

## Creatinine PAP FS\*

Diagnostic reagent for quantitative in vitro determination of creatinine in serum, plasma or urine on DiaSys respons<sup>®</sup>920

### Order Information

Cat. No. 1 1759 99 10 920

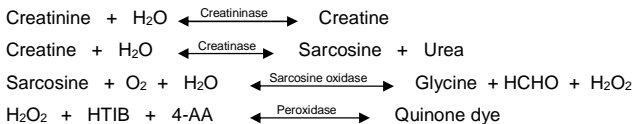
4 twin containers for 180 determinations each

### Method

Enzymatic colorimetric test

### Principle

Creatinine is determined by the following reaction:



The absorbance of the produced red dye at 545 nm is proportional to the creatinine concentration in the sample.

### Reagents

#### Components and Concentrations

|     |   |        |             |
|-----|---|--------|-------------|
| R1: | Goods buffer                                | pH 8.1 | 25 mmol/L   |
|     | Creatininase                                |        | ≥ 30 kU/L   |
|     | Sarcosine oxidase                           |        | ≥ 10 kU/L   |
|     | Ascorbate oxidase                           |        | ≥ 2.5 kU/L  |
|     | Catalase                                    |        | ≥ 350 kU/L  |
|     | HTIB (3-Hydroxy 2,4,6-triiodo benzoic acid) |        | 2.3 mmol/L  |
| R2: | Goods buffer                                | pH 8.1 | 25 mmol/L   |
|     | Creatininase                                |        | ≥ 150 kU/L  |
|     | Peroxidase                                  |        | ≥ 50 kU/L   |
|     | 4-Aminoantipyrine (4-AA)                    |        | 2 mmol/L    |
|     | Potassium hexacyanoferrate                  |        | 0.18 mmol/L |

#### Storage Instructions and Reagent Stability

The reagents are stable up to the end of the indicated month of expiry, if stored at 2 – 8°C, protected from light and contamination is avoided. DiaSys respons containers provide protection from light. Do not freeze the reagents!

#### Warnings and Precautions

1. Reagent 2 contains sodium azide (0.95 g/L) as preservative. Do not swallow! Avoid contact with skin and mucous membranes.
2. To avoid carryover interference, please take care of efficient washing especially after use of interfering reagents. Please refer to the DiaSys respons<sup>®</sup>920 Carryover Pair Table. Carryover pairs and automated washing steps with the recommended cleaning solution can be specified in the system software. Please refer to the user manual.
3. High homogentisic acid concentrations in urine samples lead to false results.
4. In very rare cases, samples of patients with gammopathy might give falsified results [9].
5. N-acetylcysteine (NAC), acetaminophen, metamizole and phenindione medication leads to falsely low, eltrombopag medication to falsely low or high results in patient samples.
6. Please refer to the safety data sheets and take the necessary precautions for the use of laboratory reagents. For diagnostic purposes, the results should always be assessed with the patient's medical history, clinical examinations and other findings.
7. For professional use only!

#### Waste Management

Please refer to local legal requirements.

#### Reagent Preparation

The reagents are ready to use. The bottles are placed directly into the reagent rotor.

### Specimen

Serum, heparin plasma or urine

Stability [1]:

#### Serum/plasma

7 days at 4 – 25°C  
3 months at –20°C

#### Urine

2 days at 20 – 25°C  
6 days at 4 – 8°C  
6 months at –20°C

TruLab urine controls must be prediluted the same way as patient samples.

Discard contaminated specimens. Freeze only once.

### Calibrators and Controls

For calibration, the DiaSys TruCal U calibrator is recommended. The calibrator values have been made traceable to NIST (National Institute for Standardization) Standard Reference Material SRM 967 using level 1 and 2 and therefore to GC-IDMS (gas chromatography-isotope dilution mass spectrometry). For internal quality control DiaSys TruLab N and P or TruLab Urine controls should be assayed. Each laboratory should establish corrective action in case of deviations in control recovery.

|                      | Cat. No.         | Kit size  |
|----------------------|------------------|-----------|
| TruCal U             | 5 9100 99 10 063 | 20 x 3 mL |
|                      | 5 9100 99 10 064 | 6 x 3 mL  |
| TruLab N             | 5 9000 99 10 062 | 20 x 5 mL |
|                      | 5 9000 99 10 061 | 6 x 5 mL  |
| TruLab P             | 5 9050 99 10 062 | 20 x 5 mL |
|                      | 5 9050 99 10 061 | 6 x 5 mL  |
| TruLab Urine Level 1 | 5 9170 99 10 062 | 20 x 5 mL |
|                      | 5 9170 99 10 061 | 6 x 5 mL  |
| TruLab Urine Level 2 | 5 9180 99 10 062 | 20 x 5 mL |
|                      | 5 9180 99 10 061 | 6 x 5 mL  |

### Performance Characteristics

|  |                       |
|--|-----------------------|
| Measuring range in serum up to 80 mg/dL creatinine and in urine up to 700 mg/dL creatinine (in case of higher concentrations re-measure samples after manual dilution with NaCl solution (9 g/L) or use rerun function). |                       |
| Limit of detection**   | 0.03 mg/dL creatinine |
| On-board stability   | 4 weeks               |
| Calibration stability  | 4 weeks               |

|   |
|---|
| <b>Interferences (serum) &lt; 10% by</b>                                |
| Ascorbate up to 30 mg/dL  |
| Hemoglobin up to 500 mg/dL  |
| Bilirubin up to 30 mg/dL  |
| Creatine up to 30 mg/dL   |
| Lipemia (triglycerides) up to 1000 mg/dL                                |
| Proline up to 12 mg/dL  |
| For further information on interfering substances refer to Young S [8]. |

|                              |                 |                 |                 |
|------------------------------|-----------------|-----------------|-----------------|
| <b>Precision in serum</b>    |                 |                 |                 |
| <b>Within run (n=20)</b>     | <b>Sample 1</b> | <b>Sample 2</b> | <b>Sample 3</b> |
| Mean [mg/dL]                 | 1.02            | 1.21            | 7.57            |
| Coefficient of variation [%] | 2.68            | 3.01            | 0.88            |
| <b>Between run (n=20)</b>    | <b>Sample 1</b> | <b>Sample 2</b> | <b>Sample 3</b> |
| Mean [mg/dL]                 | 1.00            | 1.11            | 7.53            |
| Coefficient of variation [%] | 3.21            | 2.59            | 2.63            |

|   |   |
|---|---|
| <b>Method comparison in serum (n=101)</b> |   |
| Test x                                    | DiaSys Creatinine PAP FS (Hitachi 917)              |
| Test y                                    | DiaSys Creatinine PAP FS (respons <sup>®</sup> 920) |
| Slope                                     | 1.00  |
| Intercept                                 | -0.04 mg/dL   |
| Coefficient of correlation                | 0.999   |

| Precision in urine           |          |          |          |
|------------------------------|----------|----------|----------|
| Within run (n=20)            | Sample 1 | Sample 2 | Sample 3 |
| Mean [mg/dL]                 | 67.2     | 149      | 238      |
| Coefficient of variation [%] | 2.47     | 2.95     | 3.12     |
| Between run (n=20)           | Sample 1 | Sample 2 | Sample 3 |
| Mean [mg/dL]                 | 31.3     | 149      | 238      |
| Coefficient of variation [%] | 2.90     | 3.24     | 3.33     |

| Method comparison in urine (n=109) |   |
|------------------------------------|---|
| Test x                             | DiaSys Creatinine PAP FS (BioMajesty 6010)          |
| Test y                             | DiaSys Creatinine PAP FS (respons <sup>®</sup> 920) |
| Slope                              | 1.01  |
| Intercept                          | -0.970 mg/dL  |
| Coefficient of correlation         | 0.9999  |

\*\* lowest measurable concentration which can be distinguished from zero mean + 1.645 SD (n=60) of an analyte free specimen

### Calculation of Creatinine-Clearance [mL/min/1.73 m<sup>2</sup>] [2]

$$= \frac{\text{mg Creatinine} / 100 \text{ mL Urine} \times \text{mL Urine}}{\text{mg Creatinine} / 100 \text{ mL Serum} \times \text{min Urine collection time}}$$

The calculated creatinine clearance refers to the average body surface of an adult (1.73 m<sup>2</sup>).

### Reference Range

| Serum/Plasma        | mg/dL       | µmol/L   |
|---------------------|-------------|----------|
| <b>Adults [4]</b>   |             |          |
| Women               | 0.51 – 0.95 | 45 – 84  |
| Men                 | 0.67 – 1.17 | 59 – 104 |
| <b>Children [5]</b> |             |          |
| 0 – 7 days          | 0.6 - 1.1   | 53 - 97  |
| 1 week – 1 month    | 0.3 – 0.7   | 27 - 62  |
| 1 – 6 month(s)      | 0.2 – 0.4   | 18 - 35  |
| 7 – 12 months       | 0.2 – 0.4   | 18 - 35  |
| 1 – 18 year(s)      | 0.2 – 0.7   | 18 - 62  |

### First morning urine [4]

|       |                |                    |
|-------|----------------|--------------------|
| Women | 29 – 226 mg/dL | 2.55 – 20.0 mmol/L |
| Men   | 40 – 278 mg/dL | 3.54 – 24.6 mmol/L |

### 24h urine [2]

|       |                   |                 |
|-------|-------------------|-----------------|
| Women | 720 – 1510 mg/24h | 6 – 13 mmol/24h |
| Men   | 980 – 2200 mg/24h | 9 – 19 mmol/24h |

### Creatinine clearance [2]

66.3 – 143 mL/min/1.73 m<sup>2</sup>

### Albumin/creatinine ratio (early morning urine) [10]:

< 30 mg Albumin/g Creatinine

Each laboratory should check if the reference ranges are transferable to its own patient population and determine own reference ranges if necessary.

### Literature

- Guder WG, Zawta B. Recommendations of the Working group on Preanalytical Quality of the German Society for Clinical Chemistry and the German Society for Laboratory Medicine: The Quality of Diagnostic Samples. 1<sup>st</sup> ed Darmstadt: GIT Verlag 2001; p. 24-5,50-1.
- Junge W, Wilke B, Halabi A, Klein G. Determination of reference intervals for serum creatinine, creatinine excretion and creatinine clearance with an enzymatic and a modified Jaffé method. Clin Chim Acta 2004; 344: 137-148
- Levey AS, Coresh J, Greene T, Marsh J et al: Expressing the Modification of Diet in Renal Disease Study Equation for Estimating Glomerular Filtration Rate with Standardized Serum Creatinine Values. Clin Chem 2007; 53 (4): 766-72.
- Mazzachi BC, Peake M, Erhardt V. Reference range and method comparison for enzymatic and Jaffé Creatinine assays in plasma and serum and early morning urine. Clin Lab 2000; 46: 53-5.
- Soldin SJ, HicksJM. Pediatric reference ranges . Washington: AACC Press, 1995:50.
- Newman DJ, Price CP. Renal function and nitrogen metabolites. In: Burtis CA, Ashwood ER, editors. Tietz Textbook of Clinical Chemistry. 3<sup>rd</sup> ed. Philadelphia: W.B Saunders Company; 1999. p. 1204-1270.
- Thomas L. Clinical Laboratory Diagnostics. 1<sup>st</sup> ed. Frankfurt: TH-Books Verlagsgesellschaft; 1998. p. 366-74.
- Young DS. Effects of Drugs on Clinical Laboratory Tests. 5th. ed. Volume 1 and 2. Washington, DC: The American Association for Clinical Chemistry Press, 2000.
- Bakker AJ, Mücke M. Gammopathy interference in clinical chemistry assays: mechanisms, detection and prevention. ClinChemLabMed 2007;45(9):1240-1243.
- Dati F, Metzmann E. Proteins-Laboratory testing and clinical use. 1<sup>st</sup> ed. Holzheim: DiaSys Diagnostic Systems; 2005: p. 93.

### Manufacturer



DiaSys Diagnostic Systems GmbH  
Alte Strasse 9 65558 Holzheim Germany

## Creatinine PAP FS

Application for serum and plasma

| Test Details   | Test Volumes   | Reference Ranges                                   |
|--|--|--|
| Test : <input type="text" value="CREAP"/>                    |  | Auto Rerun <input type="checkbox"/>                |
| : <input type="text" value="Creatinine PAP"/>                |  | Online Calibration <input type="checkbox"/>        |
| : <input type="text" value="mg/dL"/>                         | Decimal Places : <input type="text" value="2"/>          | Cuvette Wash <input type="checkbox"/>              |
| Wavelength-Primary : <input type="text" value="546"/>        | Secondary : <input type="text" value="700"/>             | Total Reagents : <input type="text" value="2"/>    |
| Assay Type : <input type="text" value="2-Point"/>            | Curve Type : <input type="text" value="Linear"/>         | Reagent R1 : <input type="text" value="CREAP R1"/> |
| M1 Start : <input type="text" value="15"/>                   | M1 End : <input type="text" value="15"/>                 | Reagent R2 : <input type="text" value="CREAP R2"/> |
| M2 Start : <input type="text" value="33"/>                   | M2 End : <input type="text" value="33"/>                 |  |
| Sample Replicates : <input type="text" value="1"/>           | Standard Replicates : <input type="text" value="3"/>     | <b>Consumables/Calibrators:</b>                    |
| Control Replicates : <input type="text" value="1"/>          | Control Interval : <input type="text" value="0"/>        | Blank /Level 0 : <input type="text" value="0"/>    |
| Reaction Direction : <input type="text" value="Increasing"/> | React. Abs. Limit : <input type="text" value="0.0000"/>  | Calibrator 1 : <input type="text" value="*"/>      |
| Prozone Limit % : <input type="text" value="0"/>             | Prozone Check : <input type="text" value="Lower"/>       |  |
| Linearity Limit % : <input type="text" value="0"/>           | Delta Abs./Min. : <input type="text" value="0.0000"/>    |  |
| Technical Minimum : <input type="text" value="0.0300"/>      | Technical Maximum : <input type="text" value="80.0000"/> |  |
| Y = aX + b a= : <input type="text" value="1.0000"/>          | b= : <input type="text" value="0.0000"/>                 |  |

\* Enter calibrator value.

| Test Details  | Test Volumes   | Reference Ranges                  |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
|---|--|-----------------------------------|--|---|--|--|--|--|--|---|--|---|--------------|---|--------------------------------|------------------------------|--|--------------------------------------|--------------------------------|
| Test : <input type="text" value="CREAP"/>   |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Sample Type : <input type="text" value="Serum/plasma"/>   |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <table border="1"> <thead> <tr> <th colspan="2">Sample Volumes</th> </tr> </thead> <tbody> <tr> <td>Normal : <input type="text" value="5.00"/> <input type="text" value="µL"/></td> <td>Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/></td> </tr> <tr> <td>Increase : <input type="text" value="8.00"/> <input type="text" value="µL"/></td> <td>Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/></td> </tr> <tr> <td>Decrease : <input type="text" value="2.00"/> <input type="text" value="µL"/></td> <td>Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/></td> </tr> <tr> <td>Standard Volume : <input type="text" value="5.00"/> <input type="text" value="µL"/></td> <td></td> </tr> </tbody> </table> |  | Sample Volumes                    |  | Normal : <input type="text" value="5.00"/> <input type="text" value="µL"/>      | Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/> | Increase : <input type="text" value="8.00"/> <input type="text" value="µL"/>   | Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/> | Decrease : <input type="text" value="2.00"/> <input type="text" value="µL"/> | Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/> | Standard Volume : <input type="text" value="5.00"/> <input type="text" value="µL"/> |  | <table border="1"> <thead> <tr> <th>Sample Types</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> Serum</td> </tr> <tr> <td><input type="checkbox"/> Urine</td> </tr> <tr> <td><input type="checkbox"/> CSF</td> </tr> <tr> <td><input checked="" type="checkbox"/> Plasma</td> </tr> <tr> <td><input type="checkbox"/> Whole Blood</td> </tr> <tr> <td><input type="checkbox"/> Other</td> </tr> </tbody> </table> | Sample Types | <input checked="" type="checkbox"/> Serum | <input type="checkbox"/> Urine | <input type="checkbox"/> CSF | <input checked="" type="checkbox"/> Plasma | <input type="checkbox"/> Whole Blood | <input type="checkbox"/> Other |
| Sample Volumes  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Normal : <input type="text" value="5.00"/> <input type="text" value="µL"/>  | Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/> |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Increase : <input type="text" value="8.00"/> <input type="text" value="µL"/>  | Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/> |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Decrease : <input type="text" value="2.00"/> <input type="text" value="µL"/>  | Dilution Ratio : <input type="text" value="1"/> <input type="text" value="X"/> |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Standard Volume : <input type="text" value="5.00"/> <input type="text" value="µL"/>   |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Sample Types  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <input checked="" type="checkbox"/> Serum   |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> Urine  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> CSF  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <input checked="" type="checkbox"/> Plasma  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> Whole Blood  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> Other  |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| <table border="1"> <thead> <tr> <th colspan="2">Reagent Volumes and Stirrer Speed</th> </tr> </thead> <tbody> <tr> <td>RGT-1 Volume : <input type="text" value="180"/> <input type="text" value="µL"/></td> <td>R1 Stirrer Speed : <input type="text" value="Medium"/></td> </tr> <tr> <td>RGT-2 Volume : <input type="text" value="90"/> <input type="text" value="µL"/></td> <td>R2 Stirrer Speed : <input type="text" value="High"/></td> </tr> </tbody> </table>  |  | Reagent Volumes and Stirrer Speed |  | RGT-1 Volume : <input type="text" value="180"/> <input type="text" value="µL"/> | R1 Stirrer Speed : <input type="text" value="Medium"/>                         | RGT-2 Volume : <input type="text" value="90"/> <input type="text" value="µL"/> | R2 Stirrer Speed : <input type="text" value="High"/>                           |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| Reagent Volumes and Stirrer Speed   |  |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| RGT-1 Volume : <input type="text" value="180"/> <input type="text" value="µL"/>   | R1 Stirrer Speed : <input type="text" value="Medium"/>                         |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |
| RGT-2 Volume : <input type="text" value="90"/> <input type="text" value="µL"/>  | R2 Stirrer Speed : <input type="text" value="High"/>                           |                                   |  |   |  |  |  |  |  |   |  |   |              |   |                                |                              |  |                                      |                                |

| Test Details  | Test Volumes                      | Reference Ranges                  |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
|---|-----------------------------------|-----------------------------------|--|--|------------------------|------------------------|--------|-----------------------------------|-----------------------------------|-------|-----------------------------------|-----------------------------------|---|--------------|---|--------------------------------|------------------------------|--|--------------------------------------|--------------------------------|
| Test : <input type="text" value="CREAP"/>   |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| Sample Type : <input type="text" value="Serum/plasma"/>   |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| Reference Range : <input type="text" value="DEFAULT"/>  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| Category : <input type="text" value="Male"/>  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <table border="1"> <thead> <tr> <th colspan="2">Reference Range</th> </tr> <tr> <th></th> <th>Lower Limit<br/>(mg/dL)</th> <th>Upper Limit<br/>(mg/dL)</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td><input type="text" value="0.67"/></td> <td><input type="text" value="1.17"/></td> </tr> <tr> <td>Panic</td> <td><input type="text" value="0.00"/></td> <td><input type="text" value="0.00"/></td> </tr> </tbody> </table> |                                   | Reference Range                   |  |  | Lower Limit<br>(mg/dL) | Upper Limit<br>(mg/dL) | Normal | <input type="text" value="0.67"/> | <input type="text" value="1.17"/> | Panic | <input type="text" value="0.00"/> | <input type="text" value="0.00"/> | <table border="1"> <thead> <tr> <th>Sample Types</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> Serum</td> </tr> <tr> <td><input type="checkbox"/> Urine</td> </tr> <tr> <td><input type="checkbox"/> CSF</td> </tr> <tr> <td><input checked="" type="checkbox"/> Plasma</td> </tr> <tr> <td><input type="checkbox"/> Whole Blood</td> </tr> <tr> <td><input type="checkbox"/> Other</td> </tr> </tbody> </table> | Sample Types | <input checked="" type="checkbox"/> Serum | <input type="checkbox"/> Urine | <input type="checkbox"/> CSF | <input checked="" type="checkbox"/> Plasma | <input type="checkbox"/> Whole Blood | <input type="checkbox"/> Other |
| Reference Range   |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
|   | Lower Limit<br>(mg/dL)            | Upper Limit<br>(mg/dL)            |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| Normal  | <input type="text" value="0.67"/> | <input type="text" value="1.17"/> |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| Panic   | <input type="text" value="0.00"/> | <input type="text" value="0.00"/> |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| Sample Types  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <input checked="" type="checkbox"/> Serum   |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> Urine  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> CSF  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <input checked="" type="checkbox"/> Plasma  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> Whole Blood  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |
| <input type="checkbox"/> Other  |                                   |                                   |  |  |                        |                        |        |                                   |                                   |       |                                   |                                   |   |              |   |                                |                              |  |                                      |                                |

## Creatinine PAP FS

### Application for Urine

| Test Details       |                  | Test Volumes        |            | Reference Ranges                |                          |
|--------------------|------------------|---------------------|------------|---------------------------------|--------------------------|
| Test               | : CREAP          |                     |            | Auto Rerun                      | <input type="checkbox"/> |
|                    | : Creatinine PAP |                     |            | Online Calibration              | <input type="checkbox"/> |
|                    | : mg/dL          | Decimal Places      | : 2        | Cuvette Wash                    | <input type="checkbox"/> |
| Wavelength-Primary | : 546            | Secondary           | : 700      | Total Reagents                  | : 2                      |
| Assay Type         | : 2-Point        | Curve Type          | : Linear   | Reagent R1                      | : CREAP R1               |
| M1 Start           | : 15             | M1 End              | : 15       | Reagent R2                      | : CREAP R2               |
| M2 Start           | : 33             | M2 End              | : 33       |                                 |                          |
| Sample Replicates  | : 1              | Standard Replicates | : 3        | <b>Consumables/Calibrators:</b> |                          |
| Control Replicates | : 1              | Control Interval    | : 0        | Blank /Level 0                  | : 0                      |
| Reaction Direction | : Increasing     | React. Abs. Limit   | : 0.0000   | Calibrator 1                    | : *                      |
| Prozone Limit %    | : 0              | Prozone Check       | : Lower    |                                 |                          |
| Linearity Limit %  | : 0              | Delta Abs./Min.     | : 0.0000   |                                 |                          |
| Technical Minimum  | : 0.0300         | Technical Maximum   | : 700.0000 |                                 |                          |
| Y = aX + b         | a= : 1.0000      | b=                  | : 0.0000   |                                 |                          |

\* Enter calibrator value.

| Test Details                             |                | Test Volumes     |          | Reference Ranges   |  |
|--|----------------|------------------|----------|--|--|
| Test                                     | : CREAP        |                  |          |  |  |
| Sample Type                              | : Urine        |                  |          |  |  |
| <b>Sample Volumes</b>                    |                |                  |          | <b>Sample Types</b>  |  |
| Normal                                   | : 5.00 $\mu$ L | Dilution Ratio   | : 10 X   | <input type="checkbox"/> Serum<br><input checked="" type="checkbox"/> Urine<br><input type="checkbox"/> CSF<br><input type="checkbox"/> Plasma<br><input type="checkbox"/> Whole Blood<br><input type="checkbox"/> Other |  |
| Increase                                 | : 8.00 $\mu$ L | Dilution Ratio   | : 5 X    |  |  |
| Decrease                                 | : 2.00 $\mu$ L | Dilution Ratio   | : 20 X   |  |  |
| Standard Volume                          | : 5.00 $\mu$ L |                  |          |  |  |
|  |                |                  |          |  |  |
| <b>Reagent Volumes and Stirrer Speed</b> |                |                  |          |  |  |
| RGT-1 Volume                             | : 180 $\mu$ L  | R1 Stirrer Speed | : Medium |  |  |
| RGT-2 Volume                             | : 90 $\mu$ L   | R2 Stirrer Speed | : High   |  |  |

| Test Details           |             | Test Volumes |  | Reference Ranges   |  |
|------------------------|-------------|--------------|--|--|--|
| Test                   | : CREAP     |              |  |  |  |
| Sample Type            | : Urine     |              |  |  |  |
| Reference Range        | : DEFAULT   |              |  |  |  |
| Category               | : Male      |              |  |  |  |
| <b>Reference Range</b> |             |              |  | <b>Sample Types</b>  |  |
|                        | Lower Limit | Upper Limit  |  | <input type="checkbox"/> Serum<br><input checked="" type="checkbox"/> Urine<br><input type="checkbox"/> CSF<br><input type="checkbox"/> Plasma<br><input type="checkbox"/> Whole Blood<br><input type="checkbox"/> Other |  |
|                        | (mg/dL)     | (mg/dL)      |  |  |  |
| Normal                 | : 40        | : 278        |  |  |  |
| Panic                  | : 0.00      | : 0.00       |  |  |  |