

## Product datasheet

# Amylase Assay Kit (Colorimetric) ab102523

★★★★★ 1 Abreviews 15 References 5 Images

### Overview

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<b>Product name</b>	Amylase Assay Kit (Colorimetric)
<b>Detection method</b>	Colorimetric
<b>Sample type</b>	Cell culture supernatant, Urine, Serum, Tissue Extracts, Cell culture media
<b>Assay type</b>	Enzyme activity (quantitative)
<b>Sensitivity</b>	> 0.2 mU/well
<b>Assay time</b>	0h 40m
<b>Species reactivity</b>	<b>Reacts with:</b> Mammals, Other species
<b>Product overview</b>	Amylase Assay Kit (Colorimetric) ab102523 detects activity of $\alpha$ -amylase through a two-step reaction.

In the amylase assay protocol, alpha-Amylase will cleave the substrate ethylidene-pNP-G7 to produce smaller fragments that are eventually modified by alpha-glucosidase. This causes the release of a chromophore that can then be measured at OD = 405 nm.

The assay can detect  $\alpha$ -amylase content as low as 0.2 mU.

Amylase assay protocol summary:

- add samples and standards to wells
- add reaction mix
- analyze with a microplate reader every 2-3 min for 30-60 min

**Notes**

Amylases are enzymes that break starch down to sugar molecules.  $\alpha$ -amylase is the major form of amylase found in humans and other mammals as well as an enzyme present in seeds, or in fungi (baker's yeast for instance).  $\alpha$ -amylase is a calcium metalloenzyme, completely unable to function in the absence of calcium. In human physiology, both the salivary and pancreatic amylases are major digestive enzymes.

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**Platform**

Microplate reader

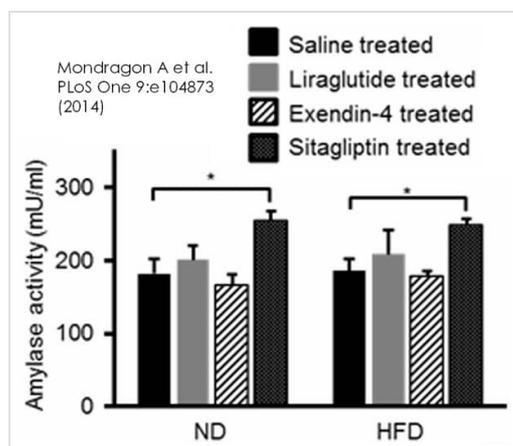
**Properties****Storage instructions**

Store at -20°C. Please refer to protocols.

Components	Identifier	100 tests
Amylase Assay Buffer	NM	1 x 55ml
Amylase Positive Control	Red	1 vial
Amylase Substrate Mix	NM	1 x 5ml
Nitrophenol standard	Yellow	1 x 150µl

**Relevance**

Amylases are enzymes that break starch down to sugar molecules. Alpha-amylase is the major form of amylase found in humans and other mammals as well as an enzyme present in seeds, or in fungi (baker's yeast for instance). Alpha-amylase is a calcium metalloenzyme, completely unable to function in the absence of calcium. In human physiology, both the salivary and pancreatic amylases are major digestive enzymes. Increased enzyme levels in humans are associated with salivary trauma; mumps due to inflammation of the salivary glands, pancreatitis and renal failure. A simple, direct and automation-ready procedure for measuring alpha-amylase activity is, therefore, very desirable.

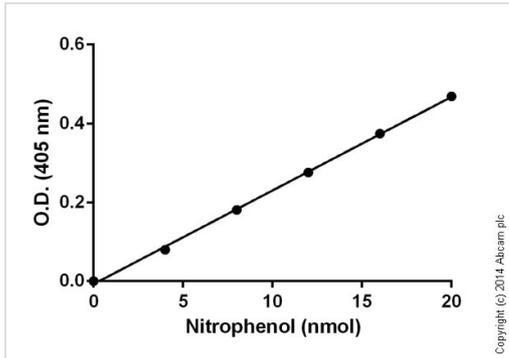
**Images**

Plasma amylase levels were measured (using ab102523) after 75 days treatment with saline or one of three drugs. ND, normal chow diet; HFD, high fat diet.  $p \leq 0.05$ , \*,  $p \leq 0.01$ , \*\*,  $n = 3-7$  mice.

There were no statistically significant changes in plasma amylase activity in mice that were administered with two of the drugs vs mice administered saline. However, administration of the third to animals on normal diet led to a 1.4-fold increase in amylase activity ( $p \leq 0.01$ ,  $n = 3$  per group) and a 1.3-fold increase in mice on a high fat diet ( $p \leq 0.01$ ,  $n = 4$  per group).

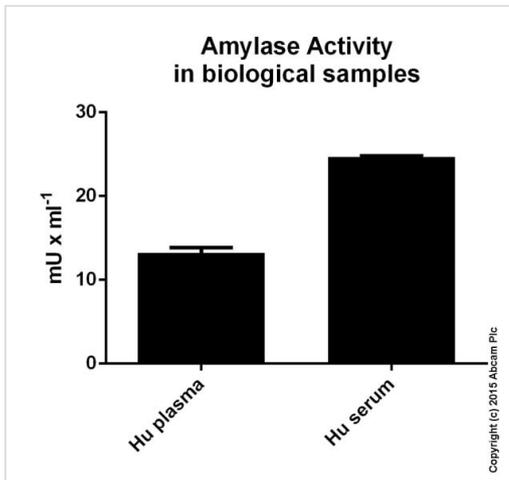
**Functional Studies - Amylase Assay Kit (ab102523)**

Image from Mondragon A et al., PLoS One. 2014;9(8):e104873. Fig 3.; doi: 10.1371/journal.pone.0104873. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>



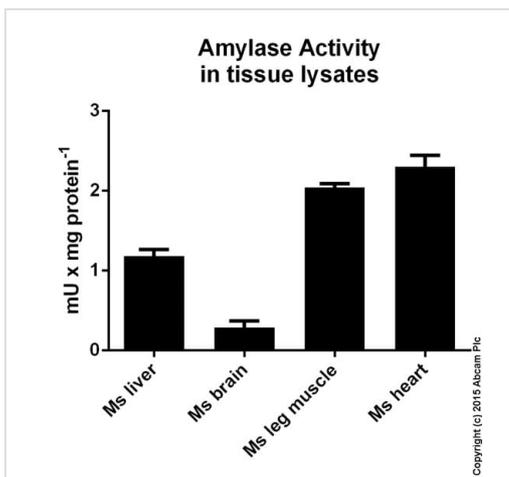
Standard curve: mean of duplicates (+/- SD) with background reads subtracted

Functional Studies - Amylase Assay Kit (ab102523)



Amylase activity measured in biological fluids showing activity (mU) per mL of tested sample. Samples were diluted 2 fold.

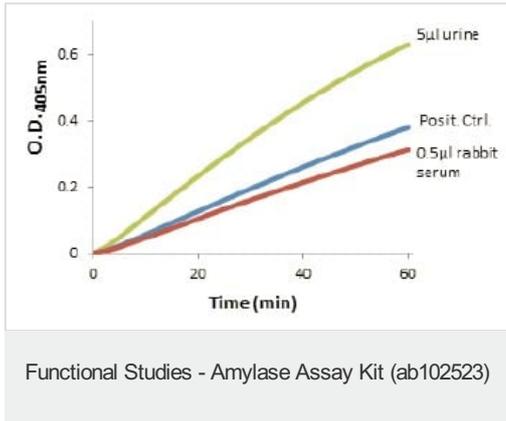
Functional Studies - Amylase Assay Kit (ab102523)



Amylase activity measured in tissue lysates showing activity (mU) per mg of extracted protein.

Protein concentration for samples varied from 16 mg/mL to 50 mg/mL. Samples were diluted 2 fold.

Functional Studies - Amylase Assay Kit (ab102523)



## Sample Test

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