

Cross reactivity of various pharmaceuticals against the Drugs of Abuse Screening Panel (posted 2/3/09)

The following tables are only applicable to the specific analyzer and reagents used at HRHS main lab.

1. Amphetamine

(Adderall, desoxyn, Dexedrine, dextrostat, spancap, oxydess II)

CROSS REACTIVITY

Amphetamines, methamphetamines, amphetamine-like compounds, and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems AMPH assay. The following table summarizes the results obtained at the concentrations listed for each potential cross-reactant.

Table 3 Cross Reactivity^a

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
d-Methamphetamine (cutoff)	1	Positive
d-Amphetamine	1	Positive
Methylenedioxyamphetamine (MDA)	2.5	Positive
Methylenedioxymethamphetamine (MDMA)	2.5	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
l-Amphetamine	12.5	Negative
Benzoyllecgonine	1000	Negative
Benzphetamine	20	Negative
Bupropion	50	Negative
Buspirone	1000	Negative
Caffeine	1000	Negative
Chlorpromazine	500	Negative
Codeine	1000	Negative
Dextromethorphan	1000	Negative
d-Ephedrine	400	Negative
d,l-Ephedrine	500	Negative
l-Ephedrine	350	Negative
Fenfluramine	4	Negative
3-Hydroxy-Tyramine	500	Negative
Isoxsuprine	100	Negative
Meperidine	1000	Negative
Mephentermine	25	Negative
Methadone	1000	Negative
l-Methamphetamine	10	Negative

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Methapyrilene	500	Negative
Morphine	1000	Negative
Nor-pseudoephedrine	1000	Negative
Oxazepam	500	Negative
Phencyclidine	1000	Negative
Phendimetrazine	200	Negative
Phenethylamine	10	Negative
Phenmetrazine	50	Negative
Phenobarbital	1000	Negative
Phenothiazine	10	Negative
Phentermine	25	Negative
Phenylephrine	500	Negative
Phenylpropanolamine (PPA)	250	Negative
Procainamide	20	Negative
Promethazine	500	Negative
Propranolol	200	Negative
d-Pseudoephedrine	250	Negative
l-Pseudoephedrine	3000	Negative
Ranitidine	1000	Negative
Scopolamine	100	Negative
Secobarbital	1000	Negative
Setraline	1000	Negative
Thioridazine	1000	Negative
Trifluoperazine	1000	Negative
Triflupromazine	1000	Negative
Trazodone	1000	Negative
Tyramine	500	Negative

2. Barbiturate

(alurate, amytal, bellatol, butasole, fiorinal, luminal, nembutal, seconal, solfiton, tuinal)

CROSS REACTIVITY

Barbiturates and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems BARB assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.

Table 3 Cross Reactivity^a

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Secobarbital (cutoff)	0.2	Positive
Alphenal	0.25	Positive
Amobarbital	0.3	Positive
Aprobarbital	0.2	Positive
Barbital	1.5	Positive
Butabarbital	0.25	Positive
Butalbital	0.4	Positive
Butethal	0.3	Positive
Diallylbarbital	0.6	Positive
Pentobarbital	0.5	Positive
Phenobarbital	0.8	Positive
Talbutal	0.08	Positive
Thiopental	0.8	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
d-Amphetamine	1000	Negative
Caffeine	100	Negative
Codeine	1000	Negative
Diphenhydramine	500	Negative
Glutethimide	80	Negative
5-OH-Phenyl-5-phenyl-hydantoin (HPPH)	500	Negative
Meperidine	1000	Negative
Methadone	1000	Negative
Methsuximide	100	Negative
Morphine	1000	Negative
Normethsuximide	100	Negative
Oxazepam	500	Negative
Phencyclidine	1000	Negative
Phenytoin (DPH)	500	Negative
Propoxyphene	1000	Negative

3. Benzodiazepine

(ativan, dalmane, halcyon, klonipin, Librium, mitran, narcozep, restoril, rophynol, serax, tranxene, valium, xanax)

CROSS REACTIVITY

Benzodiazepines and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the systems BNZG assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.

Table 5 Cross Reactivity (For reagent lots prior to M607029)^d

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Oxazepam (cutoff)	0.2	Positive
Alprazolam	0.2	Positive
α-Hydroxy-Alprazolam	0.1	Positive
7-Aminoclonazepam	0.8	Positive
7-Aminoflunitrazepam	0.5	Positive
7-Aminonitrazepam	0.75	Positive
Bromazepam	0.3	Positive
Chlordiazepoxide	0.3	Positive
Clobazam	0.5	Positive
Clonazepam	0.3	Positive
Delorazepam	0.1	Positive
Desalkylflurazepam	0.1	Positive
N-Desmethylflunitrazepam	0.3	Positive
Diazepam	0.05	Positive
Flunitrazepam	0.2	Positive
Flurazepam	0.1	Positive
Halazepam	0.1	Positive
α-Hydroxy-Alprazolam Glucuronide	0.125	Positive
Lorazepam	0.4	Positive
Lorazepam Glucuronide	1.0	Positive
Lormetazepam	0.2	Positive
Medazepam	0.2	Positive
Nitrazepam	0.3	Positive
Nordiazepam	0.05	Positive
Oxazepam Glucuronide	0.7	Positive
Prazepam	0.2	Positive
Temazepam	0.2	Positive
Temazepam Glucuronide	0.3	Positive
α-Hydroxy-Triazolam	0.075	Positive
Triazolam	0.05	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
d-Amphetamine	1000	Negative

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Caffeine	100	Negative
Codeine	1000	Negative
Dextromethorphan	1000	Negative
Diphenhydramine	500	Negative
Doxepine	1	Negative
Hydroxyzine	40	Negative
Mesoridazine	1000	Negative
Methadone	1000	Negative
Metronidazole	1000	Negative
Morphine	200	Negative
Oxaprozin	10	Negative
Pemoline	1000	Negative
Phencyclidine	1000	Negative
Promethazine	100	Negative
Propoxyphene	1000	Negative
Secobarbital	1000	Negative
Sertraline	500	Negative
Tramadol	1000	Negative
Trazodone	1000	Negative
Trimipramine	100	Negative
Trimethoprim	1000	Negative
Zolpidem	100	Negative

Table 6 Cross Reactivity (Starting with reagent lot M607029 and higher)^e

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Oxazepam (cutoff)	0.2	Positive
Alprazolam	0.2	Positive
α-Hydroxy-Alprazolam	0.1	Positive
7-Aminoclonazepam	0.8	Positive
7-Aminoflunitrazepam	0.5	Positive
7-Aminonitrazepam	0.75	Positive
Bromazepam	0.3	Positive
Chlordiazepoxide	0.3	Positive
Clobazam	0.7	Positive
Clonazepam	0.3	Positive
Delorazepam	0.1	Positive
Desalkylflurazepam	0.1	Positive
N-Desmethylflunitrazepam	0.3	Positive
Diazepam	0.05	Positive
Flunitrazepam	0.2	Positive
Flurazepam	0.1	Positive
Halazepam	0.15	Positive
α-Hydroxy-Alprazolam Glucuronide	0.2	Positive
Lorazepam	0.4	Positive

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Lorazepam Glucuronide	1.0	Positive
Lormetazepam	0.2	Positive
Medazepam	0.2	Positive
Midazolam	0.1	Positive
Nitrazepam	0.3	Positive
Nordiazepam	0.05	Positive
Oxazepam Glucuronide	0.7	Positive
Prazepam	0.2	Positive
Temazepam	0.2	Positive
Temazepam Glucuronide	0.35	Positive
α-Hydroxy-Triazolam	0.15	Positive
Triazolam	0.15	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
d-Amphetamine	1000	Negative
Caffeine	100	Negative
Codeine	1000	Negative
Dextromethorphan	1000	Negative
Diphenhydramine	500	Negative
Doxepine	1	Negative
Hydroxyzine	40	Negative
Mesoridazine	1000	Negative
Morphine	200	Negative
Oxaprozin	25	Negative
Pemoline	1000	Negative
Phencyclidine	1000	Negative
Promethazine	100	Negative
Propoxyphene	1000	Negative
Secobarbital	1000	Negative
Sertraline	500	Negative
Tramadol	1000	Negative
Trazodone	1000	Negative
Trimipramine	100	Negative
Trimethoprim	1000	Negative
Zolpidem	100	Negative

4. Cocaine

(no trade names)

CROSS REACTIVITY

Cocaine and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems COCM assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.

Table 3 Cross Reactivity^a

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Benzoyllecgonine (cutoff)	0.3	Positive
Cocaine	50	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
Amobarbital	1000	Negative
d-Amphetamine	1000	Negative
Benzocaine	1000	Negative
Caffeine	100	Negative
Codeine	1000	Negative
Dextromethorphan	100	Negative
Ecgonine	10	Negative
Ecgonine Methyl Ester	10	Negative
Lidocaine	1000	Negative
Lysergic Acid	100	Negative
Meperidine	1000	Negative
Methadone	1000	Negative
Metoclopramide	1000	Negative
Metronidazole	1000	Negative
Morphine	200	Negative
Nicotine	500	Negative
Oxazepam	100	Negative
Phencyclidine	1000	Negative
Phenobarbital	1000	Negative
Propoxyphene	1000	Negative
Secobarbital	1000	Negative

5. Methadone

(dolophine, methadone)

CROSS REACTIVITY

Methadone metabolites and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems METD assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.^a

Table 3 Cross Reactivity^b

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Methadone (cutoff)	0.3	Positive
Methadol	0.75	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
Amitriptyline	50	Negative
d-Amphetamine	1000	Negative
Benzoylcegonine	400	Negative
Caffeine	100	Negative
Carbamazepine	20	Negative
Cocaine	200	Negative
Codeine	500	Negative
Dextromethorphan	250	Negative
Diphenhydramine	1000	Negative
Doxylamine	100	Negative
EDDP (Methadone Metabolite) ^c	10	Negative
EMDP (Methadone Metabolite) ^d	10	Negative
Ephedrine	1000	Negative
Imipramine	50	Negative
l-α-Acetylmethadol (LAAM)	5	Negative
Labetalol	1000	Negative
Meperidine	150	Negative
Methaqualone	100	Negative
Metronidazole	1000	Negative
Morphine	200	Negative
Naloxone	1000	Negative
Naltrexone	1000	Negative
Nortriptyline	50	Negative
Orphenadrine	1000	Negative
Oxazepam	500	Negative
Phencyclidine	500	Negative
Phenobarbital	1000	Negative
Phenothiazine	1000	Negative

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Phenytoin	40	Negative
Primidone	24	Negative
Promethazine	100	Negative
Propoxyphene	250	Negative
Ranitidine	1000	Negative
Secobarbital	1000	Negative
Sertraline	1000	Negative
Theophylline	50	Negative
Valproic Acid	150	Negative
Verapamil	1000	Negative

6. Methaqualone

(no longer available in US)

CROSS REACTIVITY

Methaqualone and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems METQ assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.^a

Table 3 Cross Reactivity^b

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Methaqualone (cutoff)	0.3	Positive
2`-Hydroxy-methaqualone	3	Positive
3`-Hydroxy-methaqualone	0.5	Positive
4`-Hydroxy-methaqualone	0.5	Positive
Mecloqualone	0.5	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
Amitriptyline	50	Negative
d-Amphetamine	1000	Negative
Benzoylcegonine	1000	Negative
Caffeine	1000	Negative
Carbamazepine	20	Negative
Codeine	1000	Negative
Dextromethorphan	1000	Negative
Diphenhydramine	500	Negative
Meperidine	1000	Negative
Methadone	500	Negative
Metronidazole	1000	Negative
Morphine	1000	Negative
Nortriptyline	50	Negative
Oxazepam	1000	Negative
Phencyclidine	1000	Negative
Phenobarbital	1000	Negative
Phenytoin	40	Negative
Primidone	24	Negative
Promethazine	1000	Negative
Propoxyphene	1000	Negative
Secobarbital	1000	Negative
Theophylline	40	Negative
Valproic Acid	150	Negative

7. Opiates

(anexsia, dilaudid, phenaphen, oramorph, oxycontin, vicodin, Percocet, percodan, roxanol, tylox, zydone)

NOTE

Re: urine drug screens for oxycodone

The EIA drug screen panel we use has a high threshold level for detection of oxycodone on the opiate group analysis. It is 17 micrograms/L. (17000 ng/mL)

The peak blood concentration of oxycontin after an 80 mg. oral dose is 98 nanograms/mL at about 2 hours. The half life of quick release oxycodone is 3 hours and for oxycontin 4.5 hours. **Thus, the urine drug screen panel we have will NOT detect a high therapeutic dosage. The drug screen panel is useful for overdose, not monitoring whether a patient is taking a therapeutic level.**

For this latter purpose, you should order a urine quantitative oxycodone level. Of course, keep in mind that the half life is a matter of 3-4.5 hours and if the test is obtained the following day after the last dose, the concentration may be non detectable, so it is important that the urine sample be done the same day as dosing.

CROSS REACTIVITY

Various opiate compounds, metabolites and potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems OP assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.^a

Table 3 Cross Reactivity^b

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Morphine (cutoff)	0.3	Positive
Codeine	0.2	Positive
Dihydrocodeine	0.6	Positive
Hydrocodone	1	Positive
Hydromorphone	0.9	Positive
Levorphanol	5	Positive
Morphine-3-glucuronide	0.7	Positive
Norcodeine	100	Positive
Oxycodone	17	Positive
Albuterol	1000	Negative
Amitryptiline	100	Negative
d-Amphetamine	1000	Negative
Benzoylecgonine	1000	Negative
Caffeine	10	Negative
Chlorpromazine	10	Negative

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Clomipramine	100	Negative
Cycloazocine	35	Negative
Desipramine	100	Negative
Dextromethorphan	100	Negative
Doxepine	100	Negative
Ephedrine	10000	Negative
Fentanyl	100	Negative
Fluoxetine	100	Negative
Fluphenazine	100	Negative
Imipramine	100	Negative
Mayprotiline	100	Negative
Meperidine	20	Negative
Methadone	500	Negative
Methapyrilene	1000	Negative
Metronidazole	1000	Negative
Nalbuphine	1000	Negative
Naloxone	100	Negative
Naltrexone	2000	Negative
Normorphine	20	Negative
Nortriptyline	100	Negative
Oxazepam	250	Negative
Oxymorphone	37	Negative
Phencyclidine	1000	Negative
Phenobarbital	1000	Negative
Ranitidine	>1000	Negative
Secobarbital	1000	Negative
Thebaine	2	Negative
Thioridazine	100	Negative
Tramadol	100	Negative

8. PCP

(no trade names)

CROSS REACTIVITY

Various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems PCP assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.^a

Table 3 Cross Reactivity^b

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Phencyclidine (cutoff)	0.025	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
Amobarbital	1000	Negative
d-Amphetamine	1000	Negative
Benzoyllecgonine	1000	Negative
Brompheniramine	50	Negative
Chlorophiramine	50	Negative
Chlorpromazine	100	Negative
Dextromethorphan	1000	Negative
Diphenhydramine	100	Negative
EMDP (Methadone Metabolite) ^c	100	Negative
Imipramine	500	Negative
Ketamine	100	Negative
Meperidine	50	Negative
Methadone	1000	Negative
Methaqualone	100	Negative
Metronidazole	1000	Negative
Morphine	200	Negative
Naltrexone	10	Negative
Norpropoxyphene	100	Negative
Orphenadrine	200	Negative
Oxazepam	1000	Negative
1-Phenylcyclohexylamine (PCA)	50	Negative
1-Piperidinocyclohexane carbonitrile (PCC)	100	Negative
Phenobarbital	1000	Negative
Promethazine	100	Negative
Propoxyphene	1000	Negative
Thioridazine	80	Negative
Triprolidine	10	Negative

9. Propoxyphene

(darvocet, darvon, dolene, propacet, wygesic)

CROSS REACTIVITY

Propoxyphene and various potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems PROX assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.^a

Table 3 Cross Reactivity^b

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
Propoxyphene (cutoff)	0.3	Positive
Norpropoxyphene	0.5	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
Amitriptyline	50	Negative
d-Amphetamine	1000	Negative
Benzoylcegonine	1000	Negative
Caffeine	100	Negative
Carbamazepine	20	Negative
Chlorpromazine	10	Negative
Codeine	500	Negative
Dextromethorphan	200	Negative
Diphenhydramine	500	Negative
Doxylamine	100	Negative
Imipramine	100	Negative
Methadone	100	Negative
Methaqualone	500	Negative
Metronidazole	1000	Negative
Morphine	20	Negative
Nortriptyline	500	Negative
Oxazepam	300	Negative
Phencyclidine	400	Negative
Pheniramine	100	Negative
Phenobarbital	1000	Negative
Phenytoin	40	Negative
Primidone	24	Negative
Secobarbital	1000	Negative
Theophylline	40	Negative
Valproic Acid	150	Negative

10.Cannabinoids

(no trade names)

CROSS REACTIVITY

Various THC metabolites and potential interfering substances in a human urine matrix were tested for cross-reactivity with the SYNCHRON Systems THC5 assay. The following table summarizes the results obtained at the concentrations tested for each potential cross-reactant.^a

Table 3 Cross Reactivity^b

COMPOUND	CONCENTRATION (µg/mL)	EFFECT
I-11-Nor- Δ^9 -THC-9-COOH (cutoff) ^c	0.05	Positive
Cannabinol	0.15	Positive
I-11-Nor- Δ^8 -THC-9-COOH	0.07	Positive
8- β -11-Dihydroxy- Δ^9 -THC	0.08	Positive
11-Hydroxy- Δ^9 -THC	0.13	Positive
8- β -Hydroxy- Δ^9 -THC	0.14	Positive
Δ^9 -THC	0.05	Positive
Acetaminophen	1000	Negative
Acetylsalicylic Acid	1000	Negative
Albuterol	1000	Negative
Amobarbital	1000	Negative
d-Amphetamine	1000	Negative
Benzoyllecgonine	1000	Negative
Caffeine	100	Negative
Cannabidiol	10	Negative
Cocaine	200	Negative
Codeine	1000	Negative
Dextromethorphan	1000	Negative
Ibuprofen	1000	Negative
Meperidine	1000	Negative
Methadone	1000	Negative
d-Methamphetamine	1000	Negative
Morphine	200	Negative
d-11-Nor- Δ^9 -THC-9-COOH ^d	0.1	Negative
Oxazepam	500	Negative
Phencyclidine	1000	Negative
Phenobarbital	1000	Negative
Propoxyphene	1000	Negative
Secobarbital	1000	Negative