

Product datasheet

Urine m6A Assay Kit ab233493

2 Images

Overview

Product name	Urine m6A Assay Kit
Detection method	Colorimetric
Sample type	Urine
Assay type	Quantitative
Sensitivity	0.01 ng/well
Assay time	4h 00m
Species reactivity	Reacts with: Human
Product overview	Urine m6A Assay Kit (ab233493) is a complete set of optimized buffers and reagents to colorimetrically quantify m ⁶ A in urine using an inhibitory competitive immunoassay method. It is suitable for detecting total urinary m ⁶ A levels, resulting from whole body turnover or degradation of DNA/RNA containing m ⁶ A, using urine from humans and animals.

In this ELISA-like inhibitory competitive immunoassay, urine samples and the m⁶A standard are first incubated with a m⁶A antibody solution and then transferred to strip wells coated with m⁶A polynucleotide. The well is washed to remove any unbound reagents after incubation and then a detection antibody is added to generate a signal that can be measured colorimetrically by reading the absorbance in a microplate spectrophotometer. Because m⁶A in the urine sample inhibits the binding of m⁶A antibody to m⁶A coated on the well, higher concentrations of m⁶A in the urine sample lead to a reduced binding of the antibody to the m⁶A on the well. Therefore the signal or OD intensity measured from the well will be inversely proportional to the amount of m⁶A in the urine sample and the amount of m⁶A in the urine sample can be quantified by a comparison with a predetermined m⁶A standard.

Notes Nucleobase m⁶A, a modified form of adenosine converted by adenosine methyltransferases is widespread in different cellular RNAs and also found in DNA. The biological importance of DNA/RNA m⁶A-methylation as a major epigenetic modification in phenotype and gene expression has been recognized widely. m⁶A plays crucial roles in regulating DNA replication, DNA damage, RNA splicing, transposition, transcription, and cellular defense. In humans, the m⁶A modification is probably catalyzed by a methyltransferase complex METTL3/METTL14 and removed by the α-ketoglutarate (αKG)- and Fe²⁺-dependent dioxygenases such as FTO, ALKBH5 and TET-like enzymes. It was shown that METTL3 and α-KG /Fe²⁺-dependent dioxygenases play important roles in many biological processes, ranging from development and metabolism to fertility.

Urinary excretion of m⁶A is an indication of the whole body turnover or the degradation of DNA/RNA, especially tRNA. The urinary m⁶A level can be changed with a change of the bodies' turnover of m⁶A DNA/RNA or alteration of cellular DNA/RNA m⁶A status. A number of studies have indicated that m⁶A excreted in urine has the potential to act as a cancer biomarker. For example, an elevated level of urinary m⁶A was observed in colorectal cancer patients with active disease states.

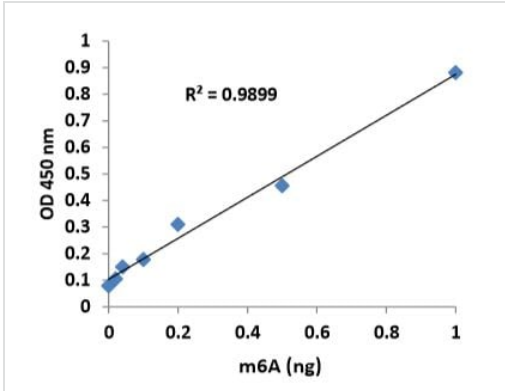
Platform Microplate reader

Properties

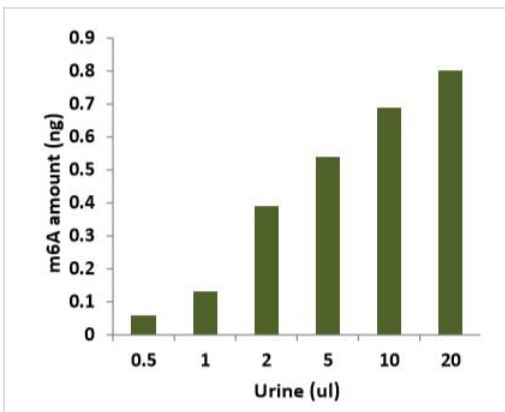
Storage instructions Please refer to protocols.

Components	1 x 48 tests	1 x 96 tests
10X Wash Buffer	1 x 14ml	1 x 28ml
Binding Solution	1 x 5ml	1 x 10ml
Capture Antibody, 1000X	1 x 4µl	1 x 8µl
Detection Antibody, 2000X	1 x 4µl	1 x 8µl
Developer Solution	1 x 5ml	1 x 10ml
Enhancer Solution	1 x 4µl	1 x 8µl
m6A Assay Solution, 500X	1 x 10µl	1 x 20µl
m6A Standard, 2 µg/ml	1 x 10µl	1 x 20µl
Negative Control, 50 µg/ml	1 x 10µl	1 x 20µl
Plate 1 (Assay Plate, flat bottom)	1 unit	1 unit
Plate 2 (Sample Preparation Plate, round bottom)	1 unit	1 unit
Stop Solution	1 x 5ml	1 x 10ml

Images



m6A standard was added into the assay wells at different concentrations and then measured with Urine m6A Assay Kit (ab233493).



m6A level is quantified from different volumes of human urine using Urine m6A Assay Kit (ab233493).

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