

## Overview

### Useful For

Calculation to measure the protein catabolic rate

Estimation of dietary protein intake

### Method Name

Only orderable as part of a profile. For more information see SAT24 / Supersaturation Profile, 24 Hour, Urine.

Calculation

### NY State Available

Yes

## Specimen

### Specimen Type

Urine

### Specimen Required

Only orderable as part of a profile. For more information see SAT24 / Supersaturation Profile, 24 Hour, Urine.

### Specimen Minimum Volume

1 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	
	Frozen	30 days	
	Ambient	7 days	

## Clinical & Interpretive

### Clinical Information

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Urine is often supersaturated, which favors precipitation of several crystalline phases such as calcium oxalate, calcium phosphate, and uric acid. However, crystals do not always form in supersaturated urine because supersaturation is balanced by crystallization inhibitors that are also present in urine. Urinary inhibitors include ions (eg, citrate) and macromolecules but remain poorly understood.

Urine supersaturation is calculated by measuring the concentration of all the ions that can interact (potassium, calcium, phosphorus, oxalate, uric acid, citrate, magnesium, sodium, chloride, sulfate, and pH). Once the concentrations of all the relevant urinary ions are known, a computer program can calculate the theoretical supersaturation with respect to the important crystalline phases (eg, calcium oxalate).(1)

Since the supersaturation of urine has been shown to correlate with stone type,(2) therapy is often targeted towards decreasing those urinary supersaturations that are identified. Treatment strategies include alterations in diet and fluid intake as well as drug therapy, all designed to decrease the urine supersaturation.

**Reference Values**

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56-125 g/24 hours

**Interpretation**

Increased protein intake, reflected by an increased protein catabolic rate, may increase the risk of kidney stone formations.

**Cautions**

No significant cautionary statements

**Clinical Reference**

1. Werness PG, Brown CM, Smith LH, Finlayson B: EQUIL2: a BASIC computer program for the calculation of urinary saturation. *J Urol.* 1985;134:1242-1244
2. Parks JH, Coward M, Coe FL: Correspondence between stone composition and urine supersaturation in nephrolithiasis. *Kidney Int.* 1997;51:894-900
3. Ferraro PM, Mandel EI, Curhan GC, Gambaro G, Taylor EN: Dietary protein and potassium, diet-dependent net acid load, and risk of incident kidney stones. *Clin J Am Soc Nephrol.* 2016 Oct 7;11(10):1834-1844. doi: 10.2215/CJN.01520216

**Performance****Method Description**

This test is a calculation for protein catabolic rate. The calculation is performed in the laboratory information system, SCC Soft.

**PDF Report**

No

**Day(s) Performed**

Monday through Friday

**Report Available**

1 to 2 days

**Specimen Retention Time**

7 days

**Performing Laboratory Location**

Rochester

**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 Regional Manager. For assistance, contact [Customer Service](#).

**Test Classification**

Not Applicable

**CPT Code Information**

Calculation only

**LOINC® Information**

Test ID	Test Order Name	Order LOINC® Value
PCTR	Protein Catabolic Rate, U	93746-6

Result ID	Test Result Name	Result LOINC® Value
PCTR	Protein Catabolic Rate, U	93746-6