

LPS (Lipopolysaccharide) Extraction Kit

Description

Lipopolysaccharides (LPS) is a major constituent of the outer membrane of gram-negative bacteria. Some of LPS is a disease-causing endotoxin; it is also important in classification of serum type. Commonly using method is the complicated hot phenol-water extraction that takes long period of time. LPS Extraction Kit is designed for rapid and convenient extraction of LPS. It even enables LPS extraction from small volume of bacterial cells.

Characteristics

- Takes only 60 minutes to extract LPS
- Gives reproducibly high yields of LPS

Storage

Store all components at 4°C.

- ▶ LPS extraction from bacterial cells
- ▶ Distribution of bacteria by patterns of the carbohydrate chain length
- ▶ Immunostimulatory effect of the extracted LPS from bacteria
- ▶ Very simple and convenient steps
- ▶ Rapid reaction time (within 60 minutes)

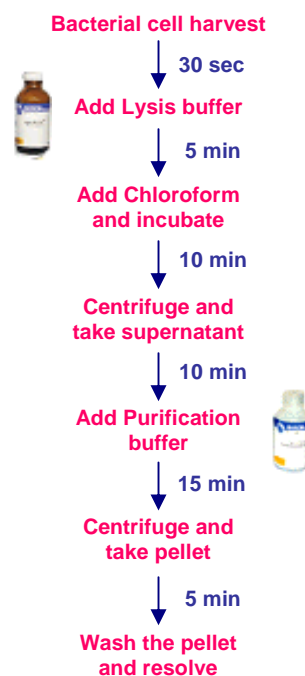
Format : Soution type (Lysis buffer and Purification buffer)

Sample source: Bacterial cells

Sample size: The yield of LPS extraction is proportional to volume of culture. The yield of LPS is at its maximum when 3~5 ml of culture is used. The optimal culture volume is 1~2 ml at OD₆₀₀ of 0.8-1.2.

Prep. time: <60 minutes including a lysis step

Rehydration volume: 50-200 μl



Product	Size	Cat. No.	Contents
LPS (Lipopolysaccharide) Extraction Kit	100 Rxn	17141	Lysis buffer 100 ml Purification buffer 80 ml

■ The LPS Extraction Yields

The extracted LPS yields were compared with commercial control LPS (1 mg/ml), Sigma. In this experiment, LPS were separately extracted from *E. coli* (2 ml, OD₆₀₀ = 1.0, G(-)) pellet and LB broth. Approximately 30 μg of LPS were extracted from pellet.

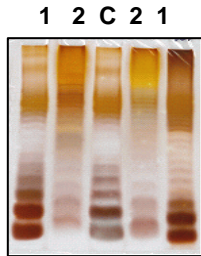
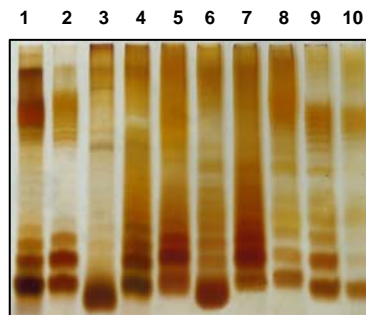


Fig. Comparison between the extracted LPS and the control LPS (commercial, Sigma)

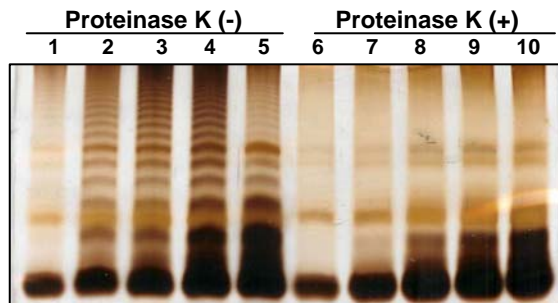
Lane 1 : *E. coli* pellet
Lane 2 : *E. coli* incubated LB media
Lane C : Control Sigma LPS (1 mg/ml)



Lane 1 : *S. typhimurium*
Lane 2 : *S. enteritidis*
Lane 3 : *E. coli* O:055
Lane 4 : *E. coli* O:111
Lane 5 : *S. gallinarum*
Lane 6 : *S. enteritidis*
Lane 7 : *S. typhimurium*
Lane 8 : *E. coli* (wild type)
Lane 9 : *E. coli* (O:1)
Lane 10 : *E. coli* (O:2)

Fig. Extraction of LPS from diverse bacteria species

LPS were extracted from diverse bacteria using LPS Extraction Kit, then confirmed with SDS-PAGE after silver staining. LPS Extraction Kit is able to use both the extraction of LPS and LPS pattern among diverse bacteria species.



No.	Proteinase K (-)	No.	Proteinase K(+)
1	1 ml	6	1 ml
2	2 ml	7	2 ml
3	3 ml	8	3 ml
4	4 ml	9	4 ml
5	5 ml	10	5 ml

Fig. Proteinase K treatment after LPS extraction

(1) Generally LPS is composed of lipids, polysaccharides and proteins. The LPS pattern were changed after Proteinase K treatment.

(2) For this experiment, *salmonella* (SR2N6) were used in the table described below, and Proteinase K were treated with the concentration of 70 $\mu\text{g}/30 \mu\text{l}$.

(3) The patterns of extracted LPS from SR2N6 were changed by Proteinase K treatment (The ladder shapes, proteins, were disappeared).