



**α-AMYLASE TEST**  
**FOR BECKMAN CX AND LX SYSTEMS**

**AMY**

**INTENDED USE**

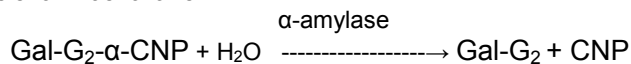
For the quantitative determination of α-amylase activity in serum.

**INSTRUCTIONS AND CLINICAL SIGNIFICANCE**

α-amylase catalyzes the hydrolysis of oligosaccharides, polysaccharides, starches and glycogen with formation of maltose and dextrans. The tissue sources of human serum α-amylase activity is therefore interested clinically in relation to diseases of the pancreas and evaluation of pancreatic function. α-amylase activity increased considerably in acute pancreatitis and obstruction of the pancreatic ducts. α-amylase activity also increase in acute abdominal pain associated with peptic ulcer, empyema of the gallbladder and intestinal obstruction.

**PRINCIPLE**

Substrate Galactose-Glucose-Glucose-Chloronitrophenol(Gal-G<sub>2</sub>-α-CNP) is hydrolyzed by α-amylase to G<sub>2</sub> and CNP stoichiometrically. The rate of CNP formation due to substrate hydrolysis by α-amylase is proportionally correlated with α-amylase activity which is measured by following the rate of absorbance increase at 410nm. The reaction is shown as follows:



**SPECIMEN COLLECTION AND PREPARATION**

Serum plasma, or urine samples may be used. Anticoagulant such as citrate, oxalate or EDTA must be avoided because of binding of calcium ion, which is essential for α-amylase activity. α-amylase activity in serum or urine sample, without bacterial contamination, are stable for 7 days at room temperature and several months at 4 °C.

**REAGENT**

- Package: α-amylase substrate: 2×20ml For Beckman CX-4 and LX-20
- Components: Gal-G<sub>2</sub>-α-CNP 0.3mmol/L  
CaCl<sub>2</sub> 10 mmol/L  
Phosphate buffer 50 mmol/L

Store the reagent at: 2~8 °C

**PRECAUTIONS**

- For in vitro diagnostic use only.
- Since all specimens are potentially infectious, they should be handled with appropriate precautions and practices in accordance with Biosafety level 2 as recommended by USA NIH manual Biosafety in Microbiological and Biomedical Laboratories, and in accordance with National or local regulations related to the safety precautions of such materials.
- saliva contains very high α-amylase activity, **avoid to bring any saliva into the substrate.**
- Each laboratory has to perform the quality control test to assure the results being reliable before running the specimen tests.

**PROCEDURE**

Use open channel and follows the attached parameters and procedures to perform the tests.

**EXPECTED VALUES**

Serum < 220 u/l, Urine < 1000 u/l

\*If α-amylase activity higher than 4500 units, the sample should be diluted with saline and do the test again.

**REFERENCES**

- Richterich R. 1969. Clinical chemistry. Theory and Practice, A.P. New York.
- Caraway W.T. 1959. Am. Clin.32:97.