MAYO CLINIC LABORATORIES

Test Definition: OXYSX

Oxycodone Screen, Chain of Custody, Random, Urine

Overview

Useful For

Detection of oxycodone and oxymorphone in urine following chain-of-custody procedures

This chain-of-custody test is intended to be used in a setting where the test results can be used definitively to make a diagnosis. Chain of custody is required whenever the results of testing could be used in a court of law. Its purpose is to protect the rights of the individual contributing the specimen by demonstrating that it was always under the control of personnel involved with testing the specimen; this control implies that the opportunity for specimen tampering would be limited.

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
OXYCX	Oxycodone w/metabolite Conf, CoC, U	Yes	No

Additional Tests

Test Id	Reporting Name	Available Separately	Always Performed
COCH	Chain of Custody Processing	No	Yes
ADLTX	Adulterants Survey, CoC, U	Yes	Yes

Testing Algorithm

Testing begins with screening assay. If oxycodone screen is positive, then the liquid chromatography tandem mass spectrometry confirmation with quantification will be performed at an additional charge.

Adulterants testing will be performed on all chain of custody urine samples as per regulatory requirements.

Method Name

OXYSX: Immunoassay
ADLTX: Spectrophotometry (SP)

NY State Available

Yes

Specimen

Specimen Type

Urine

Ordering Guidance

This test is for situations that require the chain-of-custody process. For testing **not** requiring chain of custody, order OXYSU / Oxycodone Screen, Random, Urine

Specimen Required

Supplies: Chain of Custody Kit (T282)
Container/Tube: Chain-of-Custody Kit containing the specimen containers, seals, and documentation is required.
Specimen Volume: 20 mL
Collection Instructions: Collect a random specimen without preservative in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing.

Forms

1. Chain of Custody Request is included in the Chain-of-Custody Kit (T282).
2. If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

Specimen Minimum Volume

2.5 mL

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Refrigerated (preferred)	14 days	
	Ambient	72 hours	
	Frozen	14 days	

Clinical & Interpretive

Clinical Information

Opiates are the natural or synthetic drugs that have a morphine-like pharmacological action. Medically, opiates are used primarily for relief of pain. Opiates include morphine and drugs structurally similar to morphine (eg, codeine, hydrocodone, hydromorphone, oxycodone, oxymorphone).

Oxycodone is metabolized to noroxycodone, oxymorphone, and their glucuronides and is excreted primarily via the kidney. The presence of oxycodone greater than 100 ng/mL indicates exposure to oxycodone within 2 to 3 days prior to specimen collection.

Oxymorphone is metabolized in the liver and excreted via the kidney primarily as the glucuronide conjugates. Oxymorphone is also a metabolite of oxycodone and therefore the presence of oxymorphone could also indicate

exposure to oxycodone.

Chain of custody is a record of the disposition of a specimen to document the individuals who collected, handled, and performed the analysis. When a specimen is submitted in this manner, analysis will be performed in such a way that it will withstand regular court scrutiny.

Reference Values

ADULTERANTS SURVEY:
Cutoff concentrations:
Oxidants: 200 mg/L
Nitrites: 500 mg/L

OXYCODONE SCREEN
Negative
Screening cutoff concentration:
Oxycodone: 100 ng/mL

Interpretation

A positive result indicates that the patient has used the drugs detected in the recent past.

For information about drug testing, including estimated detection times, see Drug Class Testing on MayoClinicLabs.com.

Cautions

Other drugs in the opioid class, such as fentanyl, meperidine, methadone, and opiate antagonists such as naloxone, are not detected.

Clinical Reference

1. Anderson DT, Fritz KL, Muto JJ. Oxycontin: the concept of a "ghost pill" and the postmortem tissue distribution of oxycodone in 36 cases. J Anal Toxicol. 2002;26(7):448-459
2. Jannetto PJ, Gock SG. Oxycodone: Recognition and Pharmacogenomics. Clinical and Forensic Toxicology News 2003 March
3. Cone EJ, Fant RV, Rohay JM, et al. Oxycodone involvement in drug abuse deaths: a DAWN-based classification scheme applied to an oxycodone postmortem database containing over 1000 cases. J Anal Toxicol. 2003;27(2):57-67. doi:10.1093/jat/27.2.57
4. Baselt RC, Cravey RH. Oxycodone. In: Disposition of Toxic Drugs and Chemicals in Man. 4th ed. Chemical Toxicology Institute. 1995;572-574
5. Langman LJ, Bechtel LK, Holstege CP. Clinical toxicology. In: Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 43

Performance

Method Description

Oxycodone screen

Oxycodone and its metabolite, oxymorphone, are analyzed via immunoassay. The assay uses specific antibodies that can detect oxycodone and oxymorphone without any significant cross-reactivity to other opiate compounds. The assay is based on the competition between a drug labeled with glucose-6-phosphate dehydrogenase (G6PD) and free drug from the urine sample for a fixed amount of specific antibody binding sites. In the absence of free drug from the sample, the specific antibody binds the drug labeled with G6PD and causes a decrease in enzyme activity. This phenomenon creates a direct relationship between the drug concentration in urine and enzyme activity. The enzyme activity is determined spectrophotometrically at 340 nm by measuring the conversion of nicotinamide adenine dinucleotide (NAD) to NADH.(Package insert: OXY. Roche Diagnostics; V 3.0, 10/2022)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
2 to 3 days

Specimen Retention Time
14 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Superior Drive

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
80307

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
OXYSX	Oxycodone Screen, CoC, U	19642-8

Test Definition: OXYSX

Oxycodone Screen, Chain of Custody, Random, Urine

Result ID	Test Result Name	Result LOINC® Value
61727	Oxycodone	19642-8
36027	Chain of Custody	77202-0