

Supersaturation Profile, Random, Urine

Test ID: SUPRA

Useful for:

Diagnosis and management of patients with renal lithiasis:

- Predicting the likely composition of the stone, in patients who have a radiopaque stone, for whom stone analysis is not available. This may help in designing a treatment program
- Identifying specific risk factors for stones formation using a random urine collection
- Monitoring the effectiveness of therapy by confirming that the crystallization potential has indeed decreased
- Evaluation of kidney excretion of acid and urine pH

Profile Information:

Test ID	Reporting Name	Available Separately	Always Performed
SRINT	Supersaturation, Random, U 1	No	Yes
RANAU	Sodium, Random, U	Yes (order KNAUR)	Yes
RAKUR	Potassium, Random, U	Yes (order RKUR)	Yes
RACAL	Calcium, Random, U	Yes (order CACR1)	Yes
RAMAG	Magnesium, Random, U	Yes (order MAGNR)	Yes
RACLU	Chloride, Random, U	Yes (order RCHLU)	Yes
RAPOU	Phosphorus, Random, U	Yes (order RPOU)	Yes
RASUL	Sulfate, Random, U	No	Yes
RACIT	Citrate Excretion, Random, U	Yes (order RCITR)	Yes
RAOXU	Oxalate, Random, U	Yes (order ROXU)	Yes
RAPHU	pH, Random, U	No	Yes
RAURA	Uric Acid, Random, U	Yes (order RURCU)	Yes
RACTU	Creatinine, Random, U	Yes (order RCTUR)	Yes
RAOSM	Osmolality, Random, U	No	Yes
RAAMM	Ammonium, Random, U	Yes (order RAMBO)	Yes

Methods:

RACIT, RAAMM RAOXU: Enzymatic

RAOSM: Freezing Point Depression

RASUL: High-Performance Ion Chromatography (HPIC)

RAMAG: Colorimetric Endpoint Assay

RACAL, RAPOU: Photometric

RAPHU: pH Meter

RANAU, RAKUR, RACLU: Potentiometric, Indirect Ion-Selective Electrode (ISE)

RACTU: Enzymatic Colorimetric Assay

RAURA: Uricase

Reference Values:

The following analytes do not have any established reference values:

Sodium, potassium, chloride, phosphorus, citrate, sulfate, and oxalate

pH: 4.5-8.0

CREATININE

> or =18 years old: 16-326 mg/dL

Reference values have not been established for patients who are <18 years of age.

OSMOLALITY

0-11 months: 50-750 mOsm/kg

> or =12 months: 150-1,150 mOsm/kg

AMMONIUM

18-77 years: 3-65 mmol/L

No reference values established for patients who are younger than 18 years or older than 77 years of age

CALCIUM

1 month-<12 months: 0.03-0.81 mg/mg creat

12 months-<24 months: 0.03-0.56 mg/mg creat

24 months-<3 years: 0.02-0.50 mg/mg creat

3 years-<5 years: 0.02-0.41 mg/mg creat

5 years-<7 years: 0.01-0.30 mg/mg creat

7 years-<10 years: 0.01-0.25 mg/mg creat

10 years-<18 years: 0.01-0.24 mg/mg creat

18 years-83 years: 0.05-0.27 mg/mg creat

Reference values have not been established for patients who are younger than 1 month of age or older than 83 years of age.

MAGNESIUM

Magnesium/Creatinine Ratio:

1 month-<12 months: 0.10-0.48 mg/mg creat

12 months-<24 months: 0.09-0.37 mg/mg creat

24 months-<3 years: 0.07-0.34 mg/mg creat

3 years-<5 years: 0.07-0.29 mg/mg creat

5 years-<7 years: 0.06-0.21 mg/mg creat

7 years-<10 years: 0.05-0.18 mg/mg creat

10 years-<14 years: 0.05-0.15 mg/mg creat

14 years-<18 years: 0.05-0.13 mg/mg creat

18 years-83 years: 0.04-0.12 mg/mg creat

Reference values have not been established for patients who are younger than 1 month of age or older than 83 years of age.

Specimen Requirements:

- Supplies:** Urine Tubes, 10 mL (T068); Sarstedt Aliquot Tube, 5 mL (T914)
- Container/Tubes:** 2 Plastic, 10-mL urine tubes and 5 plastic, 5-mL tubes
- Specimen Volume:** 40 mL
- Collection Instructions:**
1. Collect a random urine specimen and divide the urine into 7 tubes.
 2. Refrigerate specimen after collection. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH above 8 indicate bacterial contamination, and testing will be canceled. **Do not** attempt to adjust pH as it will adversely affect results

Minimum Volume: 30 mL

Specimen Stability Information:

Specimen Type	Temperature	Time
Urine	Refrigerated	14 days

Cautions:

The urine is often supersaturated with respect to the common crystalline constituents of stones, even in non-stone formers.

Individual interpretation of the supersaturation values in light of the clinical situation is critical. In particular, treatment may reduce the supersaturation with respect to one crystal type but increase the supersaturation with respect to another. Therefore, the specific goals of treatment must be considered when interpreting the test results.

CPT Code Information:

82310-Calcium
82436-Chloride
82507-Citrate excretion
82570-Creatinine
83735-Magnesium
83935-Osmolality
83945-Oxalate
83986-pH
84105-Phosphorus
84133-Potassium
84300-Sodium
84392-Sulfate
84560-Uric acid
82140-Ammonium

Day(s) Performed: Monday through Friday

Report Available: 2 to 5 days

Questions

Contact Nancy Benson, Laboratory Technologist Resource Coordinator at 800-533-1710.