



DrugCheck® Dip Drug Test

The **DrugCheck® Dip Drug Test** is an immunochromatographic assay for the qualitative detection of Synthetic Cannabinoid (K2) in human urine at a cutoff concentration indicated in the table below.

The test may yield preliminary positive results when prescription drugs are ingested at prescribed doses. It is not intended to distinguish between prescription use and abuse of any drug. There are no uniformly recognized cutoff concentration levels for any drug in urine. The test provides only preliminary test results. A more specific alternative chemical method must be used in order to obtain a confirmed analytical result. Gas Chromatography/Mass Spectrometry (GC/MS) is the preferred confirmatory method. Clinical consideration and professional judgment should be exercised with any drug of abuse test result, particularly when the preliminary result is positive.

For in vitro diagnostic use and for professional testing use only.

WHAT IS DRUGCHECK® DIP DRUG TEST?

The **DrugCheck® Dip Drug Test** is a rapid test for qualitative detection of Synthetic Cannabinoid (K2) in human urine. The **DrugCheck® Dip Drug Test** yields a positive result when drug and/or its metabolite in urine is at or exceeds its cutoff concentration.

WHAT IS THE CUT-OFF VALUE?

Drug Test	Drug (Identifier)	Cut-off
Synthetic Cannabinoid (K2)	JWH-018 Pentanoic Acid / JWH-073 Butanoic Acid	20 ng/mL

PRINCIPLE

The **DrugCheck® Dip Drug Test** is an immunoassay. During testing, a urine specimen migrates upward on the test strip. A drug-positive urine specimen will not generate a colored line in the specific test line region of the strip, while a drug-negative urine specimen will generate a line in the test line region. A colored line will always appear at the control line region, indicating that proper volume of specimen has been added.

The test contains a membrane strip coated with drug-protein conjugates (purified bovine albumin) on the test line, a goat polyclonal antibody against gold-protein conjugate at the control line, and a dye pad which contains colloidal gold particles coated with mouse monoclonal antibody specific to individual drug on the list indicated in the table above.

WARNINGS AND PRECAUTIONS

- For in vitro diagnostic use and for professional testing use only.
- For external use only.
- For single use. Discard after first use.
- Do not use the test if the pouch is punctured or not well sealed.
- Do not use after expiration date.
- Keep out of the reach of children.
- The used dip test and urine specimen should be discarded according to federal, state and local regulations.

CONTENT OF THE PACKAGE

Included in package:	Not included in package:
- User Instruction	- Watch, Timer or Clock
- Dip Test (inside foil pouch)	- Collection Cup

STORAGE AND STABILITY

Store as packaged in the sealed pouch at 4°C - 30°C. The test is stable through the expiration date printed on the sealed pouch. The dip test must remain in the sealed pouch until use. Keep away from direct sunlight, moisture and heat. DO NOT FREEZE. Do not use beyond the expiration date.

WHEN TO COLLECT URINE FOR THE TEST?

You can use urine from any time of the day. The minimum detection time varies for different drugs.

HOW TO COLLECT URINE?

- When you are ready to begin, remove the dip test from the sealed foil pouch.
- Notice the colored tape on each strip indicates the name of the drug you are testing for.
- Fill the collection cup with a fresh urine sample. Do not over-fill.

HOW TO DO THE TEST?

For Single Dip Strip

- Insert the test strip into the urine sample for 10 to 15 seconds. DO NOT let the urine sample touch the conjugate pad on the strip, this could cause inconclusive drug test results. Place the test on a flat surface.
- Wait for 5 minutes (start timing immediately after dip is taken out of the urine sample). Read result at 5 minutes. DO NOT READ RESULT AFTER 5 MINUTES.

For Single Dip Cassette

- Remove the cap from the dip test. Insert the exposed test strip into the urine sample for 10 to 15 seconds. DO NOT let the urine sample touch the plastic device, this could cause inconclusive drug test results.
- Insert the cap firmly back onto the dip test and lay it on a flat surface.
- Wait for 5 minutes (start timing immediately after dip test is taken out of the urine sample). Read result at 5 minutes. DO NOT READ RESULT AFTER 5 MINUTES.

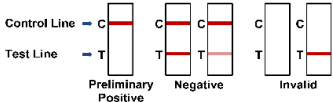
Note: Results after more than 5 minutes may not be accurate and should not be read.

READING THE RESULTS

Preliminary Positive (+): If a line appears in the C - Control area but NO line appears in the T - Test area, then it indicates a Preliminary Positive result for the corresponding drug.

Negative (-): If a line appears in both the C - Control and T - Test area, then it indicates a Negative result for the corresponding drug regardless of how dark or light the line may appear.

Invalid: If at 5 minutes, NO line appears in the C - Control area, then the results are Invalid. In such case, retest with a new dip test.



Note: Each test strip needs to be looked at individually. Each line may vary in color and darkness or the rate at which the line appears. (DO NOT compare lines within the same test strip or between different test strips).

A positive test result does not always mean a person took illegal drugs and a negative test result does not always mean a person did not take illegal drugs. There are a number of factors that influence the reliability of drug tests. Certain drugs of abuse tests are more accurate than others.

IMPORTANT: The result you obtained is called preliminary for a reason. The sample must be tested by a laboratory in order to determine if a drug of abuse is actually present.

WHAT IS A FALSE POSITIVE TEST?

The definition of a false positive test would be an instance where the test result from the **DrugCheck® Dip Drug Test** is positive, even though the initial target drug is not present in the sample. The most common causes of a false positive test are cross reactants. Certain foods and medicines, diet plan drugs and nutritional supplements may also cause a false positive test result with this product.

WHAT IS A FALSE NEGATIVE TEST?

The definition of a false negative test is that the initial target drug is present but is not detected by the **DrugCheck® Dip Drug Test**. If the sample is diluted, or if the sample is tainted or contaminated with a substance this could cause false negative results.

TEST LIMITATIONS

- The **DrugCheck® Dip Drug Test** provides only a qualitative, preliminary analytical result. A secondary analytical method must be used to obtain a confirmed result. Gas chromatography/mass spectrometry (GC/MS) is the preferred confirmatory method.
- There is a possibility that interfering substances in the urine specimen may cause erroneous results.
- Substances, such as bleach and/or alum, in urine specimens may produce erroneous results.
- A positive result does not indicate intoxication, the concentration of drug in the urine, or the route of drug administration.
- A negative result may not necessarily indicate drug-free urine. Negative results can be obtained when drug is present but below the cutoff level of the test.
- Test does not distinguish between drugs of abuse and certain medications.
- A positive test result may be obtained from certain foods or food supplements.

QUALITY CONTROL

If you work in a laboratory, you should perform quality control testing and you should read this section.

A procedural control is included in the test. A color line appearing in the control region (C) is considered an internal procedural control. It confirms sufficient specimen volume, adequate membrane wicking and correct procedural technique.

Control standards are not supplied with this kit. However, it is recommended that positive and negative controls be tested as good laboratory practice to confirm the test procedure and to verify proper test performance. Quality control testing should be done with each new lot and each new shipment. It should be done every thirty days to check storage. Please contact our Technical Support at 507-526-3951 for controls that work with the dip test.

PERFORMANCE CHARACTERISTICS

Accuracy

In the comparison study, the **DrugCheck® Dip Drug Test** was compared to a GC/MS reference method to determine its accuracy. Clinical urine samples were collected for Synthetic Cannabinoid (K2). Clinical specimens were quantified by GC/MS analysis before testing. The following results are tabulated from these clinical studies:

Analyte	Positive	Negative
Negative Samples	1	22
Near Cut-off Negative Samples [between 50% of cut-off and cut-off]		
Near Cut-off Positive Samples [between cutoff and 150% of cut-off]	37	0
Positive Samples [>150% of cut-off]		
Agreement with GC/MS	>97%	>99%

Overall Agreement with GC/MS is 98%.

Reproducibility

Reproducibility studies were carried out using commercially available stock solutions of the drug analyte listed. Dilutions were made from the stock solution of Synthetic Cannabinoid (K2) to the concentrations specified in the following table. The results are listed in the following table.

Approximate Concentration of Sample (ng/mL)	Number of Determinations	Result	Precision
0	60	60 negative	>99%
10	60	60 negative	>99%
30	60	60 positive	>99%

Analytical Sensitivity

A drug-free urine pool was spiked with drugs at concentrations listed. The results are summarized below.

Drug concentration Cut-off Range	n	K2	
		-	+
0% Cut-off	10	10	0
-50% Cut-off	10	10	0
-25% Cut-off	10	10	0
Cut-off	10	0	10
+25% Cut-off	10	0	10
+50% Cut-off	10	0	10

Analytical Specificity

The following table lists the concentration of compounds (ng/mL) that were detected positive in urine by the **DrugCheck® Dip Drug Test** at a read time of 5 minutes.

Synthetic Cannabinoid (K2)	Result
Synthetic Cannabinoid, Cutoff = 20 ng/mL)	Positive at 20 ng/mL
JWH-018 5-pentanoic acid metabolite	Positive at 20 ng/mL
JWH-073 4-butanoic acid metabolite	Positive at 20 ng/mL
MAM2201 N-pentanoic acid metabolite	Positive at 200 ng/mL
JWH-398 N-pentanoic acid metabolite	Positive at 400 ng/mL
JWH-210 N-(5-carboxypentyl) metabolite	Positive at 2,500 ng/mL
JWH-073 3-hydroxybutyl metabolite	Positive at 2,500 ng/mL
JWH-018 N-4-hydroxypentyl	Positive at 8,000 ng/mL
JWH-073 4-hydroxybutyl metabolite	Positive at 40,000 ng/mL
JWH-019 5-hydroxyhexyl metabolite	Positive at 40,000 ng/mL
JWH-018 5-hydroxypentyl metabolite	Positive at 45,000 ng/mL
JWH-122 5-hydroxypentyl metabolite	Positive at 50,000 ng/mL
JWH-122 4-hydroxypentyl metabolite	Positive at 50,000 ng/mL
JWH-019 6-hydroxyhexyl metabolite	Positive at 50,000 ng/mL
RCS-4 N-(5-carboxypentyl) metabolite	Positive at 50,000 ng/mL
Trifluoperazine dihydrochloride	Positive at 50,000 ng/mL
Trifluoperazine hydrochloride	Positive at 70,000 ng/mL
2,4,6-Trimethylbenzamide	Positive at 100,000 ng/mL

EFFECT OF URINARY SPECIFIC GRAVITY

Urine samples of normal, high, and low specific gravity ranges (1.000-1.035) were spiked with drugs at 25% below and 25% above cut-off levels respectively. The **DrugCheck® Dip Drug Test** was tested using twelve drug-free urine and spiked urine samples. The results demonstrate that varying ranges of urinary specific gravity do not affect the test results.

EFFECT OF URINARY PH

The pH of an aliquot of negative urine pool was adjusted to pH ranges of 4.0 - 9.0 and spiked with drugs at 25% below and 25% above cut-off levels. The spiked, pH-adjusted urine was tested with the **DrugCheck® Dip Drug Test**. The results demonstrate that varying ranges of pH do not interfere with the performance of the test.

INTERFERENCE

A study was conducted to determine the cross-reactivity of the test with compounds in either drug-free urine or drug positive urine containing Synthetic Cannabinoid (K2). The following compounds show no cross-reactivity when tested with the **DrugCheck® Dip Drug Test** at concentrations of 100 µg/mL.

Acebutolol Hydrochloride	Gentisic acid	Pentazocine
Acepromazine-d6 hydrochloride	D-Glucuronic acid	Perphenazine
Acetaminophen	Glutethimide	Penicillin G Sodium salt
N-Acetylprocainamide	Guaifenesin	Phenelzine sulfate salt
Acetophenetidin	Hemoglobin porcine	Phenobarbital
Alprazolam	Heroin hydrochloride	Phentermine HCL
Alphenal	Hippuric Acid	Phenylethylamine
Amoxicillin	Hydralazine hydrochloride	L-phenylephrine
Ampicillin	Hydromorphone	Phenylpropanolamine hydrochloride
Amitriptyline Hydrochloride Tablets	Hydrocodone	Prednisolone
S(+)-Amphetamine	α-Hydroxyhippuric acid	Prednisone Acetate Tablets
R(-)-Amphetamine	21-Hydroxy progesterone	Procaine HCL
Amobarbital	p-Hydroxymeth-amphetamine	Promazine hydrochloride
(±)Amphetamine	Hydrocortisone	Promethazine
R(-)-Apomorphine Hydrochloride	Hydrochlorothiazide	Propoxyphene-d-
Aprobarbital	-4-Hydroxyamphetamine HCL	Propranolol Hydrochloride
Aspirin	Ibuprofen	Pseudoephedrine
Aspartame	Imipramine	Phendimetrazine
	Ipiazid	Phenytoin

L-Ascorbic Acid	Isoxsuprine hydrochloride	Quinine
Atropine	Isoproterenol	Quinidine
6-Acetylmorphine	Hydrochloride Injection	Quinacrine
Acetylsalicylic acid	Ketamine hydrochloride	Ranitidine Hydrochloride Tablets
Benzphetamine	Ketoprofen	Nortriptyline Hydrochloride
Benzilic acid	Emetine dihydrochloride hydrate	Salicylic Acid
Benzoylcegonine		Secobarbital
SS Benzoic Acid	Ephedrine-(+/-) hydrochloride	Serotonin
Bilirubin, Mixed Isomers	(-)-Ephedrine HCL	Noroxymorphone HCL
Brompheniramine maleate	(-)-Ephedrine	Nylidrin hydrochloride
Buprenorphine	[1R,2S] (-) Ephedrine	Norfentanyl
Bupirone hydrochloride	Erythromycin	(±)-Octopamine HCL
Butalbital	Eserine	Oxalic Acid
Butabarbital	Estazolam	Oxolinic Acid
Cannabidiol	β-Estradiol	Oxycodone
Cannabinol	(±)-EDDP	Oxymetazoline
Caffeine	Ethyl-p-aminobenzoate	Papaverine
Cetirizine Hydrochloride	JWH-018 pantanoic acid	(±)-Octopamine HCL
Chlordiazepoxide HCL	JWH-073 butanoic acid	Chlorothiazide
Chlorothiazide	Labetalol Hydrochloride	Sertraline HCl
Chloroquine	Levorphanol	Sulfamethazine, min 99%
Chlorpheniramine Maleate	Loperamide Hydrochloride	Sulindac
Chlorpromazine Hydrochloride Tablets	Lorazepam	Temazepam
Chloramphenicol	Maprotiline hydrochloride	Terfenadine
ChloralHydrate	(±)-MDEA	Terbutaline
Cholesterol	(±)-MDA	Tetraethylthiuram disulfide
Chlorothiazide	Meperidine	Tetracycline
Clomipramine	Meprobamate	Tetrahydrocannabinol, Delta-8-((-)-delta-8-THC)
Clonazepam	Methamphetamine hydrochloride	
Clonidine hydrochloride	(±)Methadone	
Clozapine	S(+)-D-methamphetamine	
(-) Cotinine	L-methamphetamine	
Cocaethylene	Methylphenidate	
Cocaine Hydrochloride	(±)-MDMA	
Codeine	(±)-MDPV	
Cortisone	Methpyrlyon	
Creatinine	Morphine	
Cyclopentobarbital	Morphine-3β-D-glucuronide	
Citalopram hydrobromide	Morphine sulfate salt solution	
Dextromethorphan	Nalidixic acid	
Desipramine	Nalorphine hydrochloride	
Diazepam	Naproxen	
Diclofenac Sodium salt	Naloxone	
Dicyclomine	Naltrexone hydrochloride	
Digoxin	Nicotinamide (vitamin B3)	
4-Dimethylaminoantipyrine	Nimesulide	
Dihydrocodeine HCL	Nifedipine	
5,5-Diphenylhydantoin	Norcodeine	
Diphenhydramine	Nordoxepin hydrochloride	
Dopamine	Norfloracin Capsule	
Doxylamine	Norethisterone Tablets	
Ecgonine methylester	d-Norpropoxyphene maleate salt	
Ecgonine HCL	Noscapine	
Efavirenz	PCP	
Ethylone	Pentobarbital	
EthylMorphine		
Fenoprofen		
Furosemide		

BIBLIOGRAPHY OF SUGGESTED READING

1. Stewart DJ, Inaba T, Lucassen M, Kalow W. Clin. Pharmacol. Ther. April 1979; 25 ed: 464, 264-8.
2. Ambre J. J. Anal. Toxicol. 1985; 9:241.
3. Hawks RL, CN Chiang. Urine Testing for Drugs of Abuse. National Institute for Drug Abuse (NIDA), Research Monograph 73, 1986.

ADDITIONAL INFORMATION AND REFERENCES

The following list of organizations may be helpful to you for counseling support and resources. These groups also have an Internet address, which can be accessed for additional information.

National Clearinghouse for Alcohol and Drug Information www.health.org 1-800-729-6686

Center for Substance Abuse Treatment www.health.org 1-800-662-HELP

The National Council on Alcoholism and Drug Dependence www.ncadd.org 1-800-NCA-CALL

American Council for Drug Education (ACDE) www.acde.org 1-800-488-DRUG

SYMBOLS

	Use-By Date		Manufacturer
	Catalogue Number		Temperature Limit
	Do Not Use if Package is Damaged		Do Not Re-Use
	Keep Away from Sunlight		Consult Instructions for Use
	Keep Dry		Caution
	Batch Code		In Vitro Diagnostic Medical Device
	Authorized representative in the European Community		Contains Sufficient for <n> Tests

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