Soil Protein Extraction Kit

Cat: EX1770
Size: 50T/100T
Storage: 2-8℃, valid for 1 year.

Kit Components:

Kit Components	50T	100T	Storage
Component A: Soil Protein Extract A	25mL	50mL	2-8℃
Component B: Protease Inhibitor Mixture	100μL	200μL	-20℃

Note:

1. Protease inhibitors can also be stored at 2-8℃ before use without open lid. Store at -20℃ after opening the lid for use.
2. The protease inhibitor is solid at 2-8℃. Take it out of the refrigerator and return to room temperature or 37℃ water bath for a short time. When it becomes liquid, centrifuge it to the bottom of the tube and then open the lid.
3. Please use the reagent as soon as possible after unpacking!

Introduction:

Soil protein extraction kit is suitable for extracting total protein from all kinds of red soil, brown soil, brown soil, black soil, chestnut calcium soil, desert soil, saline-alkali soil, lithologic soil and alpine soil. The extraction process is simple and convenient, and can be completed within 1 hour. The kit contains a mixture of protease inhibitors, which prevents the protease from degrading the protein, providing a guarantee for the extraction of high-purity protein.

The protein extracted from this kit can be used for downstream protein research experiments such as Western Blotting, protein electrophoresis, immunoprecipitation, ELISA, transcriptional activity analysis, Gel shift gel blocking assay, enzyme activity determination, etc.

The proteins extracted by this kit are active proteins with natural protein conformation, which can be used for different downstream applications.

EDTA is not contained in this kit and is compatible with metal chelates and chromatography, among others.

Self-prepared Reagents and Instruments:

Centrifuge, oscillator, homogenizer/homogenizer, vortex mixer, pipette, refrigerator, ice box, PBS buffer, protein quantification kit, centrifuge tube, suction tip, disposable gloves.

Product Features:

1. Easy to use, shorten the time of protein extraction to 30min to 1h.
2. Containing protein stabilizer, the extracted protein is stable.
3. The background interference is low when the protein concentration is detected by UV.
4. Protease inhibitor inhibited protein degradation, and the formulation of protease inhibitor was optimized. The protease inhibitor mixture consists of 6 separate protease inhibitors, each of which specifically inhibits one or several protease activities. The optimized composition of this mixture allows it to inhibit almost all important protease activities, including serine protease, cysteine protease, aspartate protease, alanyl-aminopeptidase, etc.

Protocols:

First, use precautions

1. Before the formal experiment, please select several samples to do pre-experiment, in order to optimize the experimental conditions and achieve the best experimental results.
2. Centrifuge the reagent in the screw cap microreagent tube briefly before opening the cap, and centrifuge the liquid on the cap and inside wall to the bottom of the tube to avoid reagent loss when opening the cap.
3. All reagents in the process of the experiment must be pre-cooled; All utensils must be pre-cooled in a -20℃

refrigerator. The sample must be kept at a low temperature during the whole process.

4. If the solution of protease inhibitor is precipitated during storage, it will not affect the use, and it should be used normally after dissolution.
5. If the kit cannot be used up in a short time, the protease inhibitor mixture should not be added to the extraction solution all at once.
6. Other protease inhibitor products can be added as needed for your own experiment.
7. In the downstream experiment, if the enzyme activity of specific protease or phosphatase is detected, the extract can be without protease or phosphatase inhibitors. Pay attention to the low temperature operation during the extraction process to shorten the centrifugation time.
8. It is prohibited to mix with other brands of reagents, otherwise the effect will be affected.
9. Contamination of the sample or reagent with bacteria or fungi or cross-contamination of reagents may result in false results.

Second, soil protein extraction

1. Extraction solution preparation:
   Add 2μL protease inhibitor mixture into every 1mL cold protein extract, mix well and put on ice for later use.
2. The soil is dried and sifted to remove impurities such as plant roots, and then ground into fine uniform particles in a mortar.
3. Add 1mL of cold soil protein extraction liquid (about 3 times the volume of the soil) to the ground after 0.5g-2g, and oscillate it on the vortex mixer for 1min to make it fully and evenly mixed. After mixing, oscillate it in the shaking table at 4℃ for 15-20min.
4. Centrifuge at 4℃, 12000×g, for 5min.
5. Inhale the supernatant into another pre-cooled clean centrifuge tube to obtain the total soil protein.
6. The protein extract was quantified and divided into -80℃ refrigerator for reserve or directly used in downstream experiment.

Analysis of Common Problems:

1. Low protein concentration?

Some samples may not be fully cleaved when processed, resulting in low protein concentrations. Just extend the processing time of reagent A appropriately. It is best to handle under the condition of continuous oscillation, and it can be mixed with a suction head at intervals of several minutes without an oscillator.

2. What method is used to quantify the protein?

The BCA method is recommended. The Bradford method is not suitable because reagent A contains components that interfere with the Bradford method, resulting in inaccurate quantification. If dialysis has been performed or the buffer system has been replaced with a desalting column, the Bradford method can be used for quantification.

3. Is the extracted protein active?

This kit does not contain ionic detergent components, does not destroy the structure of the protein, does not destroy the original interaction between the proteins, and the proteins maintain their natural conformation and activity.

Note:

1. This kit is intended for scientific research only and is not intended for diagnosis or treatment.
2. It is best to use a disposable suction head, tube, bottle, or glassware, and reusable glassware must be washed and thoroughly cleared before use.
3. Remove residual cleaning agents.
4. All samples and contact utensils should be disposed of in accordance with the prescribed procedure after the experiment is completed.
5. Avoid skin or mucous membrane contact with the reagent.
6. If the reagent accidentally comes into contact with skin or eyes, it should be rinsed with water immediately.