

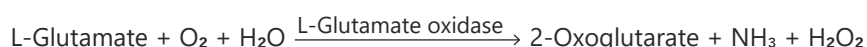
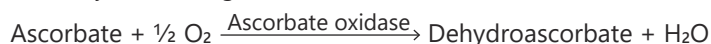
L-Glutamine Assay Kit



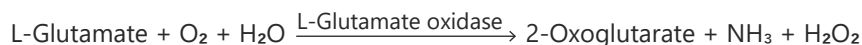
[Contents]	Reagent A: 30 mL
	Reagent B: 30 mL
	L-Glutamate standard solution (100 mg/L) : 1.5 mL
[Number of Assays]	60
[Analyte]	L-Glutamine
[Storage Temperature]	2 - 8°C
[Expiration Date]	Indicated individually

[Principle]

Step1: The enzymes in Reagent A eliminate the effects of ascorbate and L-glutamate coexisting in the sample.



Step2: The enzymes in Reagent B catalyze the stoichiometric conversion of L-glutamine into a colored product.



[Sample and standard solution]

Sample solutions should be prepared to contain L-glutamine at a concentration of 10 to 200 mg/L, while ensuring that the coexisting L-glutamate concentration is 600 mg/L or less. (See [Precautions])

The L-glutamate standard solution (100 mg/L) should be used as supplied.

Because L-glutamate is used as the standard, the assay procedures for the sample and the standard solution are different. Follow the respective procedures carefully.

[Procedure]

[Color Development of Blank and Standard]

1. Pipette 0.5 mL of Reagent A and 0.5 mL of Reagent B into each of two cuvettes and mix thoroughly.
2. Add 0.05 mL each of water and the standard solution into separate cuvettes, mix gently and incubate at room temperature for 10 minutes.
3. Read the absorbances at 555 nm with a spectrophotometer.
4. Calculate the slope of the calibration curve as follows:

$$\text{Slope} = (A_{\text{std}} - A_{\text{blk}}) / 100$$

A_{std} : absorbance of colored standard solution (100 mg/L)

A_{blk} : absorbance of blank solution

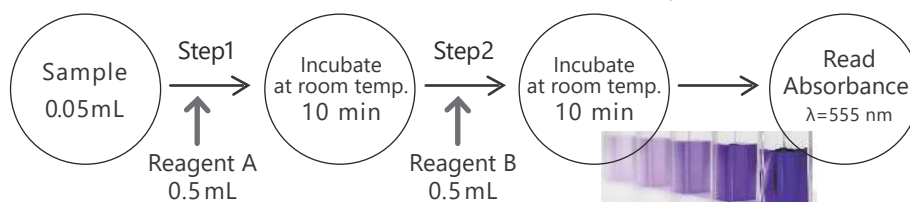
[Color Development of Sample]

5. Pipette 0.05 mL each of sample solutions into separate cuvettes.
6. Add 0.5 mL of Reagent A to each cuvette, mix gently, and incubate at room temperature for 10 minutes. (Step1)
7. Add 0.5 mL of Reagent B to each cuvette, mix gently, and incubate at room temperature for 10 minutes. (Step2)
8. Read the absorbances at 555 nm with a spectrophotometer.
9. Calculate L-glutamine concentration of the samples as follows:

$$\text{L-glutamine concentration (mg/L)} = (A_{\text{sample}} - A_{\text{blk}}) / \text{Slope}$$

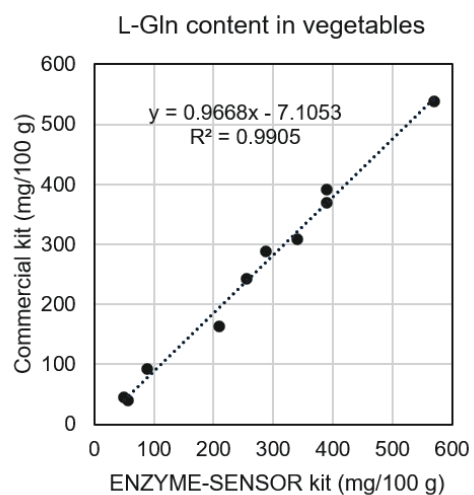
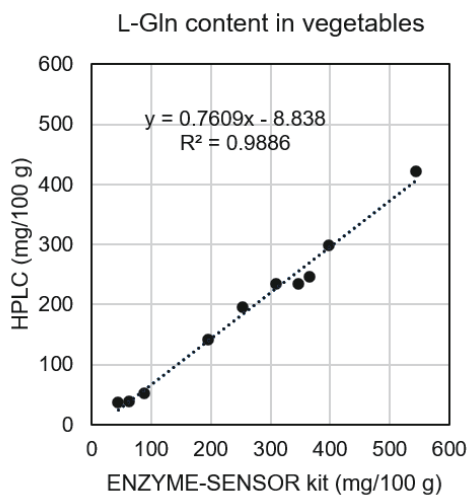
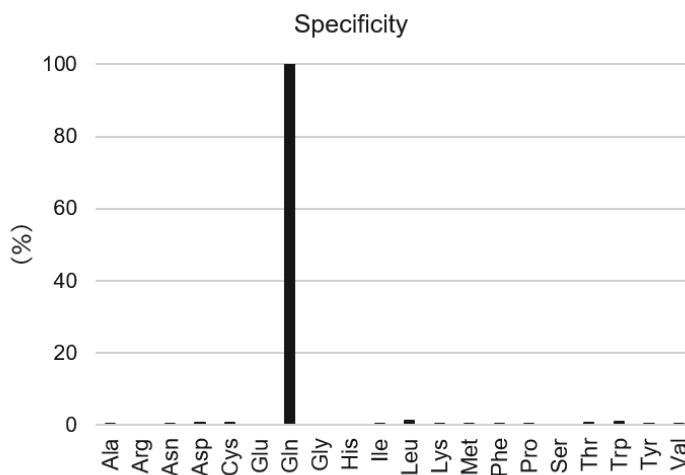
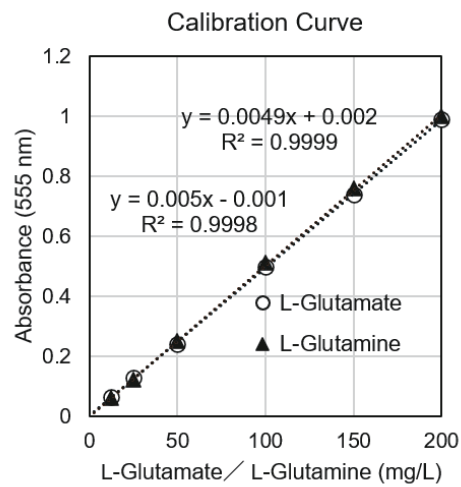
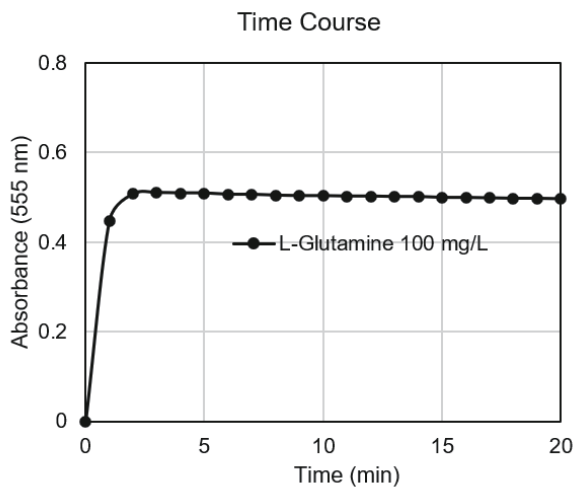
A_{sample} : absorbance of colored sample solution

A_{blk} : absorbance of blank solution



[Precautions]

- Store the reagents at 2 - 8°C.
- Bring the reagents close to room temperature (20-30°C) before use.
- More accurate measurements can be obtained by strictly controlling the reaction time to 10 minutes after adding Reagent B.
- Samples containing high concentrations of reducing substances other than vitamin C (e.g., polyphenols) cannot be measured. Vitamin C is enzymatically removed by Reagent A during the Step1 reaction.
- For samples containing more than 600 mg/L of L-glutamate, dilute the sample or extend the reaction time for Step1.
- The reaction scale may be adjusted as appropriate according to the cuvette size in use; however, do not alter the volume ratios between the sample (or standard solution) and the reagents.



ENZYME-SENSOR Co.,Ltd.

Tsukuba Center D36 2-1-6 Sengen Tsukuba, Ibaraki 305-0047, JAPAN

Phone&Fax : +81-29-858-9203

URL : <https://enzyme-sensor.net>

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