Ver1.0

Saliva Drug Test Pen

INSTRUCTIONS FOR USE

PLEASE READ ALL THE INFORMATION IN THIS INSERT BEFORE PERFORMING THE TEST.



This package insert applies to any combination of multi-drug tests. Therefore, some information on the performance characteristics of the product may not be relevant to your test. Please refer to the labels on the packaging and the prints on the test device to identify which drugs are included in your test.

INTENDED USE

Saliva Drug Test Pen is a rapid oral fluid screening test. It's a lateral flow, one-step immunoassay for the qualitative detection of specific drugs and their principal metabolites in human oral fluid at the following cut-off concentrations.

Drug Test	Calibrator	Cut-off (ng/mL)
Amphetamine (AMP 40)	D-Amphetamine	40
Amphetamine (AMP 50)	D-Amphetamine	50
Barbiturates (BAR 20)	Secobarbital	20
Barbiturates (BAR 60)	Secobarbital	60
Benzodiazepines (BZO 10)	Oxazepam	10
Benzodiazepines (BZO 30)	Oxazepam	30
Buprenorphine (BUP)	Buprenorphine	5
Cocaine (COC 20)	Cocaine	20
Cocaine (COC 50)	Cocaine	50
Cotinine (COT 20)	Cotinine	20
Cotinine (COT 50)	Cotinine	50
Cannabinoids (THC 12)	Δ9-THC	12
Cannabinoids (THC 40)	Δ9-THC	40
Cannabinoids (THC 50)	Δ9-THC	50
Fentanyl (FTY)	Fentanyl	20
Methadone (MTD)	Methadone	30
Methamphetamine (mAMP/MET)	D-Methamphetamine	50
Methylenedioxymethamphetamine (MDMA 25)	3,4-Methylenedioxymethamp- hetamine	25
Methylenedioxymethamphetamine (MDMA 50)	3,4-Methylenedioxymethamp- hetamine	50
Methylenedioxymethamphetamine (MDMA 100)	3,4-Methylenedioxymethamp- hetamine	100
Morphine (MOP)	Morphine	15
Opiate (OPI 15)	Morphine	15
Opiate (OPI 40)	Morphine	40

Opiate (OPI 50)	Morphine	50
Oxycodone (OXY)	Oxycodone	20
Phencyclidine (PCP)	Phencyclidine	10
Propoxyphene (PPX)	Propoxyphene	25
6-Monoacetylmorphine(6-MAM 10)	6-Monoacetylmorphine	10
6-Monoacetylmorphine(6-MAM 15)	6-Monoacetylmorphine	15
6-Monoacetylmorphine(6-MAM 25)	6-Monoacetylmorphine	25
Alcohol (ALC)	Alcohol	>0.02% BAC

Configurations of the Saliva Drug Test Pen can consist of any combination of the above listed drug analytes.

It is intended for forensic use only.

This assay provides a qualitative, preliminary test result. A more specific analytical method must be used in order to obtain a confirmed result. Gas Chromatography/Mass spectrometry (GC/MS) or Liquid Chromatography/Tandem Mass Spectrometry (LC/MS-MS) are the preferred confirmatory methods. Professional judgment should be applied to any drug test result, particularly when preliminary positive results are

SUMMARY

Amphetamine is a sympathomimetic amine with therapeutic indications. The drug is often self-administered by nasal inhalation or oral ingestion

Barbiturates (BAR)

Barbiturates are central nervous system (CNS) depressants. They are used therapeutically as sedatives, hypnotics, and anticonvulsants, Barbiturates are almost always taken orally as capsules or tablets. The effects resemble those of intoxication with alcohol. Chronic use of barbiturates leads to tolerance and physical dependence.

Benzodiazepines are medications that are frequently prescribed for the symptomatic treatment of anxiety and sleep disorders

Buprenorphine (BUP)

Buprenorphine is a potent analgesic often used in the treatment of opioid addiction. Therapeutically, Buprenorphine is used as a substitution treatment for opioid addicts. Substitution treatment is a form of medical care offered to opiate addicts (primarily heroin addicts) based on a similar or identical substance to the drug normally used. In substitution therapy, Buprenorphine is as effective as Methadone but demonstrates a lower level of physical dependence.

Cocaine (COC)

Cocaine derived from leaves of coca plant, is a potent central nervous system stimulant and a local anesthetic. Among the psychological effects induced by using cocaine are euphoria, confidence and a sense of increased energy, accompanied by increased heart rate, dilation of the pupils, fever, tremors and sweating.

Cotinine (COT)

Cotinine is the first-stage metabolite of nicotine, a toxic alkaloid that stimulates the autonomic ganglia and central nervous system in humans. Nicotine is a drug to which virtually every member of a tobacco-smoking society is exposed whether through direct contact or second-hand inhalation. Aside from tobacco, nicotine is also commercially available as the active ingredient in smoking replacement therapies such as nicotine qum, transdermal patches and nasal sprays. Regardless of whether nicotine in a donor was derived from tobacco use or through a nicotine-replacement therapy, if the metabolite cotinine is present in sufficient concentration, the test result will be positive Although nicotine is excreted in saliva, the relatively short half-life of the drug makes it an unreliable marker for tobacco use. Cotinine, however, demonstrates a substantially longer half-life than nicotine, bears a high correlation with plasma cotinine levels and has been found to be the best marker for smoking status compared with saliva nicotine measurements, breath carbon monoxide testing and plasma thiocyanate testing.

Cannabinoids (THC)

Cannabinoids is a hallucinogenic agent derived from the flowering portion of the hemp plant. The active ingredients in Cannabinoids, THC & Cannabinol can be metabolized and excreted as 11-nor-Δ9-tetrahydro cannabinol-9-carboxylic acid with a half-life of 24 ours. It can be detected for 1 to 5 days after use. Smoking is the primary method of use of Cannabinoids/cannabis. Higher doses used by abusers produce central nervous system effects, altered mood and sensory perceptions, loss of coordination, impaired short-term memory, anxiety, paranoia, depression, confusion, hallucinations and increased heart rate. A tolerance to the cardiac and psychotropic effects can occur, and withdrawal syndrome produces restlessness, insomnia, anorexia and nausea

Fentanyl (FTY)

Fentanyl is an extremely fast-acting synthetic parcotic analgesic of high potency (approximately 100 to 200 times that of morphine) and short duration of action. Pharmaceutical fentanyl has been available since 1963 as an anaesthetic supplement and is available as a citrate salt for I.V or I.M injection. Transdermal patches are also available for management of chronic pain or for breakthrough cancer pain. Due to the lipophilicity of the drug, fentanyl rapidly crosses the blood-brain barrier, producing fast and pronounced CNS effect, such as a heightened euphoria and respiratory depression, and possible toxic effects which include muscle rigidity, seizures, coma, and hypotension. Fentanyl also has similar tolerance and physical dependence properties to those of morphine.

Methadone (MTD)

Methadone is a narcotic analgesic prescribed for the management of moderate to severe pain and for the treatment of opiate dependence (Heroin, Vicodin, Percocet, morphine). The pharmacology of oral methadone is very different from IV methadone. Oral methadone is partially stored in the liver for later use. IV methadone acts more like eroin. Methadone is a long-acting pain reliever producing effects that last from twelve to forty-eight hours. Ideally, methadone frees the client from the pressures of obtaining illegal heroin, from the dangers of injection, and from the emotional roller coaster that most opiates produce. Methadone, if taken for long periods and at large doses, can lead to a very long withdrawal period.

Methamphetamine (mAMP/MET)

Methamphetamine is a potent stimulant chemically related to amphetamine but with greater CNS stimulation properties. The drug is often self-administered by nasal

inhalation, smoking or oral ingestion

Methylenedioxymethamphetamine (MDMA)

MDMA is an abbreviation for the chemical methylenedioxymethamphetamine MDMA. It has street many names including Ecstasy, X, XTC, E, Love Doves, Clarity, Adam, Disco Biscuits and Shamrocks, etc. It is a stimulant with hallucinogenic tendencies, described as an empathogen as it releases mood-altering chemicals, such as cartooning and L-dopa, in the brain and may generate feelings of love and friendliness. MDMA is a Class A drug, in the same category as heroin and cocaine. The adverse effects of MOMA use include elevated blood pressure, hyperthermia, anxiety, paranoia, and insomnia.

Overdoses of MDMA can be fatal, often resulting in heart failure or heart stoke. MDMA belongs to a family of man-made drugs; its relatives include MDA (methylenediox MDMA), the parent drug of MDMA, and MDEA (methylenedioxyethyl MDMA), also known as EVE. They all share the MOMA-like effects. MDMA is administered either by oral ingestion or intravenous injection. MDMA tablets come in different sizes and colors, and often have logos such as doves on them. Its clinical dose is 50-100 mg; the threshold toxic dose is 500mg. The effects of MDMA begin 30 minutes after intake. They peak in an hour and last for 2-3 hours, it is detectible in the saliva for up to 3 days after use.

Morphine (MOP) / Opiate (OPI)

The opiates such as heroin, morphine, and codeine are derived from the resin of opium poppy. The principal metabolites of opiates are morphine morphine-3-ducuroride. normorphine and codeine with a half-life of about 3 hours. Heroin is quickly metabolized to morphine. Thus, morphine and morphine glucuronide might both be found in the saliva of a person who has taken only beroin. The body also changes codeine to morphine Thus, the presence of morphine (or the metabolite, morphine glucuronide) in the saliva indicates heroin, morphine and/or codeine use. The window of detection varies for different opiates. Codeine can be detected within one hour and up to 7-21 hours after a single oral dose. Morphine is detectable for several days after a dose

Oxycodone (OXY)

Oxycodone is a semi-synthetic opioid with a structural similarity to codeine. The drug is manufactured by modifying thebaine, an alkaloid found in the opium poppy. Oxycodone, like all opiate agonists, provides pain relief by acting on opioid receptors in the spinal cord, brain, and possibly directly in the affected tissues.

Phencyclidine (PCP)

Phencyclidine the hallucinogen commonly referred to as Angel Dust, can be detected in oral fluid as a result of the exchange of the drug between the circulatory system and the

6-Monoacetylmorphine (6-MAM)

6-Monoacetylmorphine (6-MAM) or 6-acetylmorphine (6-AM) is one of three active metabolites of heroin (diacetylmorphine), the others being morphine and the much less active 3-monoacetylmorphine (3-MAM). 6-MAM is rapidly created from heroin in the body, and then is either metabolized into morphine or excreted in the urine, 6-MAM remains in the urine for no more than 24 hours. So a urine specimen must be collected soon after the last heroin use, but the presence of 6-MAM guarantees that heroin was in fact used as recently as within the last day. 6-MAM is naturally found in the brain, but in such small quantities that detection of this compound in urine virtually quarantees that heroin has recently been consumed.

Propoxyphene (PPX)

Propoxyphene is a narcotic analgesic with similar structure to methadone. Overdose of propoxyphene can have the symptoms including analgesia, stupor, respiratory depression and coma. The half-life of propoxyphene is 8 to 24 hours. Propoxyphene reaches its peak in 1 to 2 hours after oral administration

Alcohol (ALC)

Alcohol intoxication can lead to loss of alertness, coma, death and as well as birth defects. The United States Department of Transportation (DOT) has established a blood alcohol concentration (BAC) of 0.02% (20 mg/dL) as the cut-off level at which an individual is considered positive for the presence of alcohol.

PRINCIPLE OF THE PROCEDURE

(1) Drugs of abuse test:

Saliva Drug Test Pen is a competitive immunoassay that is used to screen for the presence of drugs in oral fluid. It is a chromatographic absorbent device in which drugs or drug metabolites in a sample competitively combine to a limited number of ntibody-dye conjugate binding sites.

When the absorbent tip of the test device is immersed into the oral fluid sample the sample is absorbed into the device by capillary action, mixes with the antibody-dye conjugate, and flows across the pre-coated membrane. When sample drug levels are zero or below the target cutoff (the detection sensitivity of the test), antibody-dye conjugate binds to the drug/protein conjugate immobilized in the Test Region (T) of the device. This produces a colored test line that, regardless of its intensity, indicates a negative result

When sample drug levels are at or above the target cutoff, the free drug in the sample binds to the antibody-dye conjugate preventing the antibody-dye conjugate from binding to the drug-protein conjugate immobilized in the Test Region (T) of the device. This prevents the development of a distinct colored band in the test region, indicating a notentially positive result

To serve as a procedure control, a colored line will appear at the Control Region (C), if the

(2) Alcohol test:

Tryptamine

The alcohol test device consists of a plastic strip with a reactive pad applied at the tip. The tip, on contact with solutions of alcohol, will rapidly turn shades of green to blue to coffee depending on the amount of alcohol present. The reactive had employs a solid phase chemistry that is based on the high specificity of alcohol oxidase (ALOx) for ethyl alcohol in the presence of peroxidase and enzyme substrate such as tetramethylbenzidine (TMB) as shown in the following:

The distinct color on reactive pad could be observed in less than 20 seconds after the tin was contacted with saliva samples with the ethyl alcohol concentration greater than 0.02%. It should be pointed out that other alcohols such as methyl, propanyl and allyl alcohol would develop the similar color on the reactive pad. However, these alcohols are not normally present in saliva.

WARNINGS AND PRECAUTIONS

- For external use only. Do not swallow
- Discard after first use. The test cannot be used more than once.
- . Do not use the test kit beyond expiration date Do not use the test if the pouch is punctured or not well sealed.
- Keep out of the reach of children.
- . Do not read result after 10 minutes 7. The used test device should be discarded according to local regulations.

STORAGE AND STABILITY

- 1. Store at 35°F 86°F (2°C 30°C) in the sealed pouch up to the expiration date.
- 2. DO NOT FREEZE.
- R. Keep away from direct sunlight, moisture and heat. 4. Preferably open the pouch only shortly before the test.

MATERIALS AND COMPONENTS

REAGENTS AND MATERIALS SUPPLIED

- Saliva Drug Test Pen
 Color Chart for alcohol test interpretation (If equipped)
- Instructions for use MATERIALS REQUIRED BUT NOT PROVIDED

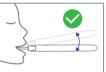
SAMPLE COLLECTION AND TEST PROCEDURE

Please read the instructions carefully before testing

- 1. Make sure the test device is at room temperature (59°F-86°F / 15°C 30°C). 2. Remove the test device from the foil pouch. Hold the grip and remove the cap to
- expose the absorbent pad. 3. Place the absorbent pad into the mouth and swab both cheeks and tongue for a few
- seconds, then place the absorbent pad in the middle of the mouth to continue collecting saliva. The absorbent pad should be touching tongue or under tongue. Make sure the test device is horizontal to prevent flooding.
- 4. Remove the test device from the mouth once the saliva can be seen travelling on the test strips. Then place the device on a flat surface. 5. Immediately start the timer
- 6-1. Interpreting Alcohol Test Result:

Read result at 2 minutes, compare the reactive pad with the provided color chart. Do not read after 2 minutes

6-2. Interpreting Drug Test Results: Read results at 5 minutes. Do not read after 10 minutes



- * When sampling, gently hold it in mouth and let oral fluid naturally adsorb on the absorbent pad. Do not force saliva into the device to prevent flooding
- * Do not eat, drink, or smoke for at least 30 minutes prior to sample collection.
- * Any oral fluid specimen is appropriate for testing but the oral fluid specimen collected in the morning, before mouth rinsed, eating or drinking, is recommended.

INTERPRETATION OF TEST RESULTS

(1) Drug test results:

Preliminary Positive (+)

A color band is visible in each control region (C). If no color band appears in the appropriate drug test region, a positive result is indicated for the corresponding drug of that specific test region

Negative (-)

If a color band is visible in each control region (C) and the appropriate drug test region, it indicates that the concentration of the corresponding drug of that specific test region is

If a color band is not visible in the control region (C) or a color band is only visible in the drug test region, the test is invalid. Another test should be run to re-evaluate the

meaning attributed to line color intensity or width



(2) Alcohol test results:

A distinct color is developed all over the pad. The positive result indicates that the BAC is 0.02% or higher. The alcohol concentration changes are related to the color chart below.

20 0.02% 0.05% 0.08%

Almost no color changes compared to that of the background. A result where the outer edges of the reagent pad produce a slight color but the majority of the pad remains the ackground color should be repeated to ensure complete saturation of the reagent pad with saliva. If the second result is the same, the results should be interpreted as being negative. The negative result indicates that the BAC is less than 0.02%.

If the reaction pad has a green color before applying saliva sample, do not use this test.

QUALITY CONTROL

(1) Drugs of abuse test:

Though there is an internal procedural control line in the test device of Control region, the use of external controls is strongly recommended as good laboratory testing practice to confirm the test procedure and to verify proper test performance. Positive and negative control should give the expected results. When testing the positive and negative control the same assay procedure should be adopted

(2) Alcohol test:

Sond I aboratory Practice recommends the daily use of control material to validate the reliability and stability of device. Commercially available controls that contain sodium azide or other preservatives that will inhibit the enzyme activity cannot be used with

Alcohol test may be qualitatively verified by using a test solution prepared by adding 10 drops of ethanol alcohol into 8 oz of distilled water. This solution should show a dist positive result. The color change indicates that the device has been properly filled and that the chemical reagents contained in the device are fully functional

LIMITATIONS OF PROCEDURE

present in the specimen below the cut-off level of the assay.

- 1. A positive test result does not indicate the concentration of drug in the specimen or the 2. A negative result may not necessarily indicate a drug-free specimen. Drug may be
- 3. The alcohol test is highly sensitive to the presence of alcohol. Alcohol vapors in the air can sometimes be detected by the test. Alcohol is a component in many household products such as disinfectants, deodorizers, and glass cleaners. If the presence of alcohol vapors is suspected, the test should be performed in an area known to be free of these vapors (such as outside)

PERFORMANCE CHARACTERISTICS

Analytical Sensitivity

(1) For the drugs of abuse test

tandard drugs were diluted into the concentrations of -50% cut-off, -25% cut-off, cut-off, +25% cut-off and +50% cut-off. The results were summarized below

Drug Concentration	۱.	AM	P 4U	AMI	2 20	BAH	(20	BAH	100	BZC	ווע	BZC	730
(Cut-off range)	n	-	+	-	+	-	+	-	+	,	+	,	+
0% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-50% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-25% Cut -off	30	27	3	28	2	26	4	29	1	27	3	26	4
Cut-off	30	17	13	12	18	10	20	12	18	16	14	13	17
+25% Cut -off	30	4	26	8	22	6	24	6	24	5	25	5	25
+50% Cut -off	30	0	30	0	30	0	30	0	30	0	30	0	30

Drug Concentration		BU	P 5	CO	C 20	CO	C 50	THO	C 12	THO	2 40	THO	50
(Cut-off range)	n	-	+	-	+	-	+	-	+	-	+	-	+
0% Cut-off	30	30	0	30	0	30	0	30	0	30	0	30	0
-50% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-25% Cut -off	30	28	2	26	4	27	3	26	4	28	2	30	0
Cut-off	30	12	18	10	20	17	13	12	18	12	18	20	10
+25% Cut -off	30	3	27	6	24	3	27	6	24	5	25	6	24
+50% Cut -off	30	0	30	0	30	0	30	0	30	0	30	0	30

Drug Concentration		MT	D 30	ME	T 50	MDN	ЛА25	MDN	1A50	MDN	1A100	OPI	15
(Cut-off range)	n	-	+	-	+	-	+	-	+	-	+	-	+
0% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-50% Cut-off	30	30	0	30	0	30	0	30	0	30	0	30	0
-25% Cut-off	30	27	3	26	4	23	7	25	5	25	5	23	7
Cut-off	30	16	14	14	16	13	17	14	16	12	18	15	15
+25% Cut -off	30	8	22	5	25	6	24	6	24	5	25	5	25
+50% Cut -off	30	0	30	0	30	0	30	0	30	0	30	0	30

0% Cut -off

Drug Concentration AMD 40 AMD 50 DAD 30 DAD 60 D70 10 D70 20

(Cut-off range)		-	+	-	+	-	+	-	+	-	+	-	+
0% Cut-off	30	30	0	30	0	30	0	30	0	30	0	30	0
50% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
25% Cut -off	30	27	3	28	2	26	4	29	1	27	3	26	4
Cut-off	30	17	13	12	18	10	20	12	18	16	14	13	17
+25% Cut -off	30	4	26	8	22	6	24	6	24	5	25	5	25

Drug Concentration		BU	P 5	COC 20		COC 50		THC 12		THC 40		THC 50	
(Cut-off range)	n	-	+	-	+	-	+	-	+	1	+	1	+
0% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-50% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-25% Cut -off	30	28	2	26	4	27	3	26	4	28	2	30	0
Cut-off	30	12	18	10	20	17	13	12	18	12	18	20	10
+25% Cut -off	30	3	27	6	24	3	27	6	24	5	25	6	24
+50% Cut -off	30	0	30	0	30	0	30	0	30	0	30	0	30

centration	_	MT	D 30	ME	T 50	MDN	1A25	MDN	1A50	MDM	IA100	OPI	15	
f range)	n	-	+	-	+	-	+	1	+	-	+	1	+	
f	30	30	0	30	0	30	0	30	0	30	0	30	0	Ana
off	30	30	0	30	0	30	0	30	0	30	0	30	0	(1) F
off	30	27	3	26	4	23	7	25	5	25	5	23	7	The
	30	16	14	14	16	13	17	14	16	12	18	15	15	Saliv
off	30	8	22	5	25	6	24	6	24	5	25	5	25	Co
off	30	0	30	0	30	0	30	0	30	0	30	0	30	An

Drug Concentratio OPI 40 OPI 50 MOP 15 OXY 20 PCP 10 COT 20 - + - + - + - + - + 30 30 0 30 0 30 0 30 0 30 0 30 0 30 0 50% Cut -off 30 30 0 30 0 30 0 30 0 30 0 30 0 25% Cut -off 30 29 1 28 2 26 4 28 2 24 6 25 5 30 10 20 10 20 12 18 12 18 14 16 17 Cut-off +25% Cut -off +50% Cut -off

Drug Concentration		CO.	T 50	PP	X 25	6-MA	M 10	6-MA	M 15	6-MA	M 25	FTY	/ 20
(Cut-off range)	n	-	+	-	+	-	+	-	+	-	+	-	+
0% Cut-off	30	30	0	30	0	30	0	30	0	30	0	30	0
-50% Cut -off	30	30	0	30	0	30	0	30	0	30	0	30	0
-25% Cut -off	30	26	4	27	3	29	1	24	6	25	5	27	3
Cut-off	30	18	12	14	16	12	18	13	17	16	14	13	17
+25% Cut -off	30	5	25	5	25	6	24	6	24	6	24	5	25
+50% Cut -off	30	0	30	0	30	0	30	0	30	0	30	0	30

(2) For the alcohol test

Oral fluid was obtained by rinsing with positive ethanol control solutions at various B.A.C (0.02%, 0.08%, 0.30%). Negative oral fluid was used to test at 0.00% concentration. For each concentration, a total of 30 tests were performed to validate the test performance.

				B.A.C									
Tes	st	n	0.0	0.02%			0.0	5%	0.0	8%	0.30%		
			-	+	-	+	-	+	-	+	-	+	
Alco	hol	30	30	0	0	30	0	30	0	30	0	30	

alytical Specificity

or the Drugs of abuse test

llowing table lists the concentration of compounds (ng/mL) above which the va Drug Test Pen identified positive results at a read time of 5 minutes:

Compound	Concentration (ng/mL)
Amphetamine (AMP 40)	
d-Amphetamine	40
d,l-Amphetamine	100

() , , , , , , , , , , , , , , , , , ,	.20
I-Amphetamine	3,200
Amphetamine (AMP 50)	
d-Amphetamine	50
d,l-Amphetamine	125
ß-Phenylethylamine	4,000
Tryptamine	1,500
p-Hydroxyamphetamine	800
(+/-) 3,4-methylenedioxyamphetamine (MDA)	150
I-Amphetamine	4,000
Barbiturates (BAR 20)	
Secobarbital	20
Amobarbital	30
Alphenal	15
Aprobarbital	20
Butabarbital	10
Butathal	10
Butalbital	250
Cyclopentobarbital	60
Pentobarbital	30
Phenobarbital	10
Barbiturates (BAR 60)	
Secobarbital	60
Amobarbital	90
Alphenal	35
Aprobarbital	60
Butabarbital	30
Butathal	30
Butalbital	750
Cyclopentobarbital	180
Pentobarbital	90
Phenobarbital	30
Benzodiazepines (BZO 10)	
Oxazepam	10
Alprazolam	6

Bromazepam	12	
Chlordiazepoxide	12	
Clobazam	6	
Clorazepate	25	
Delorazepam	25	
Desalkylflurazepam	25	
Diazepam	3	
Estazolam	3	
Flunitrazepam	100	
a-Hydroxyalprazolam	200	
(±)-Lorazepam	200	
Midazolam	25	
Nitrazepam	12	
Norchlordiazepoxide	200	
Nordiazepam	25	
Temazepam	6	
Triazolam	25	
Butethal	30	
Cyclopentobarbital	60	
Pentobarbital	150	
Pentobarbital	30	
Benzodiazepines (BZO 30) Oxazepam	30	
Alprazolam	20	
Bromazepam Chlordiazepoxide	40	
Clobazam	20	
Clorazepate	75	
Delorazepam	75	
Desalkylflurazepam	75	
Diazepam	9	
Estazolam	9	
Flunitrazepam	300	
a-Hydroxyalprazolam	600	
(±)-Lorazepam Midazolam	600 75	
Nitrazepam	40	
Norchlordiazepoxide	600	
Nordiazepam	75	
	20	
Temazepam Triazolam	75	
Butethal	90	
Dutetrial	[90	

Cyclopentobarbital	180
Pentobarbital	450
Pentobarbital	90
Buprenorphine (BUP 5)	
Buprenorphine	5
Buprenorphine-3-D-Glucuronide	10
Norbuprenorphine	10
Norbuprenorphine-3-D-Glucuronide	10
Cocaine (COC 20)	
Cocaine	20
Benzoylecgonine	20
Cocaethylene	25
Ecgonine	1,500
Ecgonine methylester	12,500
Cocaine (COC 50)	
Cocaine	50
Benzoylecgonine	50
Cocaethylene	65
Ecgonine	3,750
Ecgonine methylester	31,250
Cotinine (COT 20)	
(-) Cotinine	20
S(-)-Nicotine	2,000
0.11.1 (007.50)	
Cotinine (COT 50)	50
(-) Cotinine S(-)-Nicotine	5.000
o(-)-ivicotine	3,000
Cannabinoids (THC 12)	
11-nor-Δ9 -THC-9-COOH	12
11-nor-∆8-THC-9-COOH	7
11-hydroxy-∆9 -THC	600
Δ8-THC	1,800
Δ9-THC	2,400
Cannabinol	24,000
Cannabidiol	24,000
Cannabinoids (THC 40)	
Califiabiliolos (THC 40)	T
11-nor-Δ9 -THC-9-COOH	40

11-nor-Δ8-THC-9-C00H	30		
11-hydroxy-Δ9 -THC	2.000		
Δ8-THC	7,500		
Δ9-THC	10,000		
Cannabinol	10.000		
Cannabidiol	100,000		
Cannabinoids (THC 50)			
11-nor-Δ9 -THC-9-C00H	50		
11-nor-∆8-THC-9-COOH	30		
11-hydroxy-∆9 -THC	2,500		
Δ8-THC	7,500		
Δ9-THC	10,000		
Cannabinol	10,000		
Cannabidiol	100,000		
Fentanyl 20 (FTY 20)			
Fentanyl	20		
Carfentanyl	50		
Sufentanyl	150		
Alfentanyl	>10,000		
Norfentanyl	>10,000		
Buspirone	>10,000		
Methadone (MTD 30)			
Methadone	30		
Doxylamine	5,000		
Methamphetamine (mAMP/MET 50)			
d-Methamphetamine	50		
Fenfluramine	10,000		
p-Hydroxymethamphetamine	400		
Methoxyphenamine	25,000		
3,4-Methylenedioxymethamphetamine(MDMA)	500		
I-Phenylephrine	4,000		
Procaine	2,000		
(1R,2S)-(-) Ephedrine	400		
Methylenedioxymethamphetamine (MD			
3,4-Methylenedioxymethamphetamine (MDMA)			
3.4-Methylenedioxyamnhetamine (MDA)	250		

3,4-Methylenedioxymethamphetamine (MDMA)	50
3,4-Methylenedioxyamphetamine (MDA)	250
3,4-Methylenedioxyethylamphetamine (MDEA)	60
Methylenedioxymethamphetamine (MD	MA 100)
3,4-Methylenedioxymethamphetamine (MDMA)	
3,4-Methylenedioxyamphetamine (MDA)	250
3,4-Methylenedioxyethylamphetamine (MDEA)	60
Opiate (OPI 15)	
Morphine	15
Codeine	15
Ethylmorphine	40
Heroin	15
Hydrocodone	90
Hydromorphine	40
Levorphanol	540
σ-Monoacetylmorphine	40
Morphine 3-β-D-glucuronide	15
Norcodeine	90
Normorphone	400
Oxycodone	200
Oxymorphine	200
Procaine	1,125
Thebaine	750
Opiate (OPI 40)	
Morphine	40
Codeine	40
Ethylmorphine	100
Heroin	40
Hydrocodone	250
Hydromorphine	100
Levorphanol	1,500
σ-Monoacetylmorphine	100
Morphine 3-β-D-glucuronide	40
Norcodeine	250
Normorphone	1,000
Oxycodone	500
Oxymorphine	500
Procaine	3,000
Thohaina	2.000

- 1	50
	50
	125
\neg	50
\neg	300
\neg	125
	1,800
	125
	50
\neg	300
	1,250
	625
	625
\neg	3,750
	2,500
	15
\neg	250
\neg	250
\neg	50
\neg	20
	1,250
\neg	500
	1,500
_	20
\rightarrow	4,000
-+	10,000
\rightarrow	300,000 11.000
-+	>10.000
\rightarrow	>10,000
\rightarrow	>10,000
	× 10,000
	10
\neg	12,500

Propoxyphene (PPX)			
d-Propoxyphene	25		
d-Norpropoxyphene	25		
2.00			
6-Monoacetylmorphine (6-MAM 10)			
6-Monoacethylmorphine	10		
Codeine	10		
Ethylmorphine	200		
Hydrocodone	2,000		
Hydromorphone	100		
Levorphanol	50		
Morphine 3-β-D-glucuronide	30		
Morphine	10		
Norcodeine	200		
Normorphone	2,000		
Oxycodone	1,000		
Oxymorphone	2,000		
Procaine	500		
Thebaine	200		
6-Monoacetylmorphine (6-MAM 15)			
6-Monoacethylmorphine	15		
Codeine	15		
Ethylmorphine	300		
Hydrocodone	3,000		
Hydromorphone	150		
Levorphanol	75		
Morphine 3-β-D-glucuronide	45		
Morphine	15		
Norcodeine	300		
Normorphone	3,000		
Oxycodone	1,500		
Oxymorphone	3,000		
Procaine	750		
Thebaine	300		
6-Monoacetylmorphine (6-MAM 25)			
6-Monoacethylmorphine	25		
Codeine	25		
Ethylmorphine	500		
Hydrocodone	5,000		
Hydromorphone	250		
Levorphanol	125		

75	٦
25	
500	٦
5,000	٦
2,500	

(2) For the alcohol test

Normorphone
Oxycodone
Oxymorphone
Procaine

Morphine 3-β-D-glucuronide Morphine Norcodeine

Alcohol test will react with methyl, ethyl, and allyl alcohols. It will not react with alcohols having 5 or more carbons, nor with glycine, glycerol, or serine. This property is a result of the specificity of the alcohol oxidase. The following substances have been evaluated and do not interfere with the alcohol test at the concentration indicated.

Compound	Concentration (mg/dL)
Ethylene Glycol	20
Acetone	70
1-Propanol	10
2-Propanol	35

Cross-Reactivity

(1) For the drugs of abuse test

A study was conducted to determine the cross-reactivity of the test with the following compounds. The following compounds show no cross-reactivity when tested with the Saliva Drug Test Pen at a concentration up to 100 μg/mL.

Aminopyrine	Lofexidine
Amoxicillin	Loperamide
Ampicillin	Maprotiline
Apomorphine	Meperidine
Aspartame	Meprobamate
Aspirin	Methadone (except MTD tests)
Atropine	Methoxyphenamine
Benadryl	Morphinie-3-b-d-glucuronide (except MOP, OPI tests)
Benzilic acid	N-Acetylprocainamide
Benzoic acid	Nalidixic acid
Benzoylecgonine (except COC test)	Naloxone
Bilirubin	Naltrexone
Cannabidiol (except THC test)	Naproxen
Captopril	Niacinamide
Chloralhydrate	Nifedipine
Chloramphenicol	Nitroglycerin
Chlorothiazide	Norcodeine (except MOP, OPI tests)

Chlorpromazine	Norethindrone
Chloroquine	Noscapine
Cholesterol	O-Hydroxyhippuric acid
Clarithromycin	Omeprazole
Clonidine	Oxalic acid
Codeine (except MOP, OPI, OXY tests)	Oxazepam (except BZO test)
(-) Cotinine (except COT test)	Oxolinic acid
Cortisone	Oxymetazoline
Creatinine	Papaverine
Deoxycorticosterone	Penicillin V Potassium
Dextromethorphan	Penicillin-G
Diazepam (except BZO test)	Pentobarbital (except BAR test)
Diclofenac	Perphenazine
Diflunisal	Phencyclidine (except PCP tests)
Digoxin	Phenelzine
Diphenhydramine	Phenytoin
D L-Tryptophan	Pholcodine
D,L-Isoproterenol	Prednisone
D,L-Octopamine	Procaine (except OPI, MOP tests)
DL-Propranolol	Propranolol HCl
DL-Tyrosine	Quinine
D-Norpropoxyphene (except PPX test)	Ranitidine
D-Propoxyphene (except PPX test)	Ranitidine HCI
D-Pseudoephedrine	Salicylic acid
Dopamine HCl	Secobarbital (except BAR test)
Doxepine	Serotonin (5-Hydroxytyramine)
Doxylamine (except MTD test)	Sulfamethazine
Ecgonine methyl ester	Sulindac
β-Estradiol	Tetrahydrocortisone3-(β-Dglucuronide)
Erythromycin	Tetrahydrocortisone, 3-acetate
Estrogen	Tetrahydrozoline
Fenoprofen	Thiamine
Furosemide	Thioridazine
Gentisic acid	Triamterene
Hydralazine	Trifluoperazine
Hydrochlorothiazide	Trimethoprim
Hydrocodone (except MOP, OPI tests)	Tyramine
3-Hydroxytyramine	Uric acid
Hydrocortisone	Venlafaxine HCl
Ibuprofen	Verapamil
Isoxsuprine	Sertraline Hydrochloride
Ketamine	Zomepirac
Ketoprofen	

(2) For the alcohol test

The following substances may interfere with the alcohol test:

Strong oxidizers	Ascorbic acid
Tannic acid	Polyphenolic compopunds
Mercaptans	Uric acid
Bilirubin	Oxalic acid

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These compounds are not normally present in sufficient amount in saliva to interfere with the test. However, the precautions step must be taken so that these materials are not introduced into the mouth during the 10 minutes period proceeding to the test.

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Saliva," J Anal Tox. 1984 Sep-Oct.; 8 (5), pp 197-201

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