

Substances that Cross-react

The specificity of the VITROS AMPH assay for various amphetamines and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of a compound that produces a value equivalent to the d-methamphetamine quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Compound	Quantity (ng/mL) equivalent to 500 ng/mL of d-methamphetamine		Quantity (ng/mL) equivalent to 1000 ng/mL of d-methamphetamine	
	Quantity (ng/mL)	% cross-reactivity*	Quantity (ng/mL)	% cross-reactivity*
d-methamphetamine	500	100.0	1000	100.0
d-amphetamine	500	100.0	1100	90.9
benzphetamine	513	97.5	1032	96.9
l-methamphetamine	780	64.1	2300	43.5
l-Amphetamine	3000	16.7	10,000	10.0
methylenedioxy-amphetamine (MDA)	1800	27.8	4200	23.8
methylenedioxy-ethylamine (MDEA)	3700	13.5	17,500	5.7
methylenedioxy -methamphetamine (MDMA)	3400	14.7	20,500	4.9
4-chloramphetamine	4200	11.9	21,000	4.8
mephentermine	6300	7.9	45,000	2.2
p-hydroxyamphetamine	10,000	5.0	65,000	1.5
phentermine	7500	6.7	35,000	2.9
fenfluramine	32,000	1.6	>100,000	<1.0
methoxyphenamine	100,000	0.5	>100,000	<1.0
tranylcypromine	32,000	1.6	>100,000	<1.0
propranolol	90,000	0.6	>100,000	<1.0
tyramine	>100,000	<0.5	>100,000	<1.0
bupropion	>100,000	<0.5	>100,000	<1.0
l-ephedrine	>100,000	<0.5	>100,000	<1.0
d-ephedrine	>100,000	<0.5	>100,000	<1.0
d-pseudoephedrine	>100,000	<0.5	>100,000	<1.0
l-pseudoephedrine	>100,000	<0.5	>100,000	<1.0
nor-pseudoephedrine	>100,000	<0.5	>100,000	<1.0
phenylpropanolamine	>100,000	<0.5	>100,000	<1.0
chloroquine	>100,000	<0.5	>100,000	<1.0
phenothiazine	>100,000	<0.5	>100,000	<1.0

Substances that Cross-react

The specificity of the VITROS BARB assay for various barbiturates and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of a compound that produces a value equivalent to the secobarbital quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Substances that Cross-react

Compound	Quantity (ng/mL) equivalent to 200 ng/mL of secobarbital		Quantity (ng/mL) equivalent to 300 ng/mL of secobarbital	
	Quantity (ng/mL)	% cross-reactivity*	Quantity (ng/mL)	% cross-reactivity*
alphenal	100	200	230	130
alphenal (GEN 02 and above)	318	63	535	56
talbutal	188	107	311	96
secobarbital	200	100	300	100

Compound	Quantity (ng/mL) equivalent to 200 ng/mL of secobarbital		Quantity (ng/mL) equivalent to 300 ng/mL of secobarbital	
		% cross-reactivity *		% cross-reactivity *
aprobarbital	219	91	415	72
butabarbital	238	84	472	63
butalbital	263	76	472	63
pentobarbital	281	71	472	63
cyclopentobarbital	350	57	611	49
cyclopentobarbital (GEN 02 and above)	213	94	384	78
butobarbital (butethal)	375	53	864	35
amobarbital	450	44	922	33
allobarbital (5,5-diallylbarbituric acid)	563	36	1152	26
allobarbital (5,5-diallylbarbituric acid) (GEN 02 and above)	220	91	560	54
phenobarbital	1000	20	3456	9
phenobarbital (GEN 02 and above)	451	44	3456	9
barbital	1875	11	6106	5
5-ethyl-5-(4-hydroxyphenyl)barbituric acid	2250	9	9792	3
5-ethyl-5-(4-hydroxyphenyl)barbituric acid (GEN 02 and above)	584	34	2716	11
thiopental	6250	3	40,320	<1

Substances that Cross-React

The specificity of the VITROS BENZ assay for various benzodiazepines and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of a compound that produces a value equivalent to the lorazepam quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Compound	Quantity (ng/mL) equivalent to 200 ng/mL of lorazepam		Quantity (ng/mL) equivalent to 300 ng/mL of lorazepam	
		% cross-reactivity*		% cross-reactivity*
tetrazepam	51	396	66	454
diazepam	52	385	71	422
prazepam	62	323	80	375
alprazolam	64	313	73	411
N-desmethyldiazepam / nordiazepam	78	256	97	309
1-N-hydroxyethylflurazepam	80	250	99	303
estazolam	81	247	100	300
α -hydroxyalprazolam	84	238	109	275
halazepam	88	227	110	273
ketazolam	92	217	121	248
α -hydroxytriazolam	98	204	150	200
α -hydroxyalprazolam glucuronide	98	204	129	232
N-desalkylflurazepam	103	194	138	217
triazolam	114	175	141	213

Compound	Quantity (ng/mL) equivalent to 200 ng/mL of lormetazepam		Quantity (ng/mL) equivalent to 300 ng/mL of lormetazepam	
		% cross-reactivity*		% cross-reactivity*
medazepam	118	169	163	184
nitrazepam	127	157	225	133
nitrazepam (GEN 8 and above)	289	69	525	57
midazolam	129	155	164	183
flunitrazepam	133	150	209	144
flunitrazepam (GEN 8 and above)	215	93	357	84
temazepam	146	137	203	148
flurazepam	175	114	223	134
clobazam	192	104	332	90
clobazam (GEN 8 and above)	414	48	825	36
oxazepam	220	91	319	94
clonazepam	245	82	475	63
clonazepam (GEN 8 and above)	469	43	887	34
clotiazepam	378	53	625	48
lorazepam	590	34	1070	28
bromazepam	775	26	1320	23
demoxepam	925	22	1870	16
demoxepam (GEN 8 and above)	1777	11	3636	8
7-aminoflunitrazepam	930	22	1620	18
norchlordiazepoxide	2460	8	4700	6
temazepam glucuronide	3900	5	5750	5
chlordiazepoxide	4500	4	8000	4
7-aminoclonazepam	4800	4	10,100	3
lorazepam glucuronide	>10,000	<2	>10,000	<3
oxazepam glucuronide	>10,000	<2	>10,000	<3

Substances that Cross-react

The specificity of the VITROS COCM assay for various cocaine metabolites and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of compound that produces a value equivalent to the benzoylecgonine quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Compound	Quantity (ng/mL) equivalent to 150 ng/mL of benzoylecgonine		Quantity (ng/mL) equivalent to 300 ng/mL of benzoylecgonine	
		% cross-reactivity*		% cross-reactivity*
benzoylecgonine	150	100.0	300	100.0
m-hydroxybenzoylecgonine	153	98.0	304	98.7
ecognine (GENs 1 and 2)	4450	3.4	15,325	2
ecognine (GEN 3 and above)	3494	4.3	10,231	2.9
cocaine	39,500	0.4	81,300	0.4
ecognine methyl ester	>100,000	<0.2%	>100,000	<0.3%
cocaethylene	>100,000	<0.2%	>100,000	<0.3%

Substances that Cross-react

The specificity of the VITROS Chemistry Products METD assay for various methadone metabolites and structurally similar compounds was estimated by generating a dose-response curve for each of the compounds listed below. The quantity (ng/mL) of a compound necessary to produce a value equivalent to the methadone quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may

cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Compound	Quantity (ng/mL) equivalent to 150 ng/mL of methadone		Quantity (ng/mL) equivalent to 300 ng/mL of methadone	
		% cross-reactivity*		% cross-reactivity*
L-A-methadol**	302	49.67	2625	11.43
LAAM	385	38.96	5400	5.56
thioridazine	54,000	0.28	>300,000	<0.1
EDDP	171,000	0.09	>300,000	<0.1
sertraline	300,000	0.05	>1,000,000	<0.03
EMDP	>300,000	<0.05	>300,000	<0.1

Substances that Cross-React

The specificity of the VITROS OP assay for various opiate metabolites and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of a compound that produces a value equivalent to the morphine quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Compound	Quantity (ng/mL) equivalent to 300 ng/mL of morphine (OP-LO)		Quantity (ng/mL) equivalent to 2000 ng/mL of morphine	
		% cross-reactivity *		% cross-reactivity *
codeine	191	157.1	1170	170.9
ethylmorphine	217	138.2	1106	180.8
hydrocodone	250	120	1500	133.3
dihydrocodeine	323	92.9	2070	96.6
dihydromorphine	380	78.9	5100	39.2
hydromorphone	390	76.9	3550	56.3
6-acetyl morphine	301	99.7	2163	92.5
thebaine	522	57.5	4979	40.2
heroin	409	73.3	2883	69.4
levorphanol	468	64.1	6627	30.2
morphine-3-glucuronide	601	49.9	6795	29.4
oxycodone	1979	15.1	32,748	6.1
norcodeine	3200	9.4	66,000	3
nalorphine	5500	5.5	205,000	1
nalorphine (GEN 09 and above)	2089	14.4	205,000	1
levallorphan	5688	5.3	282,867	0.7
oxymorphone	9000	3.3	>200,000	1
normorphine	19,650	1.5	437,000	0.5
mepiridine	62,000	0.5	884,335	0.2
fluphenazine	>100,000	<0.3	>200,000	<1.0
naloxone	786,700	<0.04	>5,000,000	<0.04
EDDP	>1,000,000	<0.03	>1,000,000	<0.2
methadone	>1,000,000	<0.03	>1,000,000	<0.2
nalbuphine (GEN 09 and above)	>1,000,000	<0.03	>1,000,000	<0.2

Substances that Cross-react

The specificity of the VITROS PCP assay for phencyclidine and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of a compound that produces a value equivalent to the phencyclidine quantity (ng/mL) at the cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

GEN 01

Compound	Quantity (ng/mL) equivalent to 25 ng/mL of phencyclidine	% cross- reactivity *
1-[1-(2-thienyl)-cyclohexyl]piperidine (TCP)	24	104
phencyclidine (PCP)	25	100
1-(1-phenylcyclohexyl)morpholine (PCM)	30	83
1-(1-phenylcyclohexyl)pyrrolidine (PCPy)	30	83
1-[1-(2-thienyl)-cyclohexyl]pyrrolidine (TCPy)	42	60
N,N-diethyl-1-phenylcyclohexylamine (PCDE)	95	26
mesoridazine	18,000	0.1

GEN 02 and Above

Compound	Quantity (ng/mL) equivalent to 25 ng/mL of phencyclidine	% cross- reactivity *
1-[1-(2-thienyl)-cyclohexyl]piperidine (TCP)	31	82
1-(1-phenylcyclohexyl)morpholine (PCM)	42	60
1-(1-phenylcyclohexyl)pyrrolidine (PCPy)	54	46
1-[1-(2-thienyl)-cyclohexyl]pyrrolidine (TCPy)	79	32
N,N-diethyl-1-phenylcyclohexylamine (PCDE)	249	10
mesoridazine	44,308	0.1

Substances that Cross-react

The specificity of the VITROS Chemistry Products THC assay for various cannabinoids and structurally similar compounds was estimated by generating a dose response curve for each of the compounds listed below. The quantity (ng/mL) of a compound necessary to produce a value equivalent to the 11-nor- Δ^9 -THC-9-carboxylic acid quantity (ng/mL) at each cutoff value is listed below. The combined effects of more than one compound detected in a sample may cause levels lower than those listed below to produce a value approximately equivalent to or greater than the cutoff value.

Compound	Quantity (ng/mL) equivalent to 20 ng/mL of 11-nor- Δ^9 -THC-9-carboxylic acid		Quantity (ng/mL) equivalent to 50 ng/mL of 11-nor- Δ^9 -THC-9-carboxylic acid	
	Quantity (ng/mL)	% cross-reactivity*	Quantity (ng/mL)	% cross-reactivity*
8- β -11-dihydroxy- Δ^9 -THC	24	83.3%	60	83.3%
Δ^9 -THC	30	66.7%	86	58.1%
cannabinol	36	55.6%	121	41.3%
11-hydroxy- Δ^9 -THC	38	52.6%	105	47.6%
cannabidiol	6550	0.3%	24500	0.2%