MAYO CLINIC LABORATORIES

Test Definition: TAPNS

Tapentadol and Metabolite, Serum

Overview

Useful For
Monitoring medication compliance in patients who are prescribed tapentadol

Method Name
Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)

NY State Available
Yes

Specimen

Specimen Type
Serum Red

Specimen Required
Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Red top (Serum gel/SST are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 1.0 mL Serum
Collection Instructions: Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.

Specimen Minimum Volume
Serum: 0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	14 days	
	Ambient	14 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Tapentadol is a centrally acting opioid analgesic which is utilized in the treatment of moderate to moderately severe pain. This drug is rapidly absorbed and has dual mechanism of action, combining mu-opioid receptor agonism with noradrenaline reuptake inhibition in the same molecule. The primary metabolite of tapentadol is N-desmethyltapentadol. The test will be primarily used by physicians to determine if patients are compliant with the medication.

Reference Values

Tapentadol:
Therapeutic: 5-300 ng/mL

N-desmethyltapentadol:
No therapeutic range established

Cutoff concentrations by liquid chromatography tandem mass spectrometry:
Tapentadol: 0.5 ng/mL
N-desmethyltapentadol: 0.5 ng/mL

Interpretation

Serum concentrations for pain relief typically fall in the range of 5-300 ng/mL, but depend heavily on dose, frequency, and individual patient factors.

Cautions

Specimens collected in serum gel tubes are not acceptable because the drug can absorb onto the gel and lead to falsely decreased concentrations.

Clinical Reference

1. 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:Chapter 43
2. Baselt RC. Disposition of Toxic Drugs and Chemical in Man. 12th ed. Biomedical Publications; 2020
3. Jannetto PJ, Bratanow NC, Clark WA, et al. Executive Summary: American Association of Clinical Chemistry Laboratory Medicine Practice Guideline-Using Clinical Laboratory Tests to Monitor Drug Therapy in Pain Management Patients. J Appl Lab Med. 2018;2(4):489-526

Performance

Method Description

Serum samples are mixed with internal standard and extracted by protein crash with methanol. The supernatant after centrifugation is diluted with Clinical Laboratory Reagent Water. The sample is then analyzed by liquid chromatography tandem mass spectrometer.(Unpublished Mayo method)

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PDF Report
No

Day(s) Performed
Tuesday

Report Available
3 to 7 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 was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
80299

Clinical Toxicology CPT Code Client Guidance

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
TAPNS	Tapentadol and Metabolite, S	In Process

Result ID	Test Result Name	Result LOINC® Value
624021	Tapentadol	59354-1
624022	N-desmethyltapentadol	In Process