinical consideration and professional judgment should be applied to any drug of abuse test result, particularly when preliminary positive results are used.

This list is current at the time of printing; however, Roche Diagnostics reserves the right to update this information as part of ongoing product development. For the latest information, contact the Roche Diagnostics Technical Support at 1-800-428-2336.

Thank you for your continued interest in Roche Diagnostics products and services.

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Amphetamines on the COBAS INTEGRA, Roche/Hitachi, and cobas c analyzers: Cross-reactivity with Structurally Unrelated Compounds

For Amphetamines, none of the compounds listed gave a positive response relative to the 1000 ng/mL cutoff. The compounds were tested at a concentration of 100,000 ng/mL. The data applies to all systems, unless noted it applies only to the COBAS INTEGRA (I), Roche/Hitachi (H), or **cobas c** (C) analyzers.

OTC means Over The Counter, pharmaceuticals commonly available without prescription.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
N-acetylprocainamide	NAPA
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil / Limbitrol
Amobarbital	Amytal
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Bendroflumethiazide I	Naturetin
Benzatropine	Cogentin
Benzocaine	OTC/analgesic
Benzoyllecgonine	Cocaine metabolite
Benzphetamine	Didrex
Bromhexine	–
Butabarbital	Butisol
Caffeine	OTC/ stimulant
Calcium hypochlorite	Hypochlorous Acid
Carbamazepine I	Tegretol
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Clarithromycin	Biaxin
Cocaine	Cocaine / crack
Codeine	Empracet
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Dopamine	–
Doxepin I	Doxetel
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenoprofen	Nalfon
Flecainide	Tambocor
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaicol glycerol ether	OTC/Guaifenesin

I = COBAS INTEGRA

H = Roche/Hitachi

metab = metabolite

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Generic Name	Trade Name* or Use
Hydrochlorothiazide	Aldoril
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Levofloxacin I	Levaquin
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
Mefloquine H	Larium
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
Methaqualone	Quaalude
Methyl dopa I	Aldomet
Methylphenidate	Ritalin
Methypylon	–
Morphine	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nordoxepin I	Sinequan or Adapin/Doxepin metab
Nordiazepam H	Nordaz
Norethindrone	Norlutate
Olanzapine	Zyprexa
Oxazepam	Serax
Penicillin G	Bicillin
Pentazocine I	Talwin
Pentobarbital	Nembutal
Phencyclidine	PCP
Phenobarbital	Donnata/Luminal
Phenothiazine	Trilafon
Phenylbutazone	Butazolidin
Procaine	Novocain
Promethazine	Phenergan
Quinidine	Duraquin
Quinine	–
Secobarbital	Seconal
Sulindac	Clinoril
Tetracycline	Sumycin
Δ^9 THC-9-carboxylic acid	THC
Tetrahydrozoline	OTC eye drops, Visine
Trazodone	Desyrel
Trifluoperazine	Stelazine
Verapamil	Calan

Amphetamines on the COBAS INTEGRA, Roche/Hitachi, and cobas c analyzers: Additionally Tested

At 100,000 ng/mL, tested as parent compound, the following compounds had a cross-reactivity of less than 0.1% on the COBAS INTEGRA and the **cobas c** analyzers, and less than 0.2% cross-reactivity on the Roche/Hitachi analyzers:

<i>d</i> -Ephedrine	<i>d</i> -Pseudoephedrine	<i>d,l</i> -Ephedrine	Mephentermine	I
<i>l</i> -Norpseudoephedrine	<i>l</i> -Ephedrine	3-Hydroxytyramine	I	<i>l</i> -Pseudoephedrine
Phendimetrazine	I	Phentermine	I	<i>d</i> -Phenylpropanolamine

At the concentrations shown, none of these compounds, tested as the parent compound, interfered with the Amphetamines assay.

Generic Name	Trade Name*	Level Tested
Albuterol	Salbutamol	6 mg/mL
Brompheniramine	–	2.5 mg/mL
Bupropion	Wellbutrin	1 mg/mL
Carbamazepine	Tegretol	1 mg/mL
Cetirizine	Zyrtec	2.1 mg/mL
Cetylpyridinium Cl	–	5 mg/mL
Clozapine	Clozaril	2 mg/mL
Diethylpropion	–	5 mg/mL
Diltiazem	–	10 mg/mL
Dipyrrone	Metamizol	2.5 mg/mL
Fenfluramine	Pondimin	1 mg/mL
Fluoxetine	Prozac	1 mg/mL
Gemfibrozil	Lopid	2 mg/mL
Labetalol	–	1 mg/mL
Loratadine	Claritin	volunteer sample
Melatonin	–	2 mg/mL
Minoxidil	Rogaine	1.5 mg/mL
Nalbuphine	Nubain	1 mg/mL
Omeprazole	Prilosec	5 mg/mL
Phendimetrazine	–	1 mg/mL
Promethazine	Phenergan	1 mg/mL
Sulfamethoxazole	in Bactrim	3 mg/mL
Terfenadine	Seldane	5 mg/mL
Azacyclonal	–	1.5 mg/mL
Trazodone	Desyrel	1 mg/mL
Trimipramine	–	2 mg/mL
Trimethobenzamide	Tigan	0.5 mg/mL
Trimethoprim	in Bactrim	4 mg/mL
Venlafaxine	Effexor	4 mg/mL
Zalcitabine	DDC	2 mg/mL
Zidovudine	AZT	2 mg/mL

Indented drugs are metabolites of the preceding drug

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

I = COBAS INTEGRA

H = Roche/Hitachi

C = cobas c analyzers

Amphetamines on the COBAS INTEGRA, Roche/Hitachi, and cobas c analyzers (cobas c): Potential Interferents

The following compounds, tested as the parent compound, could potentially interfere with the Amphetamines assay:

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 1000 ng/mL <i>d</i> -Amphetamine		Approximate Percent Cross-reactivity	
		COBAS INTEGRA	Roche/Hitachi, cobas c analyzers	COBAS INTEGRA	Roche/Hitachi, cobas c analyzers
Chlorprothixene	Taractan	1,000,000	500,000	0.1	0.2
Mexiletine	Mexitil	51,100	69,700	2	1.4
Ranitidine	Zantac	333,000	250,000	0.3	0.4
Selegine ¹	Eldepryl	90,900	90,900	1.1	1.1
Sertraline	Zoloft	6,250	8,030	16	12.5

¹ Metabolizes to amphetamine

Amphetamines on the COBAS INTEGRA, Roche/Hitachi, and cobas c analyzers: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 1000 ng/mL <i>d</i> -Amphetamine		Approximate Percent Cross-reactivity	
		COBAS INTEGRA	Roche/Hitachi, cobas c analyzers	COBAS INTEGRA	Roche/Hitachi, cobas c analyzers
<i>d,l</i> -Amphetamine	–	1,756	1,650	57	61
Methylenedioxymphetamine	MDA	3,048	2,665	33	38
<i>l</i> -Amphetamine	Cydril	24,888	24,700	4.0	4
<i>p</i> -Hydroxyamphetamine	Paredrine	34,423	9,288	2.9	11
<i>B</i> -Phenethylamine	PEA	71,429	74,632	1.4	1.3
<i>l</i> -Phenylpropanolamine	–	89,767	92,451	1.1	1.1
<i>d,l</i> -Phenylpropanolamine	–	146,306	134,800	0.7	0.7
<i>d</i> -Phenylpropanolamine	Norephedrine	-	> 500,000	< 0.1	< 0.1
<i>d</i> -Methamphetamine	Desoxyn	204,082	287,000	0.5	0.3
Propylhexedrine	–	209,314	331,000	0.5	0.3
<i>p</i> -Hydroxymethamphetamine	–	213,903	476,000	0.5	0.2
<i>d,l</i> -Methamphetamine	–	217,628	580,000	0.5	0.2
Methylenedioxymethamphetamine MDMA	Ecstasy	248,756	697,000	0.4	0.1
<i>l</i> -Methamphetamine	Vicks Inhaler	272,480	> 750,000	0.4	< 0.09
Tyramine	Uteramin	299,850	487,000	0.3	0.2
<i>l</i> -Phenylephrine	I	558,659	-	0.2	-
<i>l</i> -Pseudoephedrine	–	917,431	-	0.1	< 0.2
Phentermine	Ionanin	-	> 750,000	< 0.1	< 0.08
Phendimetrazine	–	-	> 750,000	< 0.1	< 0.07

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Amphetamines II on the Roche/Hitachi and cobas c analyzers: Cross-reactivity with Structurally Unrelated Compounds

Tested at 100,000 ng/mL, with Amphetamines II assay at the 300, 500, and 1000 ng/mL cutoffs. At these cutoffs, on the Roche/Hitachi and **cobas c** analyzers, none of the compounds gave values in the assay that were greater than 0.17% (170 ng/mL).

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC / analgesic
Benzoylgonine	Cocaine metabolite
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Cannabidiol	–
Captopril	–
Chlordiazepoxide	Librium
Cocaine	Cocaine/crack
Codeine	Empracet
Desipramine HCL	–
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Digoxin	–
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	Phenytoin/Dilantin
Doxepin	Doxetel
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
Enalapril	–
Erythromycin	Eryped
Estriol	–
Fenoprofen	Nalfon
Flurbiprofen	–
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril
Hydroxyindole acetic acid	–

Generic Name	Trade Name* or Use
Hydroxyindole carboxylic acid	–
Ibuprofen	OTC/analgesic
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
L-thyroxine	Levothyroxine
Meperidine	Demerol
Methadone	Dolophine
Methaqualone	Quaalude
Methypylon	–
Morphine sulphate	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nicotine	–
Nifedipine	–
Nordiazepam	Nordaz
Norethindrone	Norlutate
Omeprazole	–
Oxazepam	Serax
Penicillin G	Bicillin
Pentazocine	–
Pentobarbital	Nembutal
Phencyclidine	PCP
Phenobarbital	Donnata/Luminal
Phenothiazine	Trilafon
Phenylbutazone	Butazolidin
Promethazine	Phenergan
Quinidine	Duraquin
Quinine	–
Secobarbital	Seconal
Sulindac	Clinoril
Tetracycline	Sumycin
Thioridazine	–
Tolmetin	–
Trifluoperazine	Stelazine
Trimipramine Maleate	–
Zomepirac	–

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Amphetamines II on the Roche/Hitachi and cobas c analyzers: Additionally Tested

For Amphetamines II, these compounds had the following approximate % cross-reactivities on the Roche/Hitachi and **cobas c** analyzers.

Generic Name	Concentration tested	300 ng/mL Cutoff	500 ng/mL Cutoff	1000 ng/mL Cutoff
Roche/Hitachi and cobas c analyzers				
LSD	2,500 ng/mL	1.89	1.76	1.43
Procaine	100,000 ng/mL	2.58	2.30	2.36
Δ^9 THC	10,000 ng/mL	0.56	0.49	0.44

Amphetamines II on the Roche/Hitachi and cobas c analyzers: Cross-reactivity with Structurally Related Compounds at the 300 ng/mL Cutoff

Generic Name	Trade Name	Approximate ng/mL Equivalent to 300 ng/mL	Approximate Percent Cross-reactivity
Roche/Hitachi and cobas c analyzers			
$\pm$ Methylenedioxymeth-amphetamine MDMA	Ecstasy	104	288
($\pm$) Methylenedioxy-amphetamine	MDA	249	120
<i>d</i> -Methamphetamine	Desoxyn	305	98
N-methylbenzodioxazoly-butamine	MBDB	323	93
<i>d</i> -Amphetamine	–	251	120
($\pm$) Methylenedioxyethyl-amphetamine	MDEA	303	99
($\pm$) Benzodioxazoly-butamine	BDB	717	42
<i>l</i> -Methamphetamine	–	2,524	12
<i>l</i> -Amphetamine	Cydril	7,085	4
Phendimetrazine	–	31,818	0.94
<i>d</i> -Pseudoephedrine	–	73,822	0.41
Phentermine	–	70,391	0.43
<i>l</i> -Ephedrine	–	89,655	0.33
Tyramine	–	85,115	0.35
<i>d,l</i> Phenylpropranolamine HCL	–	211,268	0.14
<i>d</i> -Ephedrine	–	215,827	0.14

Indented drugs are metabolites of the preceding drug

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

**Amphetamines II on the Roche/Hitachi and cobas c analyzers:
Cross-reactivity with Structurally Related Compounds at the 500 ng/mL Cutoff**

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 500 ng/mL	Approximate Percent Cross-reactivity
		Roche/Hitachi and cobas c analyzers	
± Methylenedioxymethamphetamine MDMA	Ecstasy	196	255
(±) Methylenedioxyamphetamine	MDA	394	127
<i>d</i> -Methamphetamine	Desoxyn	488	102
N-methylbenzodioxazolybutanamine	MBDB	598	84
<i>d</i> -Amphetamine	–	494	101
(±) Methylenedioxyethylamphetamine	MDEA	668	75
(±) Benzodioxazolybutanamine	BDB	1,358	37
<i>l</i> -Methamphetamine	–	4,383	11
<i>l</i> -Amphetamine	Cydril	13,342	4
Phendimetrazine	–	65,566	0.76
<i>d</i> -Pseudoephedrine	–	112,613	0.44
Phentermine	–	123,457	0.41
<i>l</i> -Ephedrine	–	141,643	0.35
Tyramine	–	141,643	0.35
<i>d,l</i> Phenylpropranolamine HCL	–	344,828	0.15
<i>d</i> -Ephedrine	–	458,716	0.11

Indented drugs are metabolites of the preceding drug

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

**Amphetamines II on the Roche/Hitachi and cobas c analyzers:
Cross-reactivity with Structurally Related Compounds at the 1000 ng/mL Cutoff**

Generic Name	Trade Name*	Approximate ng/mL equivalent to 1000 ng/mL	Approximate percent cross-reactivity
		Roche/Hitachi and cobas c analyzers	
± Methylenedioxymeth-amphetamine MDMA	Ecstasy	509	197
(±) Methylenedioxy-amphetamine	MDA	771	130
<i>d</i> -Methamphetamine	Desoxyn	998	100
N-methylbenzodioxazoly-but-amine	MBDB	1,175	85
<i>d</i> -Amphetamine	–	981	102
(±) Methylenedioxyethyl-amphetamine	MDEA	1,553	64
(±) Benzodioxazoly-but-amine	BDB	2,420	41
<i>l</i> -Methamphetamine	–	8,748	11
<i>l</i> -Amphetamine	Cydril	24,220	4
Phendimetrazine	–	138,504	0.72
<i>d</i> -Pseudoephedrine	–	261,780	0.38
Phentermine	–	238,663	0.42
<i>l</i> -Ephedrine	–	308,642	0.32
Tyramine	–	284,091	0.35
(±) Phenylpropranolamine HCL	–	606,061	0.17
<i>d</i> -Ephedrine	–	657,895	0.15

Indented drugs are metabolites of the preceding drug

Barbiturates on the COBAS INTEGRA/Barbiturates Plus on the Roche/Hitachi and cobas c analyzers: Cross-reactivity with Structurally Unrelated Compounds

The compounds listed were tested at a concentration of 100,000 ng/mL. For Barbiturates, the compounds gave values less than 0.5% cross-reactivity. For Barbiturates Plus, the compounds gave values less than 0.012% (12 ng/mL) cross-reactivity. The data applies to all systems, unless noted it applies only to the COBAS INTEGRA (I), or Roche/Hitachi (H), or **cobas c** (C) analyzers. OTC means Over The Counter, pharmaceuticals commonly available without prescription.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoyllecgonine	Cocaine metabolite
Benzphetamine	Didrex
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Carbamazepine	I Tegretol
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC / cough & cold
Chlorpromazine	Thorazine
Cocaine	crack
Codeine	Empracet
Desipramine	H,C –
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Diazoxide	I Hyperstat
Diphenhydramine	OTC/Benadryl
Dopamine	–
Doxepin	H,C –
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenoprofen	Nalfon
Flecainide	I Tambocor
Furosemide	Lasix
Gentisic acid	–
Guaiacol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril
<i>p</i> -Hydroxyamphetamine	Paredrine
Ibuprofen	OTC/analgesic
Imipramine	Tofranil

Generic Name	Trade Name* or Use
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymetham-phetamine
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	H,C –
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Morphine	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Nortriptyline	H,C –
Octreotide	I Sandostatin
Oxazepam	Serax
Paroxetine	I Paxil
Penicillin G	Bicillin
PCP	Phencyclidine
B-Phenethylamine	H,C –
Phenothiazine	Trilafon
Phentermine	Ionanin
Phenylbutazone	Butazolidin
<i>d</i> -Phenylpropanolamine	Norephedrine
<i>d,l</i> -Phenylpropanolamine	–
Procaine	Novocain
Promethazine	Phenergan
<i>d</i> -Pseudoephedrine	OTC/cough & cold
<i>l</i> -Pseudoephedrine	–
Quinidine	Duraquin
Quinine	–
Sulindac	Clinoril
Tetracycline	Sumycin
Tetrahydrozoline	OTC Eye Drops, Visine
Δ^9 THC-9-carboxylic acid	THC
Trifluoperazine	Stelazine
Trimipramine	HC –
Tyramine	Uteramin
Verapamil	Calan

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Barbiturates on the COBAS INTEGRA/Barbiturates Plus on the Roche/Hitachi and cobas c analyzers:
Barbiturates Additionally Tested

At the concentrations shown, tested as the parent compound, none of these compounds interfered with the Barbiturates assay. Not tested with the Barbiturate Plus assay.

Generic Name	Trade Name*	Level Tested
Bupropion	Wellbutrin	4.0 mg/mL
Carbamazepine	Tegretol	1 mg/mL
p-hydroxyphenytoin HPPH	Phenytoin metabolite	2.5 mg/mL
Loratadine	Claritin	volunteer sample
Lorazepam	Ativan	1 mg/mL
Omeprazole	Prilosec	5.0 mg/mL
Zalcitabine	DDC	2.0 mg/mL
Zidovudine	AZT	2.0 mg./mL

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Barbiturates: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 200 ng/mL Secobarbital	Approximate Percent Cross- reactivity
		COBAS INTEGRA	
Cyclopentobarbital	Cyclopal	212	95
Aprobarbital	Somnipron	293	68
Allobarbital	Diadol	440	46
Butalbital	Butisol / Plexonal	549	36
Butabarbital	Butisol	567	35
Pentobarbital	Nembutal	600	33
Phenobarbital	Donnata/Luminal	857	23
p-Hydroxyphenobarbital	Hydroxyphenobarbital	930	22
Amobarbital	Amytal	1,143	18
Thiopental	Pentothal	1,674	12
Barbital	Barbitone	2,074	10
Mephobarbital	Phemiton	111,111	0.2
Diphenylhydantoin	Phenytoin / Dilantin	250,000	0.1
Glutethimide	Doriden	290,698	0.1
Hexobarbital	Hexanal	> 100,000	< 0.1
Barbituric acid	Malonyurea	> 100,000	< 0.1
1,3-Dimethylbarbituric acid	–	> 100,000	< 0.1

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Barbiturates on the COBAS INTEGRA/Barbiturates Plus on the Roche/Hitachi and cobas c analyzers, continued

Barbiturates Plus: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 200 ng/mL secobarbital	Approximate Percent Cross-reactivity
			Roche/Hitachi and cobas c analyzers
Cyclopentobarbital	Cyclopal	197	101
Aprobarbital	Somnipron	215	93
Allobarbital	Diadol	282	71
Butalbital	Butisol /Plexonal	281	71
Butabarbital	Butisol	547	37
Pentobarbital	Nembutal	561	36
Amobarbital	Amytal	702	29
Phenobarbital	Donnata / Luminal	925	22
<i>p</i> -Hydroxyphenobarbital	Hydroxyphenobarbital	1,039	19
Barbital	Barbitone	1,750	11
Mephobarbital	Phemiton	> 100,000	< 0.01
Hexobarbital	Hexanal	> 100,000	< 0.01
Barbituric acid	Malonyurea	> 100,000	< 0.01
1,3-Dimethylbarbituric acid	–	> 100,000	< 0.01
Diphenylhydantoin	Phenytoin / Dilantin	> 500,000	< 0.02
Glutethimide	Doriden	> 500,000	< 0.04

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Benzodiazepines on the COBAS INTEGRA/Benzodiazepines Plus on the Roche/Hitachi and cobas c analyzers:

Cross-reactivity with Structurally Unrelated Compounds

The compounds were tested at a concentration of 100,000 ng/mL. For Benzodiazepines, the compounds listed gave values less than 0.5% cross-reactivity. For Benzodiazepines Plus, the compounds listed gave values less than 0.031, 0.05, or 0.022% cross-reactivity for the 100, 200, or 300 ng/mL cutoffs respectively. The data applies to all systems, unless noted it applies only to the COBAS INTEGRA (I), or Roche/Hitachi (H), or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoylcegonine	Cocaine metabolite
Benzphetamine	Didrex
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Chloroquine	Aralen
Chlorpheniramine	OTC/Cough & Cold
Chlorpromazine	Thorazine
Cocaine	crack
Codeine	Empracet
Cyclobenzaprine HCL	H,C Flexeril
Desipramine	H,C –
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Dopamine	–
Doxepin	H,C –
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	H,C –
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	H,C –
Erythromycin	Eryped
Estriol	–
Fenopropfen	Nalfon
Flecainide	I Tambocor
Flumazenil	Mazicon
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiaicol glycerol ether	OTC/Guaifenesin

Generic Name	Trade Name* or Use
Hydrochlorothiazide	Aldoril
<i>p</i> -Hydroxyamphetamine	Paredrine
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymetham-phetamine
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	Vicks Inhaler
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Morphine	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Nortriptyline	H,C –
Penicillin G	Bicillin
Pentazocine	I Talwin
Pentobarbital	Nembutal
Phencyclidine	PCP
<i>B</i> -Phenethylamine	PEA
Phenobarbital	Donnata/Luminal
Phenothiazine	Trilafon
Phentermine	H,C –
Phenylbutazone	Butazolidin
<i>d</i> -Phenylpropanolamine	OTC/cough & cold
<i>d,l</i> -Phenylpropanolamine	OTC/cough & cold
Procaine	Novocain
Promethazine	Phenergan
Pseudoephedrine	I –
<i>d</i> -Pseudoephedrine	H,C OTC/cough & cold
<i>l</i> -Pseudoephedrine	H,C –
Quinidine	Duraquin
Quinine	–
Secobarbital	Seconal

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Benzodiazepines on the COBAS INTEGRA/Benzodiazepines Plus on the Roche/Hitachi and cobas c analyzers, continued:

Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name*
Sulindac	Clinoril
Tetracycline	Sumycin
Δ^9 THC-9-carboxylic acid	THC
Tetrahydrozoline	OTC/Eye Drops ,Visine
Trifluoperazine	Stelazine

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Generic Name	Trade Name*
Trimiprimine	H,C –
Tyramine	Uteramin
Verapamil	Calan
Zolpidem	I Ambien
Zopiclone	I Imovane

Benzodiazepines: Additionally Tested

At the concentrations shown, tested as the parent compound, none of these compounds interfered with the Benzodiazepines Assay. Not tested with the Benzodiazepines Plus assay.

Generic Name	Trade Name* or Use	Level Tested
Acyclovir	Zovurax	5 mg/mL
Albuterol	Ventolin	4 mg/mL
Bupropion	Wellbutrin	1 mg/mL
Carbamazepine	Tegretol	4 mg/mL
Cetylpyridinium Cl	–	5 mg/mL
Chlorprothixene	Taractan	2 mg/mL
Cyclobenzaprine	Flexeril	5 mg/mL
Diphenhydramine	OTC/cough & cold	2 mg/mL
Dipyrrone	Metamizol	2.5 mg/mL
Doxepin	Sinequan	2 mg/mL
Nordoxepin	–	1 mg/mL
<i>d</i> -Ephedrine	–	1 mg/mL
<i>l</i> -Ephedrine	Primatene/Ma Huang	1 mg/mL
Fluoxetine	Prozac	1 mg/mL
Gabapentin	Neurontin	5 mg/mL
Isoniazid	Rifamate	5 mg/mL
Ketoprofen	–	4 mg/mL
Labetalol	–	1 mg/mL
Melatonin	–	2 mg/mL
Meprobamate	Miltown	2.5 mg/mL
Methotrimeprazine	Levomepromazine	3 mg/mL
Minoxidil	Rogaine	1.5 mg/mL
Nalbuphine	Nubain	1 mg/mL
Olanzapine	Zyprexa	2 mg/mL
Omeprazole	Prilosec	5 mg/mL
Prochlorperazine	Compazine	2 mg/mL
Propranolol	–	2 mg/mL
Sertraline	Zoloft	2 mg/mL
Terfenadine	Seldane	2 mg/mL
Azacyclonal	–	1.5 mg/mL
Tramadol	Ultram	2 mg/mL
Trazodone	Desyrel	5 mg/mL

Indented drugs are metabolites of the preceding drug

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Benzodiazepines on the COBAS INTEGRA/Benzodiazepines Plus on the Roche/Hitachi and cobas c analyzers, continued:
Benzodiazepines: Additionally Tested, continued

Generic Name	Trade Name*	Level Tested
Trimethobenzamide	Tigan	0.5 mg/mL
Valerian Root	–	250 mg/mL
Venlafaxine	Effexor	4 mg/mL
Viminol	–	2 mg/mL
Zalcitabine	DDC	2 mg/mL
Zidovudine	AZT	2 mg/mL
Zolpidem	Ambien	2 mg/mL

Indented drugs are metabolites of the preceding drug

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Benzodiazepines Plus:
Potential Interferents

These compounds could potentially interfere with the Benzodiazepines Plus assay. Tested as the parent compound. Not tested with the Benzodiazepines assay.

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 100 ng/mL Nor-diazepam	Approximate Percent Cross-reactivity
Oxaprozin	Daypro	5,000	2.0
Orphenadrine	Norflex	750,000	0.01

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Benzodiazepines: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 100 ng/mL Nordiazepam	Approximate Percent Cross-reactivity
		COBAS INTEGRA	
Alprazolam	Xanax	74	135
α-Hydroxyalprazolam	–	101	99
4-Hydroxyalprazolam	–	123	81
Diazepam	Valium	79	127
N-Methyloxazepam	–	172	58
Oxazepam	Serax	188	53
Triazolam	Halcion	113	88
α-Hydroxytriazolam	–	120	84
Pinazepam	–	115	87
Flurazepam	Dalmane	116	86
Hydroxyethylflurazepam	–	108	93
Didesethylflurazepam	–	147	68
Desalkylflurazepam	–	192	52
Midazolam	Versed	124	81
Clorazepate K ⁺ salt	Tranxene	127	79
Bromazepam	Lectopam	129	78
Prazepam	Centrax	145	69

Indented drugs are metabolites of the preceding drug

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Benzodiazepines on the COBAS INTEGRA/Benzodiazepines Plus on the Roche/Hitachi and cobas c analyzers:

Benzodiazepines Cross-reactivity with Structurally Related Compounds, continued

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 100 ng/mL Nordiazepam	Approximate Percent Cross-reactivity
		COBAS INTEGRA	
Nitrazepam	Mogadon	149	67
7-Aminonitrazepam	–	282	35
7-Acetamidonitrazepam	–	115,740	0.1
Demoxepam	–	168	59
Flunitrazepam	Rohypnol	170	59
Desmethyflunitrazepam	–	188	53
3-Hydroxyflunitrazepam	–	819	12
Clonazepam	Klonopin	178	56
Chlordiazepoxide	Librium	221	45
Desmethylchlordiazepoxide	–	338	30
Lorazepam	Ativan	228	44
Medazepam	Nobrium	292	34
Desmethylmedazepam	–	427	23

Indented drugs are metabolites of the preceding drug.

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Benzodiazepines Plus: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to ng/mL Nordiazepam Cutoff			Approximate Percent Cross-reactivity to Listed Nordiazepam Cutoff		
		Roche/Hitachi and cobas c					
		100	200	300	100	200	300
Demoxepam	–	92	202	324	108	99	93
Diazepam	Valium	106	215	340	94	93	88
Oxazepam	Serax	122	259	398	82	77	75
Estazolam	–	108	213	325	92	94	92
Alprazolam	Xanax	108	219	338	93	91	89
α-Hydroxyalprazolam	–	118	228	354	84	88	85
α-Hydroxyalprazolam glucuronide	–	182	370	553	55	54	54
4-Hydroxyalprazolam	–	123	248	389	82	81	77
Bromazepam	Lectopam	110	241	346	91	83	87
Nitrazepam	Mogadon	114	246	359	88	81	84
7-Aminonitrazepam	–	103	239	340	97	84	88
7-Acetamidonitrazepam	–	43,026	91,765	175,497	0.2	0.2	0.2
Triazolam	Halcion	115	236	352	87	85	85
α-Hydroxytriazolam	–	116	243	377	86	82	80
4-Hydroxytriazolam	–	121	250	385	83	80	78
Clobazam	–	123	237	382	81	84	79
Clorazepate K ⁺ salt	Tranxene	124	237	372	81	85	81
Flunitrazepam	Rohypnol	142	283	424	71	71	71
7-Aminoflunitrazepam	–	97	212	333	104	94	90
Desmethyflunitrazepam	–	135	273	395	74	73	76
3-Hydroxyflunitrazepam	–	175	355	584	57	56	51

Indented drugs are metabolites of the preceding drug.

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Benzodiazepines on the COBAS INTEGRA/Benzodiazepines Plus on the Roche/Hitachi and cobas c analyzers:
Benzodiazepines Plus: Cross-reactivity with Structurally Related Compounds, continued

Generic Name	Trade Name*	Approximate ng/mL Equivalent to ng/mL Nordiazepam Cutoff			Approximate Percent Cross-reactivity to Listed Nordiazepam Cutoff		
		Roche/Hitachi and cobas c analyzers					
		100	200	300	100	200	300
Temazepam (methyloxazepam)	Restoril	145	256	409	69	78	73
Temazepam glucuronide	–	>20 000	>30 000	>20 000	0.8	0.7	1.0
Chlordiazepoxide	Librium	146	318	486	69	63	62
Desmethylchlordiazepoxide	–	153	343	517	65	58	58
Nimetazepam	Erimin	152			66		
Clonazepam	Klonopin	148	307	445	68	65	67
7-Aminoclonazepam	–	144	288	489	69	70	61
Lormetazepam	–	163	307	503	61	65	60
Lorazepam	Ativan	163	341	487	62	59	62
Lorazepam glucuronide	–	19 615	>20 000	>20 000	0.5	1.0	1.1
Prazepam	Centrax	164	337	521	61	59	58
Flurazepam	Dalmane	165	352	490	61	57	61
Hydroxyethylflurazepam	–	100	228	347	100	88	87
Didesethylflurazepam	–	136	274	423	73	73	71
Desalkylflurazepam	–	105	228	323	95	88	93
Midazolam	Versed	168	309	467	60	65	64
α-Hydroxymidazolam	–	140	267	431	71	75	70
Pinazepam	–	170	291	552	59	69	54
Halazepam	–	171	353	507	59	57	59
Medazepam	Nobrium	224	395	694	45	51	43
Desmethylmedazepam	–	345	602	968	29	33	31

Indented drugs are metabolites of the preceding drug.

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Cocaine II: Cross-reactivity with Structurally Unrelated Compounds

For Cocaine II, none of the compounds listed gave values greater than 50 ng/mL (0.05% cross-reactivity). The compounds were tested at a concentration of 100,000 ng/mL. The data applies to the COBAS INTEGRA, Roche/Hitachi, and **cobas c** analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	<i>d,l</i> hyoscyamine
Benzocaine	OTC/analgesic
Benzphetamine	Didrex
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Cannabidiol	THC metabolite
Carbamazepine	Tegretol
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Pre-Sate
Chlorprothixene	Taractan
Clomipramine	Anaframil
Codeine	ARAP/Empracet
Cotinine	Nicotine metabolite
Cyclobenzaprine	Flexeril
Cyproheptadine	Perlactin
Desipramine	norpramine / imipramine metab.
Dextromethorphan	OTC/cough & cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Disopyramide	Norpace
Dopamine	–
Doxepin	Doxatel
Doxylamine	Unisom/Bendectin
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	adrenaline/Epipen
EDDP	Methadone metabolite
EMDP	Methadone metabolite

Generic Name	Trade Name* or Use
Erythromycin	Eryped
Estriol	–
Fenoprofen	Nalfon
Fluconazole	Diflucan
Fluoxetine	Prozac
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Haloperidol	Haldol
Hydrochlorothiazide	Aldoril
Hydroxymethadone	Methadone metabolite
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
levomethadyl acetate	Orlaam/LAAM
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
Maprotiline	Ludiomil
MDA	Methylenedioxyamphet-amine
MDMA - Ecstasy	Methylenedioxymetham-phetamine
Melanin	–
Meperidine	Demerol
Methadol	Dimepheptanol
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	Vicks Inhaler
Methaqualone	Quaalude
Methotrimeprazine	Levomepromazine
Methyl dopa	I –
Methylphenidate	Ritalin
Methypylon	–
Mianserin	Norval
Morphine sulfate	morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nicotine	OTC/tobacco/Nicoderm
Nordiazepam	Nordaz
Nordoxepin	Sinequan/Adapin metab.
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Cocaine II: Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use	Generic Name	Trade Name* or Use
Nortriptyline	Pamelor	Propoxyphene	Darvon
Orphenadrine	Disipal	Protriptyline	Vivacill
Oxazepam	Serax	<i>d</i> -Pseudoephedrine	OTC/Cough & Cold
Oxycodone	Percodan	<i>l</i> -Pseudoephedrine	–
Penicillin G	Bicillin	Quinidine	Duraquin
Pentobarbital	Nembutal	Quinine	–
Perphenazine	Trilafon	Secobarbital	Seconal
Phencyclidine	PCP	Sulindac	Clinoril
<i>B</i> -Phenethylamine	PEA	Tetracycline	Sumycin
Phenobarbital	Donnata/luminal	Δ^9 THC-9-carboxylic acid	THC
Phenothiazine	Trilafon	Tetrahydrozoline	OTC/eye drops ,Visine
Phentermine	Ionanin	Thioridazine	Mellaril
Phenylbutazone	Butazolidin	Thiothixene	Navane
Phenylpropanolamine	OTC/cold & diet aids	Trifluoperazine	Stelazine
<i>d</i> -Phenylpropanolamine	Norephedrine	Trimipramine	Surmontil
Phendimetrazine	Bontril	Tyramine	Uteramin
Procaine	Novocain	Verapamil	Calan
Promazine	Sparine	Zomepirac	–
Promethazine	Phenergan		

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Cocaine II: Additionally Tested

The following compounds were tested at 100,000 ng/mL and had a cross-reactivity of less than 0.05% (50 ng/mL).

Ecgonine	Ecgonone methyl ester	Norcocaine
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Cocaine II: Cross-reactivity with Structurally Related Compounds

	150 ng Cutoff ng/mL equivalent		Percent Cross-reactivity		300 ng Cutoff ng/mL equivalent		Percent Cross-reactivity	
	COBAS INTEGRA	R/H cobas c	COBAS INTEGRA	R/H cobas c	COBAS INTEGRA	R/H cobas c	COBAS INTEGRA	R/H cobas c
Cocaine	7,112	7,733	2.1	1.9	18,508	18,132	1.6	1.7
Cocaethylene	37,260	34,933	0.4	0.4	70,108	67,435	0.4	0.4

R/H = Roche/Hitachi

cobas c = **cobas c** analyzers

LSD: Cross-reactivity with Structurally Unrelated Compounds

For COBAS INTEGRA analyzers, none of the compounds listed gave a positive response. The compounds were tested at a concentration of $\geq 50,000$ ng/mL. For the **cobas c** analyzers, the compounds were tested at a concentration of 100,000 ng/mL. None gave a value greater than 0.4 ng/mL (0.0004% cross-reactivity). The data applies to both the COBAS INTEGRA and **cobas c** analyzers, unless noted. It applies only to the COBAS INTEGRA (I) or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>d,l</i> -Amphetamine	I Adderall
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoylcegonine	Cocaine metabolite
Benzphetamine	Didrex
Brompheniramine	C –
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Clemastine	C –
Cocaine	crack
Codeine	Empracet
Desipramine	C Norpramine/imipramine metab.
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Dopamine	–
Doxepin	C –
Doxylamine	I Unisom/Bendectin
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenopropfen	Nalfon
Flumazenil	C –
Fluoxetine	I Prozac
Fluvoxamine	I Luvox

Generic Name	Trade Name* or Use
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril
<i>p</i> -Hydroxyamphetamine	Paredrine
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymetham-phetamine
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
<i>d</i> -Metamphetamine	Desoxyn
<i>l</i> -Methamphetamine	Vicks Inhaler
Methapyrilene	C Thienylene
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Morphine	morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nordiazepam	Nordaz
Norethindrone	Norlutate
<i>l</i> -norpseudoephedrine	Pseudoephedrine metab.
Nortriptyline	C Pamelor
Oxazepam	Serax
Penicillin G	Bicillin
Pentazocine	C –
Pentobarbital	Nembutal
<i>B</i> -Phenethylamine	PEA
Phencyclidine	PCP
Phenobarbital	Donnata/Luminal
Phenothiazine	–
Phentermine	C Ionanin
Phenylbutazone	Butazolidin
Phenylpropanolamine	I OTC/cough & cold
<i>d</i> -phenylpropanolamine	Norephedrine
<i>d,l</i> -phenylpropanol-amine	I –
Procaine	Novocain
Procyclidine	C Kemadrin
Promethazine	Phenergan

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

LSD: Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use	Generic Name	Trade Name* or Use
<i>d</i> -Pseudoephedrine	OTC/cough & cold	Trifluoperazine	Stelazine
<i>l</i> -Pseudoephedrine	–	<i>d,l</i> -Trihexyphenidyl	C Benzhexol, Artane
Quinidine	Duraquin	Trimipramine	C Stangyl, Surmontil
Quinine	–	Tripelenamine	C PBZ, Pyribenzamine
Secobarbital	Seconal	Tyramine	Uteramin
Sulindac	Clinoril	Venlafaxine	I Effexor
Tetracycline	Sumycin	Verapamil	Calan
Δ^9 THC-9-carboxylic acid	THC	Zolpidem	C –
Tetrahydrozoline	OTC/Eye Drops, Visine	Zopiclone	C –
Thioridazine	C –		

I = COBAS INTEGRA

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

LSD: Additionally Tested

At the concentrations shown, tested as the parent compound, none of these compounds interfered with the LSD assay.

Generic Name	Trade Name*	Level Tested
Ambroxol	I –	2.0 mg/mL

I = COBAS INTEGRA

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

LSD: Cross-reactivity with Structurally Related Compounds

Generic Name	Approximate ng/mL equivalent to 0.5 ng/mL LSD		Approximate percent cross-reactivity	
	COBAS INTEGRA	cobas c analyzers	COBAS INTEGRA	cobas c analyzers
Nor-LSD (N-desmethyl-LSD)	1.8	2	28	33
2-Oxo-3-hydroxy-LSD	4.4	4	11	12
Iso-LSD	11	14	4.5	3.6
Lysergic Acid N-(methylpropyl) amide	16	15	3.1	3.3
Methysergide Maleate	3,191	2,904	0.016	0.017
Ergonovine Maleate	12,500	10,769	0.004	0.0046
Lysergic Acid N-(hydroxyethyl) amide	15,957	–	0.003	–
2-Bromo- α -ergocryptine	29,070	31,724	0.0017	0.0016
Ergotamine Tartrate	32,468	36,296	0.0015	0.0014
<i>d</i> -Lysergic acid	86,207	113,636	0.0006	0.0004
<i>d</i> -Tryptophan	116,822	166,667	0.0004	0.0003
Serotonin	211,864	238,095	0.0002	0.0002
α -Ergocryptine	750,000	1,000,000	0.00006	0.0001

Methadone II: Cross-reactivity with Structurally Unrelated Compounds

For Methadone II, none of the compounds listed gave values greater than 200 ng/mL (0.2% cross-reactivity). The compounds were tested at a concentration of 100,000 ng/mL. The data applies to all systems, unless otherwise noted it applies only to the COBAS INTEGRA (I), Roche/Hitachi (H), or **cobas c** (C) analyzers.

Generic Name	Trade Name† or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline*	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoylcegonine	Cocaine metabolite
Benzphetamine*	Didrex
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Carbamazepine*	Tegretol
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine*	OTC/cough & cold
Citalopram	I Celexa
Cocaine	crack
Codeine	Empracet
Cotinine	Nicotine metabolite
Cyclobenzaprine*	C,H Flexeril
Cyproheptadine*	C,H –
Desipramine*	Norpramine / imipramine metabolite
Dextromethorphan*	OTC/cough and cold
Dextropropoxyphene*	Darvon
Diazepam	Valium
Diphenylhydantoin	phenytoin/Dilantin
Diphenhydramine*	C,H OTC/Benadryl
Disopyramide* ¹	Norpace
Dopamine	–
Doxepin*	C,H –
Doxylamine*	Unisom/Bendectin
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d,l</i> -Ephedrine	–
<i>d</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–

Generic Name	Trade Name† or Use
Fenoprofen	Nalfon
Flunitrazepam	H Rohypnol
Fluoxetine*	Prozac
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Haloperidol	Haldol
Hydrochlorothiazide	Aldoril
Ibuprofen	OTC/analgesic
Imipramine*	C,H –
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
Maprotiline*	Ludomil
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymetham-phetamine
Mefloquine	H Larium
Melanin	–
Meperidine*	C,H Demerol
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	–
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Mianserin*	–
Mirtazapine	I Remeron
Morphine sulfate	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nicotine	OTC/tobacco/Nicoderm
Nordiazepam	Nordaz
Nordoxepin*	Sinequan/Adapin metab.
Norethindrone	Norlutate
Nortriptyline*	Pamelor
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Orphenadrine*	C,H –
Oxazepam	Serax
Penicillin G	Bicillin
Pentobarbital	Nembutal
Perphenazine*	C,H –
Phencyclidine	PCP

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

¹ < 0.01% when tested at 1 mg/mL on **cobas c** and Roche/Hitachi

*Additional testing, all less than 50 ng/mL (0.05% cross-reactivity)

† One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Methadone II: Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name† or Use	Generic Name	Trade Name† or Use
β-phenethylamine	PEA	Cyampazine	–
Phenobarbital	Donnata/luminal	Quinidine	Duraquin
Phenothiazine	Trilafon	Quinine	–
Phentermine	Ionamin	Secobarbital	–
Phenylbutazone	Butazolidin	Sulindac	Clinoril
Phenylpropanolamine	OTC/cough & cold	Tetracycline	Sumycin
<i>d</i> -Phenylpropanolamine	Norephedrine	Δ ⁹ THC-9-carboxylic acid	THC
Procaine	Novocain	Tetrahydrozoline	–
Protriptyline*	Vivacill	Trifluoperazine	Stelazine
<i>d</i> -Pseudoephedrine	OTC/cough & cold	Tyramine	Uteramin
<i>l</i> -Pseudoephedrine	–	<i>d,l</i> -Verapamil*	Calan

*Additional testing, all less than 50 ng/mL (0.05% cross-reactivity)

† One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Methadone II: Potential Interferents

The following compounds, tested as the parent compound, could potentially interfere with the Methadone II assay.

Generic Name	Trade Name†	Approximate ng/mL Equivalent to 300 ng/mL Methadone		Approximate Percent Cross-reactivity	
		COBAS INTEGRA	Roche/Hitachi cobas c analyzers	COBAS INTEGRA	Roche/Hitachi cobas c analyzers
Cyamemazine	Tercian	5,229	8,477	5.7	3.5
Quetiapine fumarate	Seroquel	At 100,000 ng/mL of Parent Compound there was none Detected		% Unknown but Significant Response in Patient Samples	
Tramadol	Ultram	87,278	102,465	0.3	0.3

† One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Methadone II: Cross-reactivity with Structurally Related Compounds

Compound	Trade Name*	Approximate ng/mL Equivalent to 300 ng/mL of Methadone		Approximate Percent Cross-reactivity	
		COBAS INTEGRA	Roche/ Hitachi	COBAS INTEGRA	Roche/ Hitachi
Hydroxymethadone	Methadone metabolite	2,571	3,289	11.7	9.1
Methotrimeprazine	Levomepromazine	6,244	8,939	4.8	3.4
Thiothixene	Navane	24,268	39,267	1.2	0.8
Chlorpromazine	Thorazine	26,019	26,071	1.2	1.2
Promazine	Sparine	92,857	142,857	0.3	0.2
Clomipramine	Anaframil	94,767	135,747	0.3	0.2
Thioridazine	Mellaril	109,091	146,341	0.3	0.2
Chlorprothixene	Taractan	168,539	186,335	0.2	0.2
Promethazine	Phenergan	168,539	288,462	0.2	0.1
<i>l</i> - α -Methadol	Dimepheptanol	215,827	220,588	0.1	0.1
Trimipramine	Surmontil	229,008	422,535	0.1	0.1
Cyclobenzaprine	I Flexeril	256,410	-	0.1	-
Orphenadrine	I Disipal	258,621	-	0.1	-
<i>l</i> - β -acetylmethadol	Levomethaldyl acetate Orlaam	291,262	370,370	0.1	0.1
Diphenhydramine	I OTC/Benadryl	291,262	-	0.1	-
Perphenazine	I Trilafon	315,789	-	0.1	-
Meperidine	I Demerol	333,333	-	0.1	-
Imipramine	I Tofranil	361,446	-	0.1	-
Cyproheptadine	I Perlactin	410,959	-	0.1	-
Doxepin	I Doxatel	428,571	-	0.1	-
EDDP	Methadone metabolite	> 600,000	-	< 0.05	< 0.05
EMDP	Methadone metabolite	> 600,000	-	< 0.05	< 0.05

I = COBAS INTEGRA

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

DRI Methadone Metabolite: Cross-reactivity with Structurally Unrelated Compounds

Structurally unrelated compounds and/or concurrently used drugs produced a negative result, on a Roche/Hitachi 917 analyzer, at the concentrations listed below.

Compound	ng/mL
Acetaminophen	1,000,000
6-Acetyl morphine	500,000
Acetylsalicylic acid	1,000,000
Amitriptyline	100,000
Amoxicillin	500,000
Amphetamine	1,000,000
Benzoyllecgonine	1,000,000
Caffeine	100,000
Captopril	500,000
Carbamazepine	500,000
Chlordiazepoxide	100,000
Chlorpromazine	100,000
Cimetidine	500,000
Clomipramine	100,000
Cocaine	200,000
Codeine	1,000,000
Desipramine	1,000,000
Dextromethorphan	30,000
Diazepam	30,000
Dihydrocodeine	1,000,000
Diphenhydramine	500,000
Disopyramide	1,000,000
Doxepine	200,000
Doxylamine	500,000
Ephedrine	2,000,000
Fentanyl	200,000
Fluoxetine	1,000,000
Fluphenazine	500,000
Heroin	1,000,000
Hydrocodone	200,000
Hydromorphone	200,000
Ibuprofen	1,000,000

Compound	ng/mL
Imipramine	1,000,000
Ketamine	400,000
Levorphanol	200,000
Levothyroxine	500,000
Maprotiline	1,000,000
Meperidine	1,000,000
<i>d</i> -Methamphetamine	100,000
<i>l</i> -Methamphetamine	100,000
Metronidazole	250,000
Morphine	1,000,000
Nalbuphine	1,000,000
Naloxone	3,000,000
Naltrexone	3,000,000
Norcodeine	1,000,000
Normorphine	1,000,000
Nortriptyline	500,000
Oxazepam	500,000
Oxycodone	500,000
Phencyclidine	50,000
Phenobarbital	1,000,000
Phentermine	1,000,000
Promethazine	100,000
Propoxyphene	50,000
Ranitidine	500,000
Salicylic Acid	500,000
Secobarbital	1,000,000
Talwin	500,000
11-Nor-(Δ^9) THC-COOH	10,000
Thebaine	100,000
Thioridazine	150,000
Tramadol	500,000

DRI Methadone Metabolite: Cross-reactivity with Structurally Related Compounds

On the Roche/Hitachi 917 analyzer, at the concentrations shown, these compounds are considered to have no cross-reactivity because they tested negative compared to the 100 and 300 ng/mL cutoff.

Compound	ng/mL
Methadone	500,000
EMDP	200,000
LAAM HCl	100,000
Nor-LAAM HCl	10,000

Methaqualone: Cross-reactivity with Structurally Unrelated Compounds

For Methaqualone, none of the compounds listed gave values greater than 0.1% (100 ng/mL) cross-reactivity. The compounds were tested at a concentration of 100,000 ng/mL. The data applies to both the COBAS INTEGRA and **cobas c** analyzers unless otherwise noted it applies only to the COBAS INTEGRA (I) or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoylcegonine	Cocaine metabolite
Benzphetamine	Didrex
Brompheniramine	C –
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Clemastine	C –
Cocaine	crack
Codeine	Empracet
Desipramine	C –
Dextromethorphan	OTC/cough and cold
Diazepam	Valium
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Dopamine	–
Doxepin	C –
Doxylamine	I Unisom/Bendectin
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d,l</i> -Ephedrine	–
<i>d</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenoprofen	Nalfon
Flumazenil	C –
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiaicol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril
<i>p</i> -Hydroxyamphetamine	I Paredrine

I = COBAS INTEGRA

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Generic Name	Trade Name* or Use
Ibuprofen	OTC analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymeth-amphetamine
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	Vicks Inhaler
Methapyrilene	C –
Methylphenidate	Ritalin
Methypylon	–
Morphine Sulfate	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nordiazepam	Nordaz
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Nortriptyline	C –
Oxazepam	Serax
Penicillin G	Bicillin
Pentazocine	C –
Pentobarbital	Nembutal
Phencyclidine	PCP
<i>B</i> -Phenethylamine	PEA
Phenobarbital	Donnata/Luminal
Phenothiazine	Thiodiphenylamine
Phentermine	Ionanin
Phenylbutazone	Butazolidin
<i>d</i> -Phenylpropanolamine	Norephedrine
Phenylpropanolamine	OTC/cough & cold
Procaine	Novocain
Procyclidine	C –
Promethazine	Phenergan
Dextro(<i>d</i>)-propoxyphene	Darvon
<i>d</i> -Pseudoephedrine	OTC/cough & cold
<i>l</i> -Pseudoephedrine	–
Quinidine	Duraquin
Quinine	–
Secobarbital	Seconal
Sulindac	Clinoril
Tetracycline	Sumycin

Methaqualone: Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use	Generic Name	Trade Name* or Use
Δ^9 THC-9-carboxylic acid	THC	<i>d,l</i> -Trihexyphenidyl	C –
Tetrahydrozoline	OTC/eye drops ,Visine	Trimipramine	C –
Thioridazine	C –	Tripelenamine	C –
Trifluoperazine	Stelazine	Verapamil	C Calan
Tyramine	Uteramin	Zolpidem	C –
		Zopiclone	C –

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Methaqualone: Cross-reactivity with Structurally Related Compounds

Generic Name	Approximate ng/mL Equivalent to 300 ng/mL Methaqualone		Approximate Percent Cross-reactivity	
	COBAS INTEGRA	cobas c analyzers	COBAS INTEGRA	cobas c analyzers
Mecloqualone	211	—	142	—
4'-Hydroxy-methaqualone	266	337	113	89
3'-Hydroxy-methaqualone	352	428	85	70
2'-Hydroxymethyl-methaqualone	492	547	61	55
2-Hydroxymethyl-methaqualone	625	720	48	42
6-Hydroxy-methaqualone	1,560	1,825	19	16

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Opiates II: Cross-reactivity with Structurally Unrelated Compounds

For Opiates II, the compounds listed gave values less than 0.5% cross-reactivity. The compounds were tested at a concentration of 100,000 ng/mL. The data applies to all systems unless otherwise noted that it applies only to the COBAS INTEGRA (I) or Roche/Hitachi (H), or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC / analgesic
Benzoylcegonine	Cocaine metabolite
Benzphetamine	Didrex
Butabarbital	Butisol
Caffeine	OTC stimulant
Calcium hypochlorite	Hypochlorous Acid
Cannabidiol	THC metabolite
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Citalopram	I Celexa
Clomipramine	I Anafranil
Cocaine	crack
Desipramine	I Norpramine / imipramine metab.
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Dopamine	I –
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenopropfen	Nalfon
Flecainide	H,I Tambocor
Furosemide	Lasix

Generic Name	Trade Name* or Use
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lamivudine	H,I Epivar
Lidocaine	Anestacon
LSD ¹	Lysergic acid Diethylamide
Mefloquine	H Larium
Melanin	–
Mirtazapine	H,I Remeron
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	H,C Vicks Inhaler
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Mianserin	I Norval
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Nelfinavir	H,I Viracept
Niacinamide	Niacin, Vitamin B3
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Oxazepam	Serax
Penicillin G	Bicillin
Pentobarbital	Nembutal
Phencyclidine	PCP
Phenobarbital	Donnata/ luminal
Phenothiazine	Helmetina
Phenylbutazone	Butazolidin
Phenylpropanolamine	OTC/cough & cold
<i>d</i> -Phenylpropanol-amine	H Norephedrine
Procaine	Novocain
Promazine	I Sparine
Promethazine	Phenergan
<i>d</i> -Pseudoephedrine	OTC/cough & cold
<i>l</i> -Pseudoephedrine	–
Quinidine	Duraquin

¹ LSD was tested at 2,500 ng/mL.

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

*One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Opiates II: Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use
Quinine	–
Secobarbital	Seconal
Sulindac	Clinoril
Tetracycline	Sumycin

² Δ^9 THC-9-carboxylic acid was tested at 10,000 ng/mL.

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Generic Name	Trade Name* or Use
Δ^9 THC-9-carboxylic acid ²	THC
Tetrahydrozoline	OTC/eye drops, Visine
Trifluoperazine	Stelazine
Verapamil	Calan

Opiates II: Additionally Tested

Tested at the concentrations shown, as the parent compound, none of these compounds interfered with the Opiates II assay.

Generic Name	Trade Name*	Level Tested
Clinafloxacin ¹	–	5 mg/mL
Enoxacin ¹	–	5 mg/mL
Gatifloxacin ¹	–	5 mg/mL
Nalidixic Acid ¹	–	5 mg/mL
Sparfloxacin ¹	–	5 mg/mL
Trovafloxacin ¹	–	5 mg/mL

¹ Baden LR, Horowitz G, Jacoby H, Eliopoulos GM. Quinolones and false-positive urine screening for opiates by immunoassay technology. JAMA 286(24): 3115 December 26, 2001.

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Opiates II: Potential Interferents

The following compounds, tested as the parent compound, could potentially interfere with the Opiates assay.

Generic Name	Trade Name†	300 ng Cutoff		2000 ng Cutoff	
		ng/mL Equivalent	Percent Cross-reactivity	ng/mL Equivalent	Percent Cross-reactivity
Buprenorphine	-	100,000	≤ 0.3	670,000	≤ 0.3
Ciprofloxacin ¹	-	1,700,000 **	0.017	-	-
Levofloxacin ¹	Levaquin	200,000	0.15	-	-
Levorphanol*	-	2,500	12	-	-
Lomefloxacin ¹	-	1,700,000 **	0.017	-	-
MgSO ₄	MgSO ₄ concentrations > 625 mg/mL (51.9 mmol/L) were found to interfere with the assay.				
Moxifloxacin ¹	-	1,700,000 **	0.017	-	-
Nalorphine*	Nalline	2,500	12*	-	-
Norfloxacin ¹	-	1,700,000 **	0.017	-	-
Ofloxacin ¹	Floxin	200,000	0.15	-	-
Perfloxin ¹	-	200,000 **	0.15	-	-
Tilidine*	Valoron	35,000	0.9	-	-
Tramadol*	Ultram	750,000	0.04	-	-
-	-	Roche/Hitachi and cobas c analyzers		Roche/Hitachi and cobas c analyzers	
Rifampicin	Rifadin	1,800	17	28,600	7
-	-	COBAS INTEGRA		COBAS INTEGRA	
Rifampicin	Rifadin	3,000	10	14,300	14

*Tested on COBAS Mira

**Levels 4-25 times higher than the peak urinary concentration with standard dosing.

† One or more of the trade names listed are trademarks of companies not affiliated with Roche.

¹Baden LR, Horowitz G, Jacoby H, Eliopoulos GM. Quinolones and false-positive urine screening for opiates by immunoassay technology. JAMA 286(24): 3115 December 26, 2001.

Opiates II: Cross-reactivity with Structurally Related Compounds

COBAS INTEGRA Analyzers	300 ng/mL Cutoff		2000 ng/mL Cutoff	
	Approximate ng/mL Equivalent to 300 ng/mL Morphine	Approximate Percent Cross-reactivity	Approximate ng/mL Equivalent to 2000 ng/mL Morphine	Approximate Percent Cross-reactivity
Codeine	233	129	1,517	132
Dihydrocodeine	324	93	2,224	90
Ethyl morphine	333	90	2,177	92
6-Acetylmorphine	359	84	2,246	89
Dihydromorphine	449	67	3,919	51
Diacetylmorphine	462	65	3,030	66
Morphine - 3-glucuronide	721	42	5,398	37
Hydrocodone	734	41	6,118	33
Thebaine	767	39	5,737	35
Hydromorphone	924	32	5,734	35
Oxycodone	46,575	0.6	461,613	0.4
Meperidine	62,337	0.5	644,767	0.3
n-Norcodeine	72,078	0.4	551,941	0.4
Fentanyl	175,000	0.2	3,000,000	0.07

Roche/Hitachi Analyzers cobas c analyzers	300 ng/mL Cutoff		2000 ng/mL Cutoff	
	Approximate ng/mL Equivalent to 300 ng/mL Morphine	Approximate Percent Cross-reactivity	Approximate ng/mL Equivalent to 2000 ng/mL Morphine	Approximate Percent Cross-reactivity
Codeine	224	134	1,541	130
Dihydrocodeine	510	59	3,170	63
Ethyl morphine	297	101	2,474	81
6-Acetylmorphine	386	78	2,598	77
Diacetylmorphine	366	82	2,915	69
Morphine - 3-glucuronide	552	54	3,785	53
Hydrocodone	1,086	28	7,166	28
Thebaine	1,210	25	7,579	26
Hydromorphone	1,425	21	10,768	19
Oxycodone	> 75,000	< 0.4	> 670,000	< 0.3
Meperidine	> 100,000	< 0.3	> 670,000	< 0.3
n-Norcodeine	18,590	2	99,264	2

DRI Oxycodone: Cross-reactivity with Structurally Unrelated Compounds

Structurally unrelated compounds that tested negative at the 100 ng/mL cutoff at the concentrations listed.

Generic Name	ng/mL
Acetaminophen	1,000
Acetylsalicylic acid	1,000
Amitriptyline	500
Amoxicillin	500
Amphetamine	2,000
Benzoylcegonine	2,000
Caffeine	1,000
Carbamazepine	1,000
Chlorpromazine	2,000
Cimetidine	1,000
Clomipramine	1,000
Desipramine	1,000
Dextromethorphan	200
Doxepin	200
Ephedrine	2,000
Fentanyl	200
Fluoxetine	1,000
Fluphenazine	500

Generic Name	ng/mL
Ibuprofen	1,000
Imipramine	1,000
Maprotiline	1,000
Meperidine	1,000
Methadone	1,000
Metronidazole	2,000
Nalbuphine	1,000
Nortriptyline	500
Oxazepam	500
Phencyclidine	1,000
Phenobarbital	1,000
Ranitidine	3,000
Secobarbital	1,000
Talwin	500
Thebaine	20
Thioridazine	1,000
Tramadol	500

DRI Oxycodone: Cross-reactivity with Structurally Related Compounds

Compound	Concentration Tested (ng/mL)	Recovery (ng/mL)	Approximate Percent Cross-reactivity
Oxycodone	300	300	100
Oxymorphone	300	308	103
Noroxymorphone	500,000	303.5	< 0.1
Noroxycodone	50,000	41.5	< 0.1

DRI Oxycodone: Additionally Tested Opiate Related and Unrelated Compounds

On the Roche/Hitachi 717 analyzer, at the concentrations listed, none of these compounds exceeded the 100 oxycodone cutoff.

Compound	ng/mL
6-Acetyl morphine	50
Codeine	500
Dihydrocodeine	100
Heroin	300
Hydrococodone	75
Hydromorphone	30
Levorphanol	200

Compound	ng/mL
Morphine	350
Morphine-3-glucuronide	900
Naloxone	200
Naltrexone	500
Norcodeine	1,000
Normorphine	1,000

Phencyclidine (PCP) on the COBAS INTEGRA Systems/Phencyclidine (PCP) Plus on the Roche/Hitachi and cobas c analyzers:

Cross-reactivity with Structurally Unrelated Compounds

The compounds were tested at a concentration of 100,000 ng/mL. For the COBAS INTEGRA analyzers, the compounds listed gave values less than 0.05% cross-reactivity. For PCP Plus, the compounds listed gave values less than 0.018% (18 ng/mL) cross-reactivity. If indicated, the data applies only to the COBAS INTEGRA (I), Roche/Hitachi (H), or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	I Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoyllecgonine	Cocaine metabolite
Benzphetamine	Didrex
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Carbamazepine	I Tegretol
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Cocaine	Cocaine/crack
Codeine	ARAP/Empracet
Cyclobenzaprine	I Flexeril
Dextropropoxyphene	Darvon
Diazepam	Valium
Diclofenac	I Arthrotec
Diphenhydramine	OTC/Benadryl
Dopamine	–
Doxepin	Doxetel
Doxylamine	I Unisom/Bendectin
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenopropfen	Nalfon
Flecainide	I Tambacor

Generic Name	Trade Name* or Use
Flunitrazepam	I Rohypnol
Desmethyflunitrazepam	I Flunitrazepam metabolite
3-hydro-flunitrazepam	I Flunitrazepam metabolite
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaicol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	–
<i>p</i> -Hydroxyamphetamine	–
Hydroxyzine	I –
Ibuprofen	OTC/analgesic
Imipramine	I Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	I Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
MDA	Methylenedioxyamphetamine
MDMA Ecstasy	Methylenedioxymethamphetamine
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	HC –
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Morphine	morphine
Naloxone	–
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nordoxepin	I Sinequan/Adapin metab.
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Nortriptyline	H –
Ofloxacin	I Floxin
Oxazepam	Serax
Penicillin G	Bicillin
Pentobarbital	Nembutal
<i>B</i> -Phenethylamine	PEA
Phenobarbital	Donnata/Luminal
Phenothiazine	Trilafon

Indented drugs are metabolites of the preceding drug.

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

PCP on the COBAS INTEGRA Systems/PCP Plus on the Roche/Hitachi and cobas c analyzers:

Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use	Generic Name	Trade Name* or Use
Phentermine	Ionanin	Quinine	–
Phenylbutazone	Butazolidin	Secobarbital	Seconal
<i>d</i> -Phenylpropanolamine	Norephedrine	Sulindac	Clinoril
<i>d,l</i> -Phenylpropanolamine	–	Tetracycline	Sumycin
Procaine	Novocain	Δ^9 THC-9-carboxylic acid	THC
Promethazine	Phenergan	Tetrahydrozoline	OTC/eye drops ,Visine
<i>d</i> -Pseudoephedrine	OTC/cough & cold	Trifluoperazine	Stelazine
<i>l</i> -Pseudoephedrine	–	Trimipramine	H –
Quetiapine	I Seroquel	Tyramine	Uteramin
Quinidine	Duraquin	Verapamil	Calan

I = COBAS INTEGRA

H = Roche/Hitachi

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

PCP: Additionally Tested

At the concentrations shown, tested as the parent compound, none of the following compounds interfered with the PCP assay. Not tested with the PCP Plus assay.

Generic Name	Trade Name*	Level Tested
Carbamazepine	Tegretol	1 mg/mL
Cetylpyridinium Cl	–	5 mg/mL
Clotrimazole	Lotrimin	1 mg/mL
Clozapine	Clozaril	2 mg/mL
Cotinine	Nicotine metabolite	1.5 mg/mL
<i>d</i> -Ephedrine	–	1 mg/mL
<i>l</i> -Ephedrine	Primatene	1 mg/mL
Fluoxetine	Prozac	1 mg/mL
Fluvastatin	Lescol	2 mg/mL
Hydrocodone	–	1 mg/mL
Ketoprofen	–	2 mg/mL
Labetalol	–	1 mg/mL
Lamotrigine	Lamictal	2 mg/mL
Lansoprazole	–	2 mg/mL
Levofloxacin	Levaquin	4 mg/mL
Melatonin	–	2 mg/mL
Minoxidil	Rogaine	1.5 mg/mL
Nalbuphine	Nubain	1 mg/mL
Nefazadone	Serzone	2 mg/mL
Nicotine	Tobacco component	1.0 mg/mL
Pantoprazole	Protonix	Volunteer specimen
Propranolol	–	2 mg/mL
Sertraline	Zoloft	1 mg/mL
Sulfamethoxazole	In Bactrim	3 mg/mL
Sumatriptan	Imitrex	2 mg/mL
Temazepam	Restoril	5 mg/mL
Trazodone	Desyrel	5 mg/mL
Trimethoprim	In Bactrim	4 mg/mL
Zalcitabine	DDC	2 mg/mL
Zidovudine	AZT	2 mg/mL
Zolpidem	Ambien	1.0 mg/mL

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

PCP on the COBAS INTEGRA Analyzers/PCP Plus on the Roche/Hitachi and cobas c analyzers: Potential Interferents

These compounds could potentially interfere with the PCP assay. Tested as the parent compound.

Generic Name	Trade Name* or Use	Approximate ng/mL Equivalent to 25 ng/mL PCP	Approximate Percent Cross-reactivity
		COBAS INTEGRA	
Dextromethorphan	OTC/cough	137,787	0.02
Orphenedrine	–	125,000	0.04
Promethazine	–	125,000	0.03
Venlafaxine	Effexor	500,000	0.007

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

These compounds could potentially interfere with the PCP Plus assay. Tested at 100,000 ng/mL as the parent compound.

Generic Name	Trade Name* or Use	Approximate ng/mL	Approximate percent
		Equivalent to 25 ng/mL PCP	Cross-reactivity
		Roche/Hitachi and cobas c analyzers	
Amitriptyline	Elavil/Limbitrol	100,000	0.031
Desipramine	Norpramine/imipramine metabolite.	100,000	0.022
Imipramine	Tofranil	100,000	0.037

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

PCP: Cross-reactivity with Structurally Similar Compounds

Generic Name	Trade Name* or Use	Approximate ng/mL Equivalent to 25 ng/mL PCP	Approximate Percent Cross-reactivity
		COBAS INTEGRA	
Dextromethorphan	OTC cough & cold	137,787	0.02
Thienylcyclohexylpiperidine (TCP)	—	30	83

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

PCP Plus: Cross-reactivity with Structurally Similar Compounds

Generic Name	Trade Name* or Use	Approximate ng/mL Equivalent to 25 ng/mL PCP	Approximate Percent Cross-reactivity
		Roche/Hitachi and cobas c analyzers	
Dextromethorphan	OTC cough & cold	> 100,000	0.01
Ketamine	Ketalar	> 100,000	0.00
Thienylcyclohexylpiperadine (TCP)	–	49	51

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Propoxyphene on the COBAS INTEGRA/Propoxyphene Plus on the Roche/Hitachi and cobas c analyzers:

Cross-reactivity with Structurally Unrelated Compounds

The compounds were tested at a concentration of 100,000 ng/mL. For the COBAS INTEGRA none of the compounds listed gave values greater than 0.1% (100 ng/mL) cross-reactivity. For the Roche/Hitachi none of the compounds gave values greater than 0.133% (133 ng/mL) cross-reactivity. The data applies to all systems unless otherwise noted that it applies only to the COBAS INTEGRA (I), Roche/Hitachi (H), or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d</i> -Amphetamine	Adderall/Dexedrine
<i>l</i> -Amphetamine	Adderall/Cydril
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoylcegonine	Cocaine metabolite
Benzphetamine	Didrex
<i>d,l</i> -Brompheniramine	–
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Chlordiazepoxide	Librium
Chloroquine	Aralen
<i>d,l</i> -Chlorpheniramine	OTC/cough & cold
<i>d</i> -Chlorpheniramine	I cough & cold
Chlorpromazine	Thorazine
Clemastine	–
Cocaine	crack
Codeine	Empracet
Cyclizine	I Marezine
Desipramine	Norpramine/imipramine metabolite
Dextromethorphan	OTC/cough and cold
Diazepam	Valium
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	Phenytoin/Dilantin
Dopamine	–
Doxepin	H,C –
Doxylamine	I –
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
17-Ethynylestradiol	–

Generic Name	Trade Name* or Use
Fenoprofen	Nalfon
Flecainide	I Tambocor
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril
<i>p</i> -Hydroxyamphetamine	Paredrine
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymetham-phetamine
Melanin	–
Meperidine	Demerol
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	Vicks Inhaler
Methapyrilene	Thenylene
Methaqualone	Quaalude
Methylphenidate	Ritalin
Methypylon	–
Morphine Sulfate	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nordiazepam	Nordaz
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Nortriptyline	Pamelor
Oxazepam	Serax
Penicillin G	Bicillin
Pentobarbital	Nembutal
Phencyclidine	PCP
<i>B</i> -Phenethylamine	PEA
Phenobarbital	Donnata/Luminal
Phenothiazine	trilafon
Phentermine	Ionamin
Phenylbutazone	Butazolidin
<i>d</i> -Phenylpropanolamine	Norephedrine
<i>d,l</i> -Phenylpropanolamine	OTC/cough & cold

I = COBAS INTEGRA

H = Roche/Hitachi

C = **cobas c** analyzers

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Propoxyphene on the COBAS INTEGRA/Propoxyphene Plus on the Roche/Hitachi and cobas c analyzers:

Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use	Generic Name	Trade Name* or Use
Phenyltoloxamine	–	Tetracycline	Sumycin
Procaine	Novocain	Δ^9 THC-9-carboxylic acid	THC
Procyclidine	Kemadrin	Tetrahydrozoline	OTC/eye drops ,Visine
Promethazine	Phenergan	Thioridazine	–
<i>d</i> -Pseudoephedrine	OTC/cough & cold	Trifluoperazine	Stelazine
<i>l</i> -Pseudoephedrine	–	<i>d,l</i> -Trihexyphenidyl	–
Quinidine	Duraquin	Trimipramine	–
Quinine	–	Tripelennamine	PBZ, Pyribenzamine
Secobarbital	Seconal	Tyramine	Uteramin
Sulindac	Clinoril	Verapamil	Calan

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Propoxyphene: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 300 ng/mL PPX	Approximate Percent Cross-reactivity
			COBAS INTEGRA
Norpropoxyphene	–	436	69
p-Hydroxypropoxyphene	–	836	36
Methadone	Dolophine	890,208	0.03

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Propoxyphene Plus: Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Approximate ng/mL Equivalent to 300 ng/mL PPX	Approximate Percent Cross- reactivity
			Roche/Hitachi and cobas c analyzers
Norpropoxyphene	–	424	71
p-Hydroxypropoxyphene	–	933	32
Methadone	Dolophine	> 100,000	0.1

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

THC II: Cross-reactivity with Structurally Unrelated Compounds

The compounds were tested at a concentration of 100,000 ng/mL. For COBAS INTEGRA analyzers, none of the compounds listed gave a positive response at the 20, 50, or 100 ng/mL cutoff. For Roche/Hitachi and **cobas c** analyzers none of the compounds gave values greater than 0.015% (15 ng/mL). The data applies to all analyzers unless otherwise noted that it applies only to the COBAS INTEGRA (I), Roche/Hitachi (H), or **cobas c** (C) analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
Amoxicillin	Augmentin
<i>d</i> -Amphetamine	Adderall/Dexedrine
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoyllecgonine	Cocaine metabolite
Benzphetamine	Didrex
Buprenorphine	Subutex
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Captopril	–
Chlordiazepoxide	Librium
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diazepam	Valium
Digoxin	Lanoxin
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	phenytoin/Dilantin
Dopamine	–
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
Enalapril	Vasotec
Ephedrine	–
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
Fenoprofen	Nalfon
Fluoxetine	Prozac
Flurbiprofen	–
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin

Generic Name	Trade Name* or Use
Hydrochlorothiazide	Aldoril
5-Hydroxyindole-3-acetic acid	–
5-Hydroxyindole-2-carboxylic acid	–
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lansoprazole	Prevacid
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
Mefloquine	Larium
Melanin	–
Meperidine	Demerol
Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
Methaqualone	Quaalude
Methypylon	–
Morphine sulfate	morphine
Nabilone	I Cesamet
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Nifedipine	Adalat, Procardia
Norethindrone	Norlutate
Norpseudoephedrine	–
Omeprazole	Prilosec
Oxazepam	Serax
Pantoprazole ¹	Protonix
Paroxetine	I Paxil
Penicillin G	Bicillin
Pentazocine	Talwin
Pentobarbital	Nembutal
Phencyclidine	PCP
Phenobarbital	Donnata/Luminal
Phenothiazine	Trilafon
Phenylbutazone	Butazolidin
Phenylpropanolamine	OTC/cough & cold
Procaine	Novocain
Promethazine	Phenergan
<i>d</i> -Pseudoephedrine	OTC/cough & cold
<i>l</i> -Pseudoephedrine	–
Quinidine	Duraquin
Quinine	–
Rabeprazole	Aciphex

I = COBAS INTEGRA

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

THC II: Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name*
Ranitidine	Zantac
Secobarbital	Seconal
Sulindac	Clinoril
Tetracycline	Sumycin
Tetrahydrozoline	OTC/eye drops, Visine

Generic Name	Trade Name*
Tolmetin	Tolectin
Trifluoperazine	Stelazine
Verapamil	Calan
Zomepirac	—

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

THC II: Potential Interferents

The following compounds, tested as the parent compound, could potentially interfere with the THC II assay.

Generic Name	Trade Name*	System	Approximate ng/mL Equivalent to each ng/mL THC Cutoff			Approximate Percent Cross-reactivity to each ng/mL THC Cutoff		
			20	50	100	20	50	100
Niflumic Acid	Nifluril	COBAS INTEGRA	171	678	1 607	12	7	6
		Roche/Hitachi, cobas c analyzers	1,250	4,750	10,897	2	1	1

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

THC II: Cross-reactivity with Structurally Related Compounds

Generic Name	Approximate ng/mL Equivalent to 20 ng/mL Δ^9 COOH-THC & % Cross-reactivity				Approximate ng/mL Equivalent to 50 ng/mL Δ^9 COOH-THC & % Cross-reactivity				Approximate ng/mL Equivalent to 100 ng/mL Δ^9 COOH-THC & % Cross-reactivity			
	COBAS INTEGRA		R/H cobas c		COBAS INTEGRA		R/H cobas c		COBAS INTEGRA		R/H cobas c	
	ng/mL	%	ng/mL	%	ng/mL	%	ng/mL	%	ng/mL	%	ng/mL	%
8- β -11-dihydroxy- Δ^9 THC	24	84	60	34	58	86	162	31	142	71	283	35
9-carboxy-11-nor- Δ^9 THC glucuronide	29	70	45	44	62	81	93	54	132	76	174	58
9-carboxy-11-nor- Δ^8 THC	41	49	28	72	89	56	73	69	196	51	145	69
11-hydroxy- Δ^9 THC	48	42	172	12	115	44	376	13	230	43	581	17
8- α -hydroxy- Δ^9 THC	90	22	154	13	152	33	338	15	402	25	485	21
Cannabinol	898	2	3333	0.6	2031	2.5	8333	0.6	3810	2.6	25000	0.4
Δ^9 THC	1146	2	3333	0.6	2574	1.9	25000	0.2	5078	2.0	33333	0.3

R/H = Roche/Hitachi

cobas c = cobas c analyzers

Serum Benzodiazepines (SBENZ): Cross-reactivity with Structurally Unrelated Compounds

For Serum Benzodiazepines, none of the compounds listed gave a response equal to or greater than 0.3% cross-reactivity. The compounds were tested at a concentration of 10 ug/mL. SBENZ is only available on the COBAS INTEGRA analyzers.

Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol
Acetylsalicylic acid	Aspirin
Aminopyrine	–
Amitriptyline	Elavil/Limbitrol
Amobarbital	Amytal
<i>d,l</i> -Amphetamine	Adderall/Dexedrine
Ampicillin	Unasyn
Ascorbic acid	Vitamin C
Aspartame	OTC/Nutrasweet
Atropine	Altrop
Benzocaine	OTC/analgesic
Benzoyllecgonine	Cocaine metabolite
Benzphetamine	Didrex
Brompheniramine	–
Butabarbital	Butisol
Caffeine	OTC/stimulant
Calcium hypochlorite	Hypochlorous Acid
Chloroquine	Aralen
Chlorpheniramine	OTC/cough & cold
Chlorpromazine	Thorazine
Clemastine	–
Cocaine	Crack
Codeine	–
Cyclizine	Marezine
Desipramine	Norpramine/imipramine metabolite
Dextromethorphan	OTC/cough and cold
Dextropropoxyphene	Darvon
Diphenhydramine	OTC/Benadryl
Diphenylhydantoin	Phenytoin/Dilantin
Dopamine	–
Doxylamine	Unisom
Ecgonine	Cocaine metabolite
Ecgonine methyl ester	Cocaine metabolite
<i>d</i> -Ephedrine	–
<i>d,l</i> -Ephedrine	–
<i>l</i> -Ephedrine	Primatene/Ma Huang
Epinephrine	Epipen
Erythromycin	Eryped
Estriol	–
17- α -Ethinylestradiol	–
Fenoprofen	Nalfon
Furosemide	Lasix
Gentisic acid	–
Glutethimide	Doriden
Guaiacol glycerol ether	OTC/Guaifenesin
Hydrochlorothiazide	Aldoril

Generic Name	Trade Name* or Use
<i>p</i> -Hydroxyamphetamine	–
Ibuprofen	OTC/analgesic
Imipramine	Tofranil
Isoproterenol	Medihaler-Iso/Isuprel
Ketamine	Ketalar
Lidocaine	Anestacon
LSD	Lysergic Acid Diethylamide
MDA	Methylenedioxyamphet-amine
MDMA Ecstasy	Methylenedioxymetham-phetamine
Melanin	–
Meperidine	Demerol
<i>d,l</i> -Methadone	Dolophine
<i>d</i> -Methamphetamine	Desoxyn
<i>l</i> -Methamphetamine	Vicks Inhaler
Methapyrilene	Thenylene
Methaqualone	Quaalude
Methylphenidate	–
Methypylon	–
Morphine	Morphine
Naloxone	Narcan
Naltrexone	Depade
Naproxen	Anaprox
Niacinamide	Niacin, Vitamin B3
Norethindrone	Norlutate
<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Nortriptyline	Pamelor
Penicillin G	Bicillin
Pentobarbital	Nembutal
Phencyclidine	PCP
<i>B</i> -Phenethylamine	–
Phenobarbital	Donnata/Luminal
Phenothiazide	Trilafon
Phentermine	Ionanin
Phenylbutazone	Butazolidin
Phenylpropanolamine	OTC/cough & cold
<i>d</i> -Phenylpropanolamine	Norephedrine
<i>d,l</i> -Phenylpropanolamine	–
Phenyltoloxamine	–
Procaine	Novocain
Procyclidine	Kemadrin
Promethazine	Phenergan
<i>d</i> -Pseudoephedrine	OTC/cough & cold
<i>l</i> -Pseudoephedrine	–
Quinidine	Duraquin
Quinine	Quinamn
Secobarbital	Seconal

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Serum Benzodiazepines (SBENZ): Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use
Sulindac	Clinoril
Tetracycline	Sumycin
Δ^9 THC-9-carboxylic acid	THC
Tetrahydrozoline	OTC/eye drops, Visine
Thioridazine	–
Trifluoperazine	Stelazine

Generic Name	Trade Name* or Use
<i>d,l</i> -Trihexyphenidyl	–
Trimipramine	–
Tripelenamine	PBZ, Pyribenzamine
Tyramine	–
Verapamil	Calan
Zomepirac	–

Serum Benzodiazepines SBENZ: Cross-reactivity with structurally related compounds

Generic Name	Trade Name*	Level tested in ng/mL	Cross-reactivity % in Serum	Cross-reactivity % in Urine
7-Acetamido-flunitrazepam	–	1,000	0.47	–
7-Acetamido-flunitrazepam	–	10,000	0.2	0.3
7-Acetamido-3OH-desmethylflunitrazepam	–	10,000	ND	–
7-Acetamido-3OH-flunitrazepam	–	100,000	0.1	0.1
Alprazolam	Xanax	100	96	90
7-Amino-desmethylflunitrazepam	–	100	38	–
7-Amino-desmethylflunitrazepam	–	1,000	16.9	17.2
7-Amino-3OH-desmethylflunitrazepam	–	10,000	1.7	–
7-Amino-3OH-desmethylflunitrazepam	–	1,000	5.7	5.2
7-Amino-3OH-flunitrazepam	–	1,000	12	11.6
7-Aminoflunitrazepam	–	100	60.8	53.2
7-Amino-nitrazepam	–	100	54	55.9
Bromazepam	Lectopaml	100	63.9	64.1
Clorazepate	Tranxene	100	49.4	49.1
Chlordiazepoxide	Librium	1,000	4.1	7.2
Clonazepam	Klonopin	100	52.3	48.6
Demoxepam	–	1,000	7	7.4
Desalkylflurazepam	–	100	56.7	66.8
Desmethylchlordiazepoxide	–	1,000	4.6	3.1
Desmethylflunitrazepam	–	100	47.6	42.4
Desmethylmedazepam	–	1,000	18	18.5
Diazepam	Valium	100	104	89.1
Didesethylflurazepam	–	100	79.8	72.6
Flumazenil	Romazicon	100,000	–	ND
Flunitrazepam	Rohypnol	100	67.3	57.7
Flurazepam	Dalmane	100	96.9	63.4
3-Hydroxydesmethylflunitrazepam	–	1,000	5.9	–
3-Hydroxydesmethylflunitrazepam	–	10,000	1.8	2
4-Hydroxyalprazolam	–	100	50	48.4
<i>a</i> -Hydroxyalprazolam	–	100	84.3	83.7
Hydroxyethylflurazepam	–	100	89	80
3-Hydroxyflunitrazepam	–	1,000	13.8	13.1
4-Hydroxytriazolam	–	100	62	60.4
<i>a</i> -Hydroxytriazolam	–	100	80	78.1
Lorazepam	Ativan	1,000	17.4	17.6

ND = Not Detectable

– = Not Evaluated

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Serum Benzodiazepines (SBENZ): Cross-reactivity with Structurally Related Compounds, continued

Generic Name	Trade Name*	Level tested in ng/mL	Cross-reactivity % in Serum	Cross-reactivity % in Urine
Lormetazepam	Loramet	97	40	-
Medazepam	Nobrium	100	47	40.2
N-Methyloxazepam	–	100	63	46.3
Midazolam	Versed	100	81.8	67.9
Nitrazepam	Mogadon	100	58.1	56.2
Oxaprozin	–	10,000	0.0045	-
Oxazepam	Serax	100	46.4	39.1
Pinazepam	–	100	101.9	78.7
Prazepam	Centrax	100	89.7	63.4
Temazepam	Restoril	1,000	63	46.3
Tetrazepam	–	100	58	53.3
Triazolam	Halcion	100	79.8	75.8

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Serum Barbiturates (SBARB): Cross-reactivity with Structurally Unrelated Compounds

For Serum Barbiturates, none of the compounds listed gave a response equal to or greater than 0.2% cross-reactivity. The compounds were tested at a concentration of 10 ug/mL. SBARB is only available on the COBAS INTEGRA analyzers.

Generic Name	Trade Name* or Use	Generic Name	Trade Name* or Use
Acetaminophen	OTC/Tylenol	Guaiacol glycerol ether	OTC/Guaifenesin
Acetylsalicylic acid	Aspirin	Hydrochlorothiazide	Aldoril
Aminopyrine	–	<i>p</i> -Hydroxyamphetamine	–
Amitriptyline	Elavil/Limbitrol	Ibuprofen	OTC/analgesic
<i>d</i> -Amphetamine	–	Imipramine	Tofranil
<i>d,l</i> -Amphetamine	–	Isoproterenol	Medihaler-Iso/Isuprel
<i>l</i> -Amphetamine	–	Ketamine	Ketalar
Ampicillin	Unasyn	Lidocaine	Anestacon
Ascorbic acid	Vitamin C	LSD	Lysergic Acid Diethylamide
Aspartame	OTC/Nutrasweet	MDA	Methylenedioxyamphet- amine
Atropine	Altrop	MDMA	Methylenedioxymetham- phetamine
Benzocaine	OTC/analgesic	Melanin	–
Benzoylcegonine	Cocaine metabolite	Meperidine	Demerol
Benzphetamine	Didrex	Methadone	Dolophine
Brompheniramine	–	<i>d</i> -Methamphetamine	Desoxyn
Caffeine	OTC/stimulant	<i>l</i> -Methamphetamine	Vicks Inhaler
Calcium hypochlorite	Hypochlorous Acid	Methapyrilene	Thenylene
Chlordiazepoxide	Librium	Methaqualone	Quaalude
Chloroquine	Aralen	Methylphenidate	–
Chlorpheniramine	OTC/cough & cold	Methypylon	–
Chlorpromazine	Thorazine	Morphine	Morphine
Clemastine	–	Naloxone	Narcan
Cocaine	crack	Naltrexone	Depade
Codeine	–	Naproxen	Anaprox
Cyclizine	Marezine	Niacinamide	Niacin, Vitamin B3
Desipramine	Norpramine/imipramine metabolite	Nordiazepam	Nordaz
Dextromethorphan	OTC/cough and cold	Norethindrone	Norlutate
Dextropropoxyphene	Darvon	<i>l</i> -Norpseudoephedrine	Pseudoephedrine metabolite
Diazepam	Valium	Nortriptyline	Pamelor
Diphenhydramine	OTC/Benadryl	Oxazepam	–
Dipyrrone	Metamizol	Penicillin G	Bicillin
Dopamine	–	Phencyclidine	PCP
Doxylamine	Unisom	<i>B</i> -Phenethylamine	–
Ecgonine	Cocaine metabolite	Phenothiazine	–
Ecgonine methyl ester	Cocaine metabolite	Phentermine	Ionanin
<i>d</i> -Ephedrine	–	Phenylbutazone	Butazolidin
<i>d,l</i> -Ephedrine	–	Phenylpropanolamine	OTC/cough & cold
<i>l</i> -Ephedrine	Primatene/Ma Huang	<i>d</i> -Phenylpropanolamine	Norephedrine
Epinephrine	Epipen	<i>d,l</i> -Phenylpropanolamine	–
Erythromycin	Eryped	Phenyltoloxamine	–
Estriol	–	Procaine	Novocain
17- α -Ethinylestradiol	–	Procyclidine	Kemadrin
Fenopropfen	Nalfon	Promethazine	Phenergan
Furosemide	Lasix	<i>d</i> -Pseudoephedrine	OTC/cough & cold
Gentisic acid	–	<i>l</i> -Pseudoephedrine	–

* One or more of the trade names listed are trademarks of companies not affiliated with Roche.

Serum Barbiturates (SBARB): Cross-reactivity with Structurally Unrelated Compounds, continued

Generic Name	Trade Name* or Use
Quinidine	–
Quinine	–
Sulindac	Clinoril
Tetracycline	Sumycin
Δ^9 THC-9-carboxylic acid	THC
Tetrahydrozoline	OTC/eye drops ,Visine
Thioridazine	–
Trifluoperazine	Stelazine

Generic Name	Trade Name* or Use
<i>d,l</i> -Trihexyphenidyl	–
Trimipramine	–
Tripelenamine	PBZ, Pyribenzamine
Tyramine	–
Verapamil	Calan
Zomepirac	–
Zomepirac	–

Serum Barbiturates (SBARB): Cross-reactivity with Structurally Related Compounds

Generic Name	Trade Name*	Level tested in ug/mL	Cross-reactivity % in Serum	Cross-reactivity % in Urine
Allobarbitol	Diadol	0.05	96.2	102
Amobarbital	Amytal	1	27	–
Amobarbital	Amytal	10	18.2	16.4
Aprobarbital	Somnipron	1	85	112.9
Barbital	Barbitone	1	31	44.6
Barbituric Acid	–	1	ND	ND
Butabarbital	Butisol	1	55	–
Butabarbital	Butisol	10	25.3	25.6
Butalbital	Butisol/Plexonal	1	89	125.1
Butethal	–	1	61	77.3
Cyclopentobarbital	Cyclopal	1	89	111.3
Diallylbarbituric Acid	–	1	118	161
1,3-Dimethyl Barbituric acid	–	1	0.08	1.6
Diphenylhydantoin	Phenytoin/Dilantin	1	ND	ND
<i>d,l</i> -Glutethimide	Doriden	1	ND	ND
Hexobarbital	Hexanal	1	0.5	1.7
<i>p</i> -Hydroxyphenobarbital	Hydroxyphenobarbital	1	14	25.5
<i>p</i> -Hydroxyphenytoin	–	220	ND	ND
Mephobarbital	Phemiton	1	0.9	1.2
Pentobarbital	Nembutal	10	17.9	20.7
Phenobarbital	Donnata/Luminal	1	26	–
Phenobarbital	Donnata/Luminal	10	10.8	12.9
Thiopental	–	1	21.3	–
Thiopental	–	10	9.9	9.9

ND = Not Detectable

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