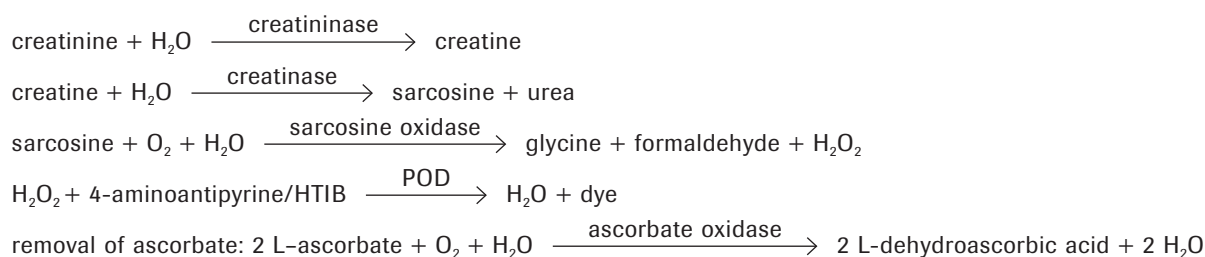


Creatinine

Test principle: Enzymatic colorimetric



Creatinine is produced endogenously from creatine and creatine phosphate as a result of muscle metabolic processes. It is excreted by glomerular filtration during normal renal function. Creatinine assays are conducted for diagnostic purposes, for therapeutic monitoring of acute and chronic renal diseases, and for monitoring kidney dialysis. The urinary creatinine concentration can also be used as a reference parameter for analyte excretion (albumin, α -amylase). Numerous methods have been described for determining creatinine, including the Jaffé alkaline picrate method in various modifications, as

well as an enzymatic test which involves measuring ammonia after cleavage of creatinine by creatinine iminohydrolase.

The enzymatic method is based on the established determination of hydrogen peroxide after conversion of creatinine with the aid of creatininase (creatinine amidohydrolase), creatinase, and sarcosine oxidase. The liberated hydrogen peroxide reacts with 4-aminoantipyrine and HTIB to form a quinone imine chromogen. The color intensity of the quinone imine chromogen formed is directly proportional to the creatinine concentration and is measured photometrically.

Proposed reagent composition approximately 2+1 formulation

Reagent 1

Composition	Concentration	Catalog Number
Buffer (TAPS, pH 8.1)	30 mmol/l	11 120 425 001
Creatinase	>20 kU/l	11 799 142 103
Sarcosine oxidase	>8 kU/l	11 378 856 103
Ascorbate oxidase	>2 kU/l	11 558 668 103
Catalase	>0.1 kU/l	11 650 645 103
HTIB	5.9 mmol/l	
Detergent, preservative		

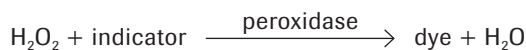
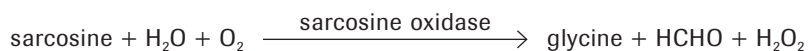
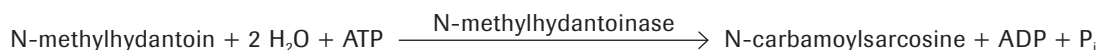
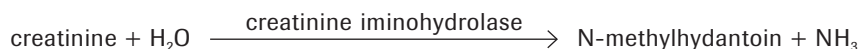
- Endogenous creatine in the sample is destroyed by creatinase, SOD, and catalase during incubation in R1.
- Avoid sodium azide in R1.

Reagent 2

Composition	Concentration	Catalog Number
Buffer (TAPS, pH 8.0)	50 mmol/l	11 120 425 001
Creatininase	>30 kU/l	11 865 471 103
Peroxidase	>1 kU/l	11 378 783 103
4-Aminoantipyrine	2 mmol/l	10 073 474 103
Potassium hexacyanoferrate (II)	0.163 mmol/l	
Detergent, such as Triton X-100	0.01 %	10 743 119 103
Preservative, such as Sodium azide		

Products are for further processing only.

The following method is suitable for dry chemistry systems:



Roche Enzymes for this assay

Products	Catalog Number
Creatinine Deaminase (Creatinine iminohydrolase)	11 330 764 103
N-Methylhydantoinase (ATP-hydrolyzing)	11 288 555 103
N-Carbamoylsarcosine Amidase	11 248 847 103
Sarcosine oxidase	11 378 856 103
Peroxidase	11 378 783 103

Products are for further processing only.

All brands or product names are trademarks of their respective holders.

custombiotech.roche.com

Your Roche Custom Biotech Customer Service

Europe, Middle East, Africa, Latin America

Phone +49 621 759 8580

Fax +49 621 759 8610

mannheim.custombiotech@roche.com

Japan Phone +81 3 5443 5285

Fax +81 3 5443 7934

japan.custombiotech@roche.com

Asia Pacific Phone +65 6371 6638

Fax +65 6371 6601

apac.custombiotech@roche.com

United States

Phone +1 800 428 5433, ext. 14649 (toll-free)

Fax +1 317 521 4065

custombiotech.ussales@roche.com

Canada Phone +1 450 686 7050

Fax +1 450 686 7012

custombiotech.can@roche.com

Published by

Roche Diagnostics GmbH

Sandhofer Straße 116

68305 Mannheim

Germany

© 2011 Roche Diagnostics.

All rights reserved.

05837774990 ② 0311