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Yale - Blood Urea Nitrogen

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Protocol status: Working

We use this protocol and it's working

Created: March 12, 2019

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Protocol Integer ID: 21328

Keywords: Blood Urea Nitrogen, blood urea nitrogen summary, conversion of ammonia, ammonia, urea, reactions of urease, rate of nad formation, glutamate dehydrogenase, oxidation of nadh, serum, blood

Abstract

Summary:

Procedure used to measure the concentration of Blood Urea Nitrogen (BUN) in blood, plasma, and serum. Urea is determined by the enzymatically coupled reactions of urease (to form ammonia) and glutamate dehydrogenase (conversion of ammonia and glutamate to glutamine with oxidation of NADH to NAD). The rate of NAD formation is monitored by the change in absorbance at 340 nm.

Materials

MATERIALS

BUN liquid Reagent **Prolabs(cliniga) Catalog** #R84533

Multi Analyte Calibrator **Prolabs(cliniga) Catalog** #R60010

Assayed Control Serum 1 Prolabs(cliniga) Catalog #R83082

Assayed Control Serum 2 Prolabs(cliniga) Catalog #R83083

Reagent Preparation:

BUN liquid Reagent: As supplied by vendor

Multi Analyte Calibrator: Add the appropriate amount of water (6.5mL) to the chemical control bottle. Invert to mix, allowing 15 minutes for the reagent to settle.

Assayed Control Serum 1: Add the appropriate amount of water (6.5mL) to the chemical control bottle. Invert to mix, allowing 15 minutes for the reagent to settle.

Assayed Control Serum 2: Add the appropriate amount of water (6.5mL) to the chemical control bottle. Invert to mix, allowing 15 minutes for the reagent to settle.



Troubleshooting

Before start

Analysis by automated system Cobas Mira Plus



- 1 Calibrate Cobas for BUN analysis by running a multi analyte standard and two assayed control serums.
- 2 Sample handling as performed by the Cobas Mira Plus.
 - a) Cobas pipettes 2 µL of sample into a cuvette slot.
 - b) Absorbance is measured at 340 nm.
 - c) Add 200 µL of BUN liquid reagent.
 - d) Mixture is incubated at 37°C for 10 minutes.
 - e) Absorbance is measured at 340 nm. Change in absorbance is calculated.