



E-mail:sales@sunlongbiotech.com

www.sunlongbiotech.com

Soil β-1,4-Glucanase / Cellobiosidase (S-C1) Activity Assay Kit

Operation Equipment: Spectrophotometer

Note: Take two or three different samples for prediction before test.

Catalog Number: AK0118

Size: 50T/24S

Components:

Reagent I: Toluene 3mL×1. Storage at 4C. (self-provided reagent)

Reagent II: Powder×2. Storage at 4C. Add 10 mL of Reagent III to fully dissolve when the solution

will be used. Store unused reagents at 4°C

Reagent III: 50 mL×1. Storage at 4C. Reagent IV: 60 mL×1. Storage at 4C.

Standard solution: 1mL×1, 5mmol/L p-nitrophenol solution. The standard is diluted 50 times with reagent

III to obtain a 100µmol/L standard solution before use.

Product Description

 β - 1,4-glucanase/cellobiosidase (C1, EC3.2. 1.91) exists in bacteria, fungi and animals, and is a component of the cellulase system. The end of the linear molecule hydrolyzes the β -glucosidic bond and cuts out one cellobiose molecule every time.

S-C1 can catalyze p-nitrobenzene cellobiose (PNPC) to p-nitrophenol, which has a characteristic light absorption at 400nm.

Reagents and Equipment Required but Not Provided

Spectrophotometer, centrifuge, water-bath, transferpettor, 1 mL glass cuvette, mortar, **toluene**, sieve (30-50 mesh) and distilled water.

Procedure

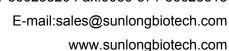
1. Sample preparation:

Fresh soil samples are naturally air-dried or oven dried at 37°C and passed through a 30-50 mesh sieve.

2. Determination steps and sample adding table:

- a. Preheat spectrophotometer more than 30 min, adjust wavelength to 400 nm and set zero with distilled water.
- b. Operate according to the following table:

Reagent Name	Test tube (T)	Control tube (C)	Standard tube (S)	Blank tube (B)
Soil sample (g)	0.1	0.1		
Reagent I (μL)	50	50		
Mix by shaking to make the soil sample wet and leave it for				





15min at room temperate	ure			
Reagent II (μL)	400			
Reagent III (μL)	500	500		
Mix well. After reactin immediately boil in a w prevent water loss) and o	rater bath for 5 n			
Reagent II (μL)		400		
Centrifuge at 10,000 rp supernatant	om and 25C for	10 min and take the		
Supernatant	500	500		
Standard solution (µL)	-	-	500	
Distilled water				500
Reagent IV (μL)	1000	1000	1000	1000

Mix well, react for 2 minutes at RT. record the absorption value a of each tube at 400 nm, calculate $\Delta A = A_T - A_C$, $\Delta A_S = A_S - A_B$

Calculation of S-C1 activity:

1. Calculation of S-C1 activity:

Unit definition: one unit is defined as the amount of enzyme that catalyzes the production of 1 µmol of p-nitrophenol per day every gram of soil catalyzes at 37C.

S-C1 activity (U/mg) = $\Delta A \div (\Delta A_S \div C_S) \times V1 \div W \div T = 2.28 \times \Delta A \div \Delta A_S \div W$

 C_S : concentration of standard solution, 100 μ mol/L

V1: the volume of reaction system, 9.5×10^{-4} L;

W: sample fresh weight, g;

T: reaction time: 1/24d.

Note

1. If the absorbance value is greater than 1.5, it is recommended to dilute the supernatant with reagent III and determine with decrease the quality of soil samples.

Experimental Examples:

- 1. Take two tubes of 0. 1g soil sample, which are the measuring tube and the control tube. Follow the measuring steps and mark them as At and Ac. Calculate Δ At=At-Ac=0.79-0.308=0.482, Δ As=As-A b=0.599-0=0.599, calculate the enzyme activity:
 - S-C1 activity (U/g soil) $=2.28\times\Delta At \div \Delta As \div W = 2.28\times0.482 \div 0.599 \div 0.1 = 18.3466 \text{ U/g soil}.$
- 2. Take two tubes of 0. 1g forest soil samples, which are the measuring tube and the control tube. Follow the measuring steps and mark them as At and Ac. Calculate Δ At =At-Ac=0.613-0.346=0.267, Δ A s=As-Ab=0.599-0=0.599, calculate the enzyme activity:

S-C1 activity (U/g soil) = $2.28 \times \Delta At \div \Delta As \div W = 2.28 \times 0.267 \div 0.599 \div 0.1 = 10.163 U/g soil$

Related Products:



SunLong Biotech Co.,LTD

Tel: 0086-571-56623320 Fax:0086-571-56623318

E-mail:sales@sunlongbiotech.com www.sunlongbiotech.com

AK0122/AK0121 Soil β -Xylosidase(S- β -XYS) Activity Assay Kit AK0155/AK0154 Soil α -glucosidase(S- α -GC) Activity Assay Kit Soil Saccharase(S-SC) Activity Assay Kit