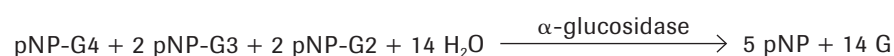
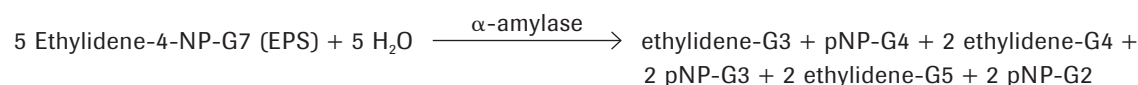


## Pancreatic $\alpha$ -Amylase

### Test principle: Enzymatic colorimetric



A variety of methods have been described for determining pancreatic  $\alpha$ -amylase. These include radio- and enzyme-immunoassays, the partial inhibition of salivary  $\alpha$ -amylase by an inhibitor derived from wheat germ, and calculation of pancreatic  $\alpha$ -amylase from remaining and total amylase activities. The kinetic method described here is based on inhibition of the activity of human salivary  $\alpha$ -amylase by two different monoclonal antibodies, and the well-proven cleavage of 4,6-ethylidene-(G7)-1,4-nitrophenyl-(G1)- $\alpha$ ,D-maltoheptaoside (Ethylidene Protected Substrate, or EPS) by pancreatic  $\alpha$ -amylase, followed by hydrolysis of all the degradation products to p-nitrophenol with the aid of

$\alpha$ -glucosidase (100% chromophore liberation). The results of this method correlate with those obtained by HPLC.

In the first incubation step, the activity of human salivary  $\alpha$ -amylase is inhibited by two different monoclonal antibodies (without affecting the pancreatic  $\alpha$ -amylase). In the second reaction step, defined oligosaccharides, such as 4,6-ethylidene-(G7) p-nitrophenyl-(G1)- $\alpha$ ,D-maltoheptaoside (Ethylidene-4-NP-G7) are cleaved under the catalytic action of pancreatic  $\alpha$ -amylases. The G2PNP, G3PNP, and G4PNP fragments formed are completely hydrolyzed to p-nitrophenol and glucose by  $\alpha$ -glucosidase.

### Proposed reagent composition approximately 5+1 formulation

#### Reagent 1

Composition	Concentration	Catalog Number
Buffer (HEPES, pH 7.0)	52.4 mmol/l	10 172 944 103
NaCl	87 mmol/l	
MgCl <sub>2</sub>	12.6 mmol/l	
CaCl <sub>2</sub>	0.075 mmol/l	
$\alpha$ -Glucosidase	>4 kU/l	11 626 329 103
Monoclonal antibodies against salivary $\alpha$ -amylase (mouse)	97 mg/l	11 543 598 103 11 543 601 103
Detergent, preservative, such as Polidocanol MIT		10 831 620 103 11 085 905 103

#### Reagent 2

Composition	Concentration	Catalog Number
Buffer (HEPES, pH 7.0)	52.4 mmol/l	10 172 944 103
Ethylidene-4-NP-G7 (EPS)	22 mmol/l	10 880 078 103
Detergent, preservative, such as Polidocanol MIT		10 831 620 103 11 085 905 103

Products are for further processing only.

Products are for further processing only.

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

[custombiotech.roche.com](http://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](mailto:mannheim.custombiotech@roche.com)

**Japan** Phone +81 3 5443 5285

Fax +81 3 5443 7934

[japan.custombiotech@roche.com](mailto:japan.custombiotech@roche.com)

**Asia Pacific** Phone +65 6371 6638

Fax +65 6371 6601

[apac.custombiotech@roche.com](mailto:apac.custombiotech@roche.com)

### **United States**

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

Fax +1 317 521 4065

[custombiotech.ussales@roche.com](mailto:custombiotech.ussales@roche.com)

**Canada** Phone +1 450 686 7050

Fax +1 450 686 7012

[custombiotech.can@roche.com](mailto:custombiotech.can@roche.com)

### **Published by**

Roche Diagnostics GmbH

Sandhofer Straße 116

68305 Mannheim

Germany

© 2011 Roche Diagnostics.

All rights reserved.

05837847990 © 0311