

### Separation and purification of ribosomes using swinging bucket rotor designed for tabletop micro ultracentrifuge

CS150NX tabletop micro ultracentrifuge / S50ST swinging bucket rotor

Ribosomes play an important role as a site of protein synthesis inside cells. The structure and the mechanisms of action have been investigated. Ribosome is an RNA-protein complex. It is comprised of a large subunit and a small subunit. There is a 70S ribosome that is comprised of a 30S subunit and a 50S subunit in prokaryotic *Escherichia coli*.

Following is our experiment report on separation of 70S ribosomes from *Escherichia coli* by means of the newly developed S50ST swinging bucket rotor that can hold the 7PA tubes and has the largest capacity in its class.

#### Experiment

##### 1. Instruments

Centrifuge: CS150NX tabletop micro ultracentrifuge  
Rotor: S50ST swinging bucket rotor (Up to 4 tubes can be contained.)  
Tube: 7PA tube (Actual capacity: 7 ml)

##### 2. Separation procedure

Suspend *Escherichia coli* in TMA I buffer and mix it with glass beads to crush. Perform a quick centrifugation to remove the glass beads.



Perform centrifugation using the S50ST swinging bucket rotor. (39,000 rpm, 30 minutes, 4°C)



Remove the supernatant and perform centrifugation using the S50ST swinging bucket rotor. (34,000 rpm, 6 hours, 4°C)



Suspend the sediment (crude 70S ribosome fraction) in 1.8 ml TMA I buffer.



Layer it on 5 ml of 30% (W/V) sucrose – TMA I buffer.

↓  
Perform centrifugation using the S50ST swinging bucket rotor. (40,000 rpm, 15 hours, 4°C)

↓  
Suspend the sediment (purified 70S ribosome) in 2 ml TMAI buffer and store it at -70°C.

Reference: Basic Biology (Written by Hakobu Nakamura, published by Baifukan in 1981)

## Instrument



CS150NX tabletop micro ultracentrifuge

Easy-to-set top loading type bucket



S50ST swinging bucket rotor

\*This rotor can also be used with the CS150NX, CS-GX II series and CS-GXL series centrifuges.

If you have any inquiry of this application or products, please contact us through our web site.

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