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APPLICATION

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Concentration of protein solution by means of T15A38 fixed angle rotor

CF16RX/ CF15RX versatile compact centrifuges

T15A38 fixed angle rotor can concentrate a low concentration sample (e.g. 0.01 mg/ml) into the one about **fifty times** thicker than before in a mere **twelve minutes** (e.g. from 0.5 ml to 0.01 ml).

Concentration and demineralization of protein solutions are necessary pretreatment in order to prepare samples for electrophoresis of protein and to analyze the structure.

We carried out an experiment on concentration of protein sample by means of T15A38 fixed angle rotor and Millipore's "Microcon YM-30". As a result, T15A38 fixed angle rotor could concentrate a sample whose concentration was as low as 0.01 mg/ml into the one about fifty times thicker than before. And the recovery was 96%.

1. Experimental conditions

Centrifuge: CF16RX versatile compact centrifuge

Rotor: T15A38 fixed angle rotor

Speed: (In case of using outside cavities) 12,000 rpm, (In case of using inside cavities) 13,000 rpm

Maximum RCF: 14,000 x g

Time: 12 minutes

Temperature: 15 degrees C

Filter: Millipore's "Microcon YM-30" (molecular weight cutoff: 30,000)

Sample: Standard serum solution (Wako Pure Chemical Industries, Ltd.)

(1) 0.01 mg/ml (low concentration sample)

(2) 1 mg/ml

Amount of sample before concentrating: 0.5 ml

Acceleration and deceleration: Fast/Fast

2. Result of experiment

(1) 0.01 mg/ml (low concentration sample)

Amount of sample after centrifugation	0.01 ml
Concentration	50 times thicker
Recovery	96%

Before After



(2) 1 mg/ml

Amount of sample after centrifugation	0.05 ml
Concentration	10 times thicker
Recovery	95%

Before After



3. Experiment procedure

- (1) The standard serum was diluted with purified water up to 0.01 mg/ml and 1 mg/ml respectively.
- (2) Millipore's filter "Microcon YM-30" was placed on the top of the 1.5-ml tube and 0.5 ml of the above sample were dropped on the filter.
- (3) The above filter and the 1.5-ml tube were set in T15A38 fixed angle rotor.
- (4) The centrifuge was operated under the following setting conditions: (In case of using outside cavities) 12,000 rpm, (In case of using inside cavities) 13,000 rpm, 12 minutes and 15 degrees C.
- (5) The filter was placed on a new 1.5-ml tube upside down.
- (6) The centrifuge was operated under the following setting conditions: 3,500 rpm, 3 minutes and 15 degrees C.

* Refer to the instruction manual attached to Millipore's "Microcon YM-30" for detail.

* Millipore's centrifugal filter unit "Ultrafree-MC" is also applicable.

4. Specifications of T15A38 fixed angle rotor

Applicable centrifuge	CF16RX/CF15RX versatile compact centrifuge
Maximum speed	15,000 rpm
Maximum RCF	21,600 x g (outside cavities), 18,300 x g (inside cavities)
Tube: Nominal capacity x Number of tubes	2 ml or 1.5 ml x 36
Rmax	8.59 cm (outside cavities), 7.29 cm (inside cavities)
Rmin	6.00 cm (outside cavities), 4.70 cm (inside cavities)
Features	(1) Bio-safety (under testing) (2) Autoclavable at 121 degrees C for 20 minutes (3) Filter tubes are applicable.
Appearance	

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