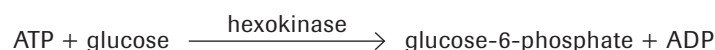


Creatine Kinase MB

Test principle: Immunological UV test



After immunoinhibition with antibodies to the CK-M subunit, CK-B activity is determined with a standardized method for the determination of CK using the “reverse reaction” and activation by NAC as recommended by the German Society for Clinical Chemistry (DGKC) and the International Federation of Clinical Chemistry (IFCC) in 1977 and 2002, respectively.

The CK-M subunits are inhibited by specific antibodies. Since CK-BB occurs rarely in serum, it is assumed that the CK-B activity is derived from CK-MB present in the specimen. The activity of the CK-B subunits is determined and multiplied by 2 to provide an estimate of the CK-MB activity.

The CK is activated by N-acetylcysteine (NAC). In a primary reaction, the activated CK catalyzes the dephosphorylation of creatine phosphate to form creatine and ATP. In a coupled reaction catalyzed by hexokinase (HK), glucose is phosphorylated by ATP to form D-glucose-6-phosphate (G6P). Finally, glucose-6-phosphate dehydrogenase (G6PDH) catalyzes the oxidation of G6P by NADP⁺ to form 6-phosphogluconate and NADPH.

The rate of the NADPH formation is directly proportional to the catalytic CK-MB activity. It is determined by measuring the increase in absorbance at 340 nm.

Proposed reagent composition approximately 3+1 formulation

Reagent 1

Composition	Concentration	Catalog Number
Buffer (Imidazole, pH 6.0)	58 mmol/l	10 034 428 103
N-Acetylcysteine	40 mmol/l	10 068 365 103
EDTA	3 mmol/l	
AMP, di-Na	10 mmol/l	10 000 094 103
Diadenosine pentaphosphate, tri-Li	24 μmol/l	10 161 624 103
Mg ²⁺ (acetate preferred)	20 mmol/l	
D-Glucose	40 mmol/l	
NADP, mono-K	9.5mmol/l	10 233 536 103
Stabilizer, preservative		

Reagent 2

Composition	Concentration	Catalog Number
EDTA	3 mmol/l	
ADP, mono-K	12 mmol/l	10 233 528 103
N-Methyldiethanolamine	69 mmol/l	
Creatine phosphate, di-Na	180 mmol/l	10 003 506 103
Hexokinase (HK)	>36 kU/l	11 370 600 103
G-6-PDH	>36 kU/l	11 293 206 103
CK-MM antibody mix	25 mg/l	04 688 457 103
Detergent, preservative, such as Triton X-100 Sodium azide	0.01 %	10 743 119 103

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