Lab Dept: Chemistry

Test Name: CREATININE CLEARANCE, SERUM AND URINE

General Information

Lab Order Codes:

CRCL - for more information on urine creatinine, see Creatinine, Timed Urine test listing.

CREA - Please order a blood creatinine within the urine collection period. See Creatinine, blood test listing for more information on creatinine. A blood creatinine sample collected during the urine collection period is preferred. A blood creatinine level resulted within 10 days of the urine collection may be used for the calculation if a blood sample was not collected during the collection period.

CPT Codes:

82575 - Creatinine clearance
81050 - Urine timed measurement

Test Includes:

Serum creatinine and urine creatinine (24 hour collection) in mg/dL; weight in kg; height in cm; calculated clearance in mL/min.

Logistics

Test Indications:

Renal function test to estimate glomerular filtration rate (GFR); evaluate renal function in small or wasted tubules; follow possible progression of renal disease; adjust dosages of medications in which renal excretion is pivotal (eg, aminoglycosides, methotrexate, cisplatin).

Lab Testing Sections:

Chemistry

Phone Numbers:

MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability:

Daily, 24 hours

Turnaround Time:

1 day

Special Instructions:

A 24-hour collection bottle with no preservative can be obtained from the lab. Refrigerate the specimen during and after collection. A 24 hour collection is preferred. Reference ranges have not been established for collection periods other than 24 hours.

A blood creatinine must be ordered within 10 days of the 24-hour urine collection period. Patient height and weight as well as starting and ending date and time of urine collection are required for the test and must be documented electronically or on the proper request form.

Specimen

Specimen Type:	Urine and blood
Container:	**Blood:** Green top tube or microtainer **Urine:** Plastic leakproof container (No preservative). Urine GUARD® collection container is preferred for a timed urine sample.
Draw Volume:	**Blood:** 0.6 mL in green top (lithium heparin) tube or microtainer **Alternate tube:** Red top tube **Urine:** Submit an entire 24-hour urine collection
Processed Volume:	Serum/plasma: 0.2 mL Urine: Aliquot from 24 hour collection
Collection:	Blood: Routine venipuncture Urine: For timed urine collections, empty the bladder, discard the voided sample, and note the start time. Collect all urine voided for the specified time period. At the end of the period, note the finishing time, add the last voided sample to the container by emptying the bladder. Bring the refrigerated container to the lab. Make sure all specimens submitted to the laboratory are properly labeled with the patient's name, medical record number and date of birth.
Special Processing:	Lab Staff: Urine: Mix, measure and record the 24-hour urine volume. Enter the patient height and weight into the computer system. Aliquot and transfer a specimen for urine creatinine testing. Sample stability: Plasma/Serum: Refrigerated 24 hours Urine: Refrigerated 4 days
Patient Preparation:	Avoid cephalosporins. Have patient drink water before the clearance is begun, and continue good hydration throughout the clearance. If possible, medications should be stopped beforehand.
Sample Rejection:	Mislabeled or unlabeled specimens

Interpretive

Reference Range:	**All ages:** 70 - 130 mL/min/1.73m² **Note:** The above reference range is based on a 24 hour collection. Reference ranges have not been established for collection periods shorter than 24 hours.
Critical Values:	N/A

Limitations: Creatinine levels may be decreased with increased levels of hemoglobin or bilirubin. Creatinine levels may be increased in the presence of increased lipids.

Methodology: Enzymatic, correlated to IDMS traceable

References:

EZCRA Flex® reagent cartridge insert sheet, Siemens Healthcare Diagnostics Inc, Newark, DE 19714, PN 781270.001, US, issue date 2013-08-20 Rev C

EZCR Flex® reagent cartridge insert sheet (RXL/MAX), Siemens Healthcare Diagnostics Inc, Newark, DE 19714, PN 717270.003, US, issue date 2014-11-21 Rev E

EZCREA CAL product insert, Dimension Vista System, Siemens Healthcare Diagnostics Inc, Newark, DE 19714, PN 751270.001, US, issue date 03/2012 Rev D

Chemistry 1 Calibrator package insert, Siemens Healthcare Diagnostics Inc, Newark, DE 19714, PN 792018.002-US, Rev E, Issue date 06/2013

Clinical Significance, Dade Behring Inc., Glasgow Business Community, Mailbox 531, P.O. Box 6101, Newark, Delaware 19714

Jacobs & DeMott Laboratory Test Handbook (2001) Lexi-Comp, Inc, Hudson, OH, 5th Edition

Pediatric Reference Intervals, Sixth Edition, AACC Press, Washington DC, 2007

Biorad Liquichek Unassayed Chemistry Control (Human) product insert, Bio-Rad Laboratories, Irvine, CA

Biorad Multiqual® 1 & 3 Control Levels product insert, Bio-Rad Laboratories, Irvine, CA

Biorad Liquichek Urine Chemistry 1 & 2 Control Levels Product insert, Bio-Rad Laboratories, Irvine, CA 92618

Updates: 2/4/2013: Method update, previously listed as Alkaline Picrate/Kinetic
7/21/2015: Vista update.