

# Ammonia Assay Kit ab83360

★★★★★ [2 Abreviews](#) [41 References](#) [7 Images](#)

### Overview

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<b>Product name</b>	Ammonia Assay Kit
<b>Detection method</b>	Colorimetric
<b>Sample type</b>	Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate, Cell culture media
<b>Assay type</b>	Quantitative
<b>Sensitivity</b>	20 µM
<b>Assay time</b>	1h 00m
<b>Product overview</b>	Ammonia Assay Kit (ab83360) provides a rapid, simple, sensitive, and reliable assay for ammonia and ammonium.

In the ammonia assay protocol, ammonia and ammonium are converted to a product that reacts with a probe to generate color ( $\lambda_{\max} = 570 \text{ nm}$ ) which can be easily quantified by plate reader.

The kit can detect 1 nmol (~20 µM) of total ammonia and ammonium, which is much more sensitive than measuring ammonia with a NADPH based assay.

Ammonia assay protocol summary:

- add samples and standards to wells
- add reaction mix and incubate for 60 min at 37°C
- analyze with microplate reader

**Notes** This product is manufactured by BioVision, an Abcam company and was previously called K370 Ammonia Colorimetric Assay Kit. K370-100 is the same size as the 100 test size of ab83360.

Ammonia assays measure the total level of the ammonium ion and of ammonia in a sample.

At a physiological pH, nearly all ammonia exists as ammonium in solution.

The chemical equation that drives the relationship between ammonia and ammonium is:  $\text{NH}_3 + \text{H}_2\text{O} \leftrightarrow \text{NH}_4^+ + \text{OH}^-$

When the pH is low, the reaction is driven to the right, and when the pH is high, the reaction is driven to the left. In general, at around room temperature, at a pH less than 6.0, the proportion of ammonium-N plus ammonia-N as  $\text{NH}_3$  is very low and as  $\text{NH}_4^+$  is very high. At a pH around 8.0 (the ammonia assay buffer pH), the proportion as  $\text{NH}_3$  is 10 percent or less.

This is our most popular ammonia assay kit; [ammonia assay kit ab102509](#) uses an alternative non-enzymatic method.

**How other researchers have used Ammonia Assay Kit ab83360**

The ammonia assay kit has been used in publications in a variety of sample types, including:

- Human: A549, 293T and U2OS cell culture lysates<sup>1</sup>; A549 cell culture medium<sup>2</sup>
- Mouse: brain, liver tissue and serum<sup>3</sup>; plasma<sup>4</sup>; pancreas, kidney, liver, brain, and muscle tissue<sup>5</sup>; faeces<sup>6</sup>
- Bacteria: *B. pertussis* cultures<sup>7</sup>
- Cell culture medium<sup>8</sup>

References: 1 - Xu S et al 2019, Spinelli JB et al 2017, Trempolec N et al 2017; 2 - Jin L et al 2018; 3 - Wilson et al 2018; 4 - Khoja S et al 2018, Cantero et al 2016; 5 - Gutierrez-de-Jua V et al 2017; 6 - Shen et al 2016; 7 - Fyson et al 2017; 8 - Li et al 2016

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.

It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

## Platform

Microplate reader

## Properties

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### Storage instructions

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

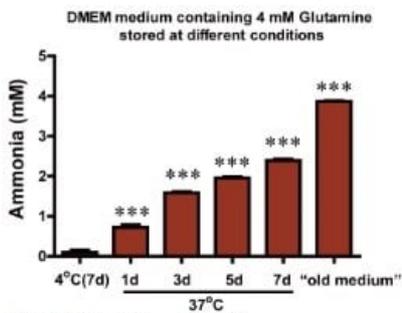
Components	100 tests
Ammonium Standard I	1 x 100µl
Assay Buffer XIV	1 x 25ml
Converter Mix I	1 vial
Developer III	1 vial
Development Enzyme Mix I	1 vial
OxiRed Probe	1 x 200µl

## Relevance

Ammonia is an important source of nitrogen for living systems. Nitrogen is required for the synthesis of amino acids, which are the building blocks of protein. Ammonia is a metabolic product which is created through amino acid deamination. It plays an important role in both normal and abnormal animal physiology like normal animal acid/base balance.

## Images

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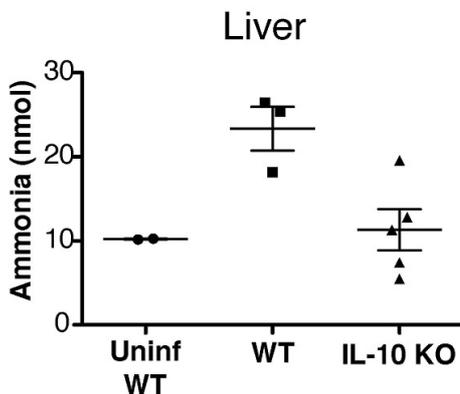
Li, Zhiyuan et al.  
 PloS one vol. 11,4  
 e0153526. (2016)

Ammonia Assay Kit ab83360 used with cell culture media

Li, Zhiyuan et al., PloS one vol. 11,4 e0153526., Fig 1

Zhiyuan Li et al. used ammonia assay kit ab83360 to examine the build-up of ammonia in old cell culture medium containing glutamine and how this might induce autophagy in cultured cells.

The ammonia assay was used to measure the ammonia concentration in cell culture medium containing Glutamine (medium alone, without cells) which was stored at 4°C or at 37°C for between 1-7 days. They found that ammonia levels increased significantly in the medium stored at 37°C.



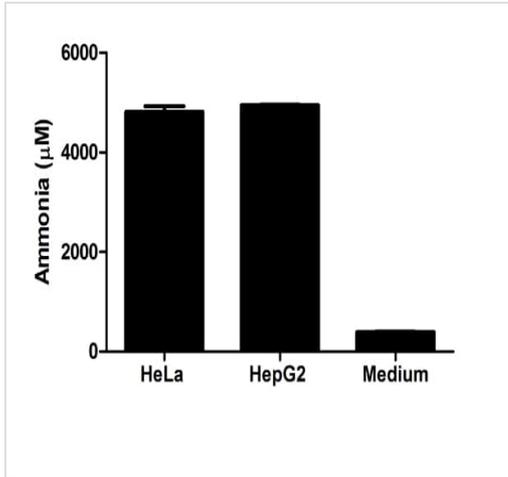
Wilson, Kyle D et al.  
 Journal of neuroinflammation vol. 15,1 173. (2018)

Ammonia Assay Kit ab83360 used with liver tissue

Wilson, Kyle D et al., Journal of neuroinflammation vol. 15,1 173., Additional file 2

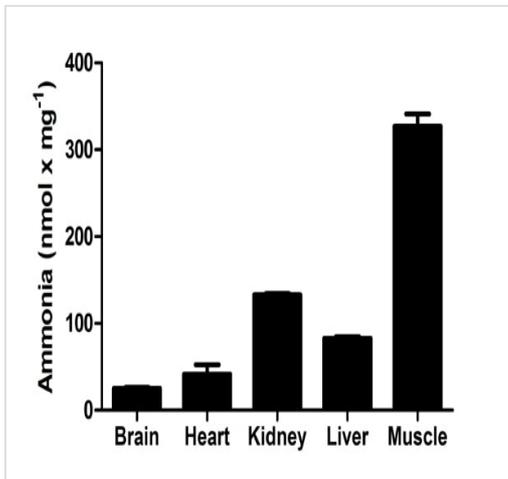
Kyle Wilson et al. used ammonia assay kit ab83360 to examine ammonia levels in liver tissue in response to *P. chabaudi* infection. They found that in IL-10 KO mice, ammonia levels were not elevated above WT during *P. chabaudi* infection.

WT and IL-10 KO mice were infected with *P. chabaudi* and monitored during the peak of infection. WT mice were sacrificed at the peak of infection (day 10 p.i.) and IL-10 KO mice upon severe morbidity as determined via SHIRPA score.



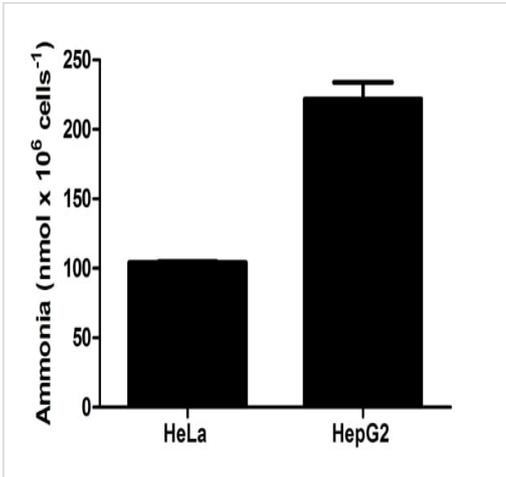
Ammonia assay performed with cell culture medium (range of dilution 1:10-1:200) and control medium (range of dilution 1:1-1:20), background signal subtracted (duplicates +/- SD).

Ammonia Assay Kit ab83360 used with cell culture media



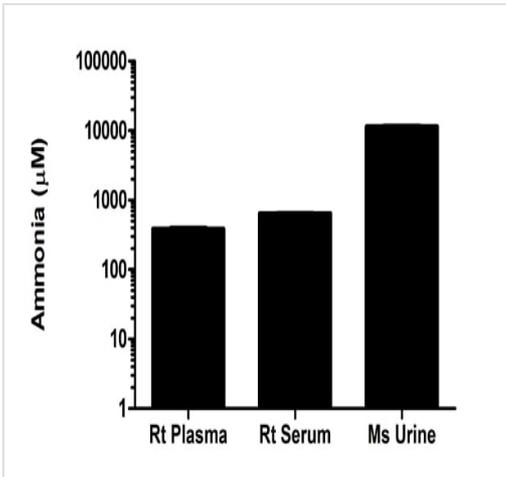
Ammonia assay performed with mouse tissue lysates (mg of extracted protein), background signal subtracted (duplicates +/- SD).

Ammonia Assay Kit ab83360 used with tissue lysates



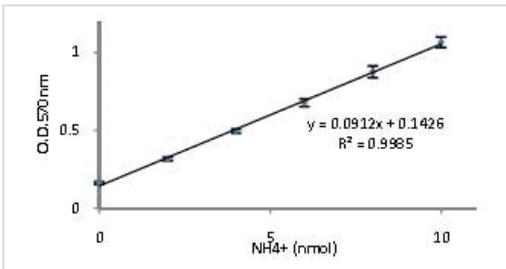
Ammonia assay performed in cell lysates, background signal subtracted (duplicates +/- SD).

Ammonia Assay Kit ab83360 used with lysates of cultured cells



Ammonia assay performed in biological fluids (range of dilution 1:1-1:100), background signal subtracted (duplicates +/- SD).

Ammonia Assay Kit ab83360 used with biofluid samples



Example of ammonia assay standard curve using ab83360

Ammonia assay standard curve

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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