Creatine phosphokinase (CK) (EC 2.7.3.2) is an energy transfer enzyme
which produces three isoenzymes: CK-MM (isolated primarily from skeletal
muscle), CK-MB (complexed to IgG migrating between CK-MB and CK-MM have been attributed to CK-BB and their appearance and disappearance).

Wild-type CK-MB is not generally found in normal serum.

I. Stainer Preparation

If utilizing the unit for both stained and non-stained gels, log usage to

II. Precautions

III. Materials

IV. Gel Preparation

V. Preparations of Isoenzyme Reagent

VI. Incubation

VII. Destaining

VIII. RESULTS

IX. Table of Diabetic and Non-Diabetic Patients

X. Table of Diabetic and Non-Diabetic Patients

XI. Staining Kit

XII. Interpretation

XIII. Calculation

XIV. Quality Control

XV. References

XVI. Figure 1

XVII. Figure 2

XVIII. Figure 3

XIX. Figure 4

XX. Figure 5
### Procedure for QuickGel Chamber

**Start-Up/Stop**

**1. Loading Portion**

- **Materials Needed & Provided**
  - Materials Provided: Pipets, test tubes, water, wires, and alcohol.
  - Materials Needed: Buffers, chemicals, and gel.

- **Materials Needed but not Provided**
  - Test tubes, pipets, and alcohol.

- **Materials Provided but not contained in kit**
  - SPIFE Spreader 3386
  - SPIFE QuickGel Holder 3358
  - Disposable Sample Cups 3369
  - Applicator Blade Assembly
  - CK Vis Reagent (10 x 1.5 mL)
  - SPIFE Reagent Spreader
  - Disposable Sample Cups

- **Materials Needed but not Provided**
  - Aspirator
  - Pipets

**2. Serum specimens may be stored at 2 to 8°C for up to 48 hours.**

**3. Careful to load only gel sample contents (no trinitrobenzene-sulfonic acid).**

**4. With the gel still in the chamber, use a Gel Block Remover or straight metal object to separate the two gel blocks.**

- **5. Place the gel over the REP Prep inside the rectangle on the chamber lid.**

**6. Place an empty Gel Holder in the stainer unit. If cleaning is required, use the **Clean the QuickGel Electrodes and Reagent Spreaders with deionized water.**

**7. Remove the reagent vial and add 150 µL of Chromogen to it. Invert the vial several times to mix well.**

**8. Place the Incubation Chamber in a laboratory incubator at 45°C for 1 hour.**

**9. Place the QuickGel Holder in the groove of the chamber.**

**10. Place the Water Wash Chamber in the stainer unit.**

**11. Ensure the chamber floor is clean, and place the Drying Lid on the chamber.**

**12. Quantitative Evaluation:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

- **Calculation**

**13. Evaluation:**

**a. Observation of the QuickGel Band(s) that may be clearly visible by the presence of the bands.**

**b. Qualitative Evaluation:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**c. Stability of End Product:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**d. Reference Values:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**e. Cross-Contamination:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**f. Effect on Other Tests:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**g. Detection of cross-reacting substances:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**h. Effect on Other Tests:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**i. Effect on Other Tests:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**j. Effect on Other Tests:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters

**k. Effect on Other Tests:**

- **Materials Needed but not Provided**
  - Biochemical analyzer
  - Wash chamber

- **Materials Provided**
  - Chromogen

- **Materials Provided but not contained in kit**
  - Filters
Materials needed but not provided in the kit:

- 3 mL serological pipette
- 1 mL serological pipette
- 2 mL serological pipette
- 1 mL serological pipette
- 5 mL serological pipette
- 1 mL serological pipette
- 5 mL serological pipette
- Water (distilled)
- Water (hot)
- Water (cold)
- Water (room temperature)
- Water (highly distilled or deionized)
- Water (sterilized)
- Water (sterilized, high purity)
- Water (sterilized, high purity, deionized)
- Water (sterilized, high purity, deionized, deoxygenated)
- Water (sterilized, high purity, deionized, deoxygenated, degassed)
- Water (sterilized, high purity, deionized, deoxygenated, degassed, degassed)
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The Activator contains 114 mM BME (Beta Mercaptoethanol) and 114 mM BME (Beta Mercaptoethanol) 2, 3-AMP/MOPS buffer. Each gel contains agarose in a BME-AMP/MOPS buffer. The product should be discarded if it shows noticeable signs of turbidity.

Within-run and Run-to-run PRECISION

**Bally, T. (1994)**

**Morgan, J. (1993)**


**White, R. (1991)**

**Brown, J. (1990)**

**Keller, S. (1989)**


**Joyce, M. (1987)**

**Miller, P. (1986)**

**McKee, S. (1985)**

**Rice, J. (1984)**

**Smith, P. (1983)**

**Wilson, P. (1981)**

**Galen, R.S., Human Path, 6(2):141-155, 1975.**

**Van DerVeen, K.J. and Willebrands, A.F., Clin Chim Acta, 13:312-316, 1966.**


**Tietz, N.W., Ed., *Clinical Chemistry*.**

**Reye's Syndrome**

**Rhabdomyolysis**

**CK-MM**

**CK-BB**

**CK-MB**

**ADP + creatine phosphate**

**Creatine phosphokinase (CK) (EC 2.7.3.2)** is an energy transfer enzyme that catalyzes the reversible reaction

**Creatine + ATP**

**Creatine phosphate + ADP**

**Hexokinase**

**NADH + H**

**D-glucose**

**Citric Acid Destain**

**Preparation for Use:**

**Storage and Stability:**

**Warning:** The chromogen contains 0.023 g Tetranitro Blue Tetrazolium pentoxide per gram of citric acid/destain.
Rhabdomyolysis              Reye's Syndrome

Interfering Factors:

1. Often the only isoenzyme of CK found in normal serum.

2. CK-MB activity > 5% of total CK activity and a minimum of 10 IU/L.

3. Occasionally seen in the serum of patients with severe shock syndrome and malignant hyperpyrexia.

4. Occasionally seen in the serum of patients with chronic renal failure, and values following open heart surgery are often used in the diagnosis of pericardial tamponade.

5. Positive identification of second myocardial infarct: After the first MI the CK-MB will be elevated due to trauma to the heart from manipulation and cannulation. The LD is flipped than in most diagnostic situations. The CK-MB will be elevated due to another commercially available product.

6. Positive identification of second myocardial infarct: After the first MI the CK-MB will be elevated due to trauma to the heart from manipulation and cannulation. The LD is flipped than in most diagnostic situations. The CK-MB will be elevated due to another commercially available product.

7. Reticulocytes as an indication of myeloid precursors.


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21. Henry, R.J. and Cannon, D.C., Eds., Effects of Drugs on Clinical Laboratory Tests, 1, 3

22. Henry, R.J. and Cannon, D.C., Eds., Effects of Drugs on Clinical Laboratory Tests, 1, 3


24. Henry, R.J. and Cannon, D.C., Eds., Effects of Drugs on Clinical Laboratory Tests, 1, 3

25. Henry, R.J. and Cannon, D.C., Eds., Effects of Drugs on Clinical Laboratory Tests, 1, 3


27. Henry, R.J. and Cannon, D.C., Eds., Effects of Drugs on Clinical Laboratory Tests, 1, 3


