[Summary]

[Technical Problem]

[0006]

Quantifying the above-mentioned NAD+ and NAD+ precursors such as NMN by the DBS method described in NPL 3 still has a problem of inaccurate quantification. This is because of the following reasons: Firstly, the storage conditions tend to alter greatly the degree of decomposition of NAD+ and NAD+ precursors such as NMN, which requires a special processing beforehand such as quick freezing for the quantification; further, the DBS method, described in NPL 3 etc., has poor stability, such as storage stability after dropping onto a filter paper, depending on the quantifying target substance, which may disturb accurate quantification.

[0007]

An object of the present disclosure is to provide an accurate quantitative method using the DBS method for NAD+ or NAD+ precursors such as NMN.

[Solution to Problem]

[0008]

The present disclosure was made for the purpose of solving the above problems, and consists of the following items.

(1)

A method for quantifying nicotinamide adenine dinucleotide (NAD+) or nicotinamide mononucleotide (NMN) in a test subject, the method comprising the following Steps 1 and 2:

Step 1 of bringing a filter paper, impregnated with a radical inhibitor or a chaotropic agent,

of cellulose.

(10)

The method according to any one of (1) to (9), wherein the solvent is water and/or acetonitrile.

(11)

The method according to (10), wherein the solvent is water.

(12)

The method according to any one of (1) to (11), wherein the quantifying in Step 2 is performed by a method using a mass spectrometer or a colorimetric method.

(13)

A kit for performing the method according to any one of (1) to (12), comprising: a blood sampling device and a filter paper impregnated with a radical inhibitor or a chaotropic agent.

(14)

A filter paper impregnated with a radical inhibitor or chaotropic agent for performing the method according to any one of (1) to (12).

In one aspect, the present disclosure provides a method for quantifying nicotinamide adenine dinucleotide (NAD+) or nicotinamide mononucleotide (NMN) in a test subject, the method comprising the following Steps 1 and 2:

Step 1 of bringing a filter paper, impregnated with a radical inhibitor or a chaotropic agent, and with added blood derived from the test subject, into contact with a solvent;

Step 2 of quantifying the nicotinamide adenine dinucleotide (NAD+) or nicotinamide mononucleotide (NMN) in the solvent obtained in Step 1.

In another aspect, the present disclosure provides a kit for performing the method as defined herein, comprising: a blood sampling device and a filter paper impregnated with a radical inhibitor or a chaotropic agent.

In another aspect, the present disclosure provides a filter paper impregnated with a radical inhibitor or chaotropic agent for performing the method as defined herein.

[Advantageous Effects of Invention]

[0009]

The present invention provides good storage stability for NAD+ or NAD+ precursors such as NMN, and thus provides an accurate quantitative method using the DBS method for NAD+ or NAD+ precursors such as NMN.

[Description of Embodiments]