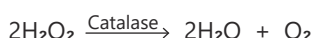
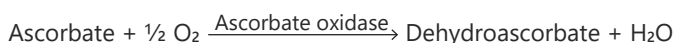
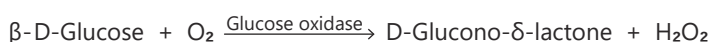


Lactose Assay Kit

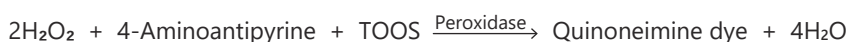
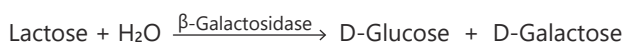
	[Contents]	Reagent A: 30 mL
		Reagent B: 30 mL
		Lactose standard solution (100 mg/L) : 1.5 mL
	[Number of Assays]	60
	[Analyte]	Lactose
	[Storage Temperature]	2 - 8°C
	[Expiration Date]	Indicated individually

[Principle]

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



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



[Sample and standard solution]

Sample solutions should be prepared to contain lactose at a concentration of 20 to 600 mg/L, while ensuring that the coexisting D-glucose concentration is 1000 mg/L or less. (See [Precautions])

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

[Procedure]

- Pipette 0.05 mL each of pure water (for blank), the standard solution and the sample solutions into separate cuvettes.
- Add 0.5 mL of Reagent A to each cuvette, mix gently, and incubate at room temperature for 20 minutes. (Step1)
- Add 0.5 mL of Reagent B to each cuvette, mix gently, and incubate at room temperature for exactly 10 minutes. (Step2)
- Read the absorbances at 555 nm with a spectrophotometer.
- Calculate the slope of the calibration curve as follows:

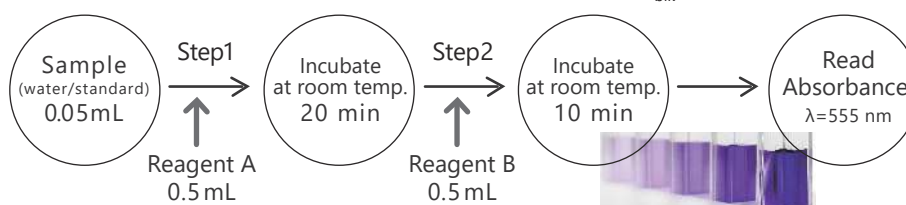
$$\text{Slope} = (A_{\text{std}} - A_{\text{blk}}) / 100$$

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

- Calculate lactose concentration of the samples as follows:

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

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 1000 mg/L of D-glucose, dilute the sample or mix the cuvette gently several times in Step 1.
- 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.

