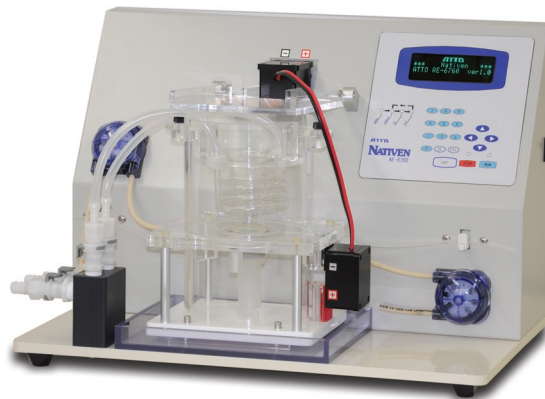


Preparative Electrophoresis System

for proteins / DNA

NATIVEN®



Name	Type
NATIVEN® S	AE-6760S
NATIVEN® L	AE-6760L

01. NATIVEN® features

- High resolution protein separation & collection
- Collect samples automatically by air pumping system
- Concentrate & recover samples without loss
- Various amount samples are able to separate by the use of four column-types
- Easy - to - Use
- Excellent reproducibility

02. Purpose

- ◇ Fractionation of proteins / DNA using SDS-PAGE
- ◇ Fractionation of proteins from Native-PAGE keeping with their activities
- ◇ Concentration of the body fluids (ex. cell-extract, cell culture medium, serum, urine)
- ◇ Purification of antibody epitope
- ◇ Preparation for Mass Spectrometry
- ◇ Screening

etc.

03. What is NATIVEN® ?

Model AE-6760 NATIVEN® is preparative electrophoresis system of proteins or nucleic acids based on the polyacrylamide disc-gel electrophoresis.

In this system, preparative electrophoresis is accomplished by repeating the following 4 steps; separating, pausing, collecting and refilling. Samples are separated by electrophoresis through a disc-gel and eluted into collection part. The collection part is placed between the NATIVEN® upper and lower gel, and filled with collection buffer. The eluted proteins or nucleic acids in the collection part are collected by air pumping system and fractionated into fraction collector.

By introducing air pumping system, NATIVEN® can collect samples without excess amount of collection buffer, and minimize dilution and contamination. In addition, NATIVEN® is available to concentrate the components that include the body fluid of weak concentration.

NATIVEN® can provide a novel way to preparative electrophoresis useful for various academic field!

50 years with
Electrophoresis

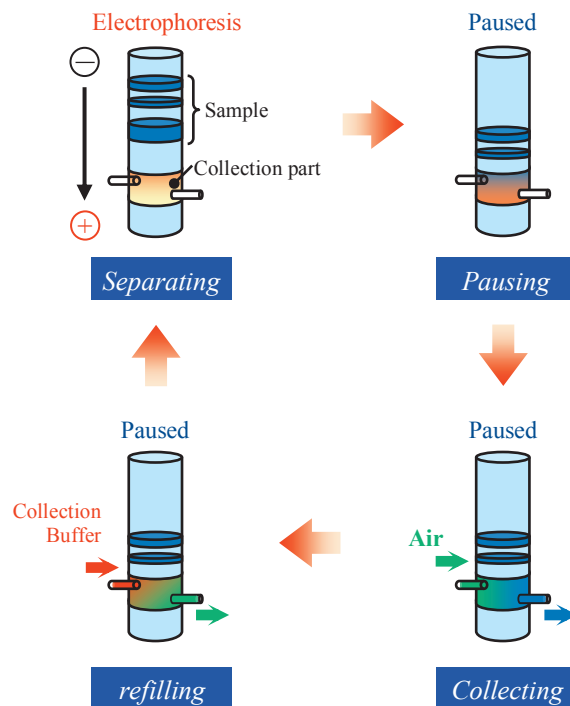


04. Principle of NATIVEN[®]

NATIVEN[®] carries out the preparative electrophoresis by the repeating of 4 processes; separating, pausing, collecting and refilling.

NATIVEN[®] gel column is made by polyacrylamide disc-gel. It's separated 3 parts; upper gel, collection part and lower gel. The collection part is filled with the collection buffer.

The samples is applied to the upper gel and separated by electrophoresis. In the separating phase, the protein bands are eluted into the collection part. Then, the electrophoresis paused (pausing phase). Keeping the pause, eluted bands are pushed by air to fraction collector (collecting phase). After the collecting, the collection part is sequentially refilled with a new collection buffer.



05. Procedure for using NATIVEN[®]



1. Sample Preparation

- Samples are available to have been completely solved in sample buffer of PAGE
- It's recommended that you pre-purify your samples removing inhibitors of electrophoresis



2. Test PAGE of samples

- It's recommended very highly that you check your samples using slab-gel electrophoresis (Test PAGE)
- The data from Test PAGE are available to set the NATIVEN[®] program



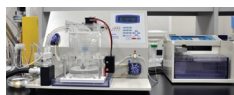
3. Assembly of NATIVEN[®]

- At first, you have to assemble the NATIVEN[®] gel column
- Next, you should assemble the NATIVEN[®] main body, accessories and options



4. Select & Input programs to set experimental condition

- 4 parameters need to input in the NATIVEN[®] program
- These parameters highly affect the outcome of preparative electrophoresis

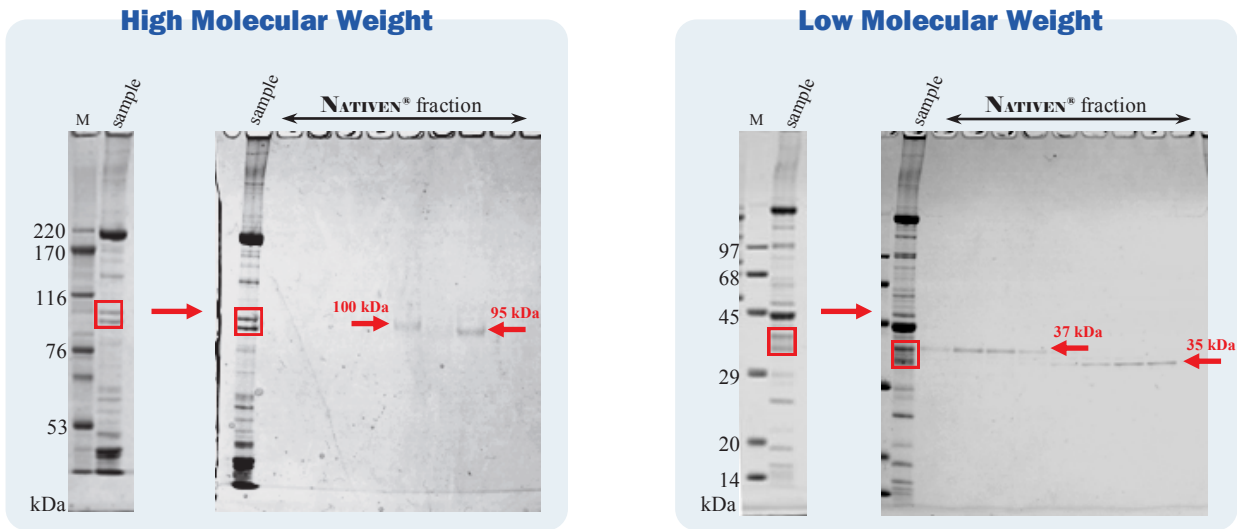


5. Preparative electrophoresis using NATIVEN[®]

- After NATIVEN[®] running, the preparative electrophoresis processes automatically
- It's possible to pause & readjust the program if you have trouble in preparative electrophoresis

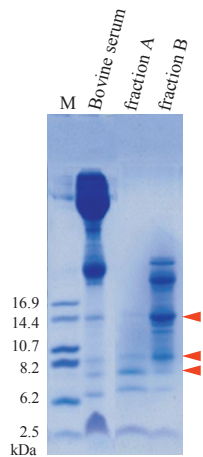
06. Data

A. High resolution protein separation



The target proteins were isolated with a high degree of accuracy & recover in each conditions.

B. Concentrate & recover samples without loss



In preparative electrophoresis of **NATIVEN***, it's available to concentrate the focused proteins from the samples of weak concentration.

The left figure shows the concentration of same proteins including bovine serum.

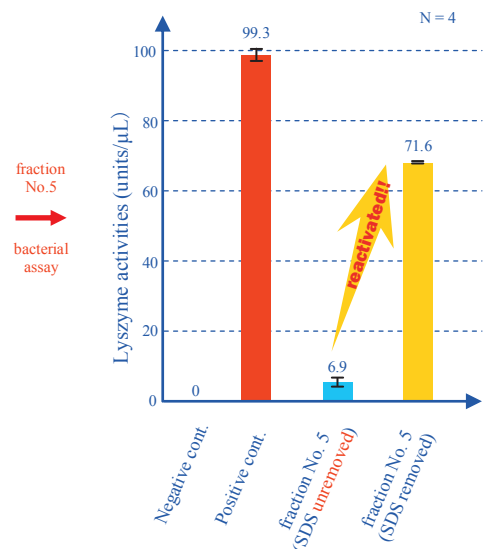
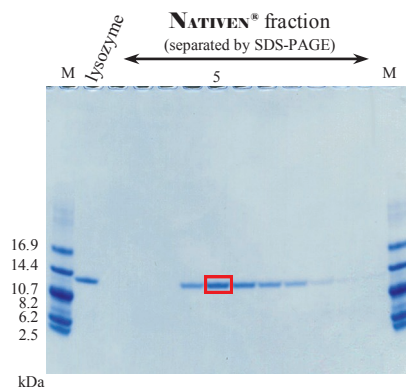
▶ bands are more concentrated than the before-separation (bovine serum).

C. Detection of enzyme activities following SDS-PAGE separation

SDS-PAGE separation has good resolution of samples, but the isolated proteins activity are lost after that.

Some proteins, not of all, are possible to recover the activities by SDS removing after SDS-PAGE separation.

Following data shows the recovery of enzyme activities following SDS-PAGE separation using lysozyme.



07. Past records of NATIVEN[®]

	Low molecular weight	Middle molecular weight	High molecular weight
Average molecular weight (kDa)	12.60 (3 - 20)	51.20 (20 - 100)	158.90 (100 - 230)
Average of NATIVEN [®] upper gel length (mm)	33.57 (25 - 35)	28.28 (25 - 40)	24.47 (20 - 40)
Average of NATIVEN [®] upper gel concentration (%)	16.40 (12.5 - 20)	10.35 (7.5 - 12.5)	7.13 (5 - 7.5)
Number of examples	29	90	20
Success rate of separation (%)	79.31	83.33	95.00

Various size protein or DNA can be separated with SDS/Native electrophoresis by NATIVEN[®].
26 out of 36 experiments are successful in collecting protein samples with their activities conserved.

08. Specification

	NATIVEN [®] S	NATIVEN [®] L
Type	AE-6760S	AE-6760L
Max sample volume	Sample Max. : 0.5 mg / Apply Max. : 0.5 mL (straight) Sample Max. : 5.0 mg / Apply Max. : 1.0 mL (funnel)	Sample Max. : 2.0 mg / Apply Max. : 2.0 mL (straight) Sample Max. : 50.0 mg / Apply Max. : 4.0 mL (funnel)
Collection buffer volume	0.15 mL	1.0 mL
Gel concentration	Polyacrylamide gel / 5 ~ 15 % (uniform)	
Gel sectional area	50 mm ² (straight) 200 mm ² (funnel, upper surface area)	200 mm ² (straight) 1000 mm ² (funnel, upper surface area)
Column diameter	8 mm (straight) 17 mm (funnel, upper) ~ 8 mm (funnel, lower)	16 mm (straight) 37 mm (funnel, upper) ~ 16 mm (funnel, lower)
Column Height	80 mm	
Buffer volume of the chambers	Upper : 240 mL Lower : 100 ~ 300 mL	Upper : 500 mL Lower : 100 ~ 300 mL
Collection Method	Collection by air pump system (ON / OFF)	
Separating Time	1 ~ 99 min. setting in 1 minute steps	
Output of fraction collector	MAKE Switch/ open-collector 400 ms (Step signal)	
Power out put	Constant current : 1 ~ 40 mA (15 steps) error detector equipped (open / short)	
Display	LCD & LED indicator 20 character x 4 lines	
Program parameter	Up to programs (composed of the following A. ~ F. conditions) available to set and save A. Constant Current : 1 ~ 40 mA (15 steps) D. Collection time : 1 ~ 255 sec. B. Delay time : 1 ~ 999 min. E. Refill time : 1 ~ 255 sec. C. Run time : 1 ~ 99 min. F. Max fraction : 1 ~ 999	
Operating temperature	5 ~ 65°C	
Power outlets	AC 100 ~ 230 V 50 Hz / 60 Hz 45VA	
Dimensions	400 mm (W) × 250 mm (D) × 200 mm (H) approx. 2kg	

09. List of related Products

Category	Name	Type
Fraction Collector	MicroCollector	AC-5700P
	BioCollector	AC-5700
Buffer Circulator	SuperStat Mini PID	AE-1650

For more information, please contact us:



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