TOMY

Beads Cell Disrupter / Micro Homogenizing System

Micro Smash™ MS-100



New!
5ml Tube Holder
(optional)

Application

- Disruption and emulsion of a wide range of organisms inculuding bacteria, animal and plant tissues, yeasts, algae, and fungi
- Disruption and emulsion of environmental samples such as soil and paint

Key Features

1. Patent applying "3D Rotating High Speed Motion"* for quick disruption of those fibrous tissues and resistant cells
2. Five patterned memory settings and user optional condition settings
3. A wide renge of rotation speed settings from 2,000 to 5,500 rpm
4. Brushless motor realizing no brush particle generation and no brush replacement
5. Easy to remove sample tube holder
6. Easy to fix sample tubes with the turn of the central knob
7. Easy to monitor the disruption process through the clear lid
8. Economical and compact tabletop system, accommodating up to 2.0ml×12 tubes
9. Processing up to 6×5ml tube with an additional tube holder (optional)

"3D Rotating High Speed Motion" is a high-speed movement which vertically rotates and moves the sample tubes in a "figure-eight" motion. This motion allows beads to impact the cells more directly for effective disruption.



Specifications	Model No.	MS-100
	Speed Setting Range	2,000 to 5,500rpm/100rpm increment
	Disruption Method	Microprocessor controlled "3D Rotating High Speed Motion" (patent applying)
	Drive Motor	Brushless, induction drive motor
	Timer Setting Range	1 to 300 seconds or 1 to 100 seconds more then 5,100rpm
	Display	LCD digital display with backlight
	Capacity	2.0ml×12tubes
	Safety Devices	Lid Opening Detector, Motor Overheat Detector and Rotor Malfunction Detector
	Dimensions/Net weight	280W×320D×305Hmm/Approx.17kg
	Power Required	AC120V, 3A, 50/60Hz, 1P AC220V/230V/240V, 2A, 50/60Hz, 1P
	Accessories Included	ϕ0.1/ϕ0.5/ϕ1.0 Glass Beads and ϕ2.0 Zirconia Beads, approx. 30g each and 2.0ml×20 sample tubes

Digital Biology®

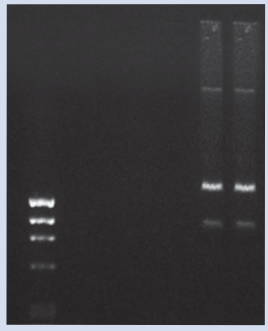
Application Examples 1 DNA extraction from yeast cells; S. pombe
Proteinase K Method vs Beads Cell Disrupter MS-100

Methods

(1) In preparation for examination, yeasts collected from the culture broth at an OD660 of 0.20 were mixed with buffer.
(2) Perform following three methods for cell disruption, two processes each;
   a. Processed without beads (as a negative control)
   b. Processed with the Proteinase K Method
   c. Processed with MS-100, using 1mm glass beads at 3,000rpm for 5 minutes
(3) After disruption, each sample was phenol extracted, ethanol precipitated and electrophoresed on a 1% agarose gel.

Genomic DNA and RNA, which were hardly extracted by using Proteinase K method, could be successfully obtained with MS-100.

Results



Lane 1: Marker
Lane 2: Intact
Lane 3: Intact
Lane 4: Proteinase K
Lane 5: Proteinase K
Lane 6: MS-100
Lane 7: MS-100

Application Examples 2 RNA extraction from rice (Oryza sativa L.) leaves (fresh leaves)
Using a commercially available DNA extraction kit to obtain RNA

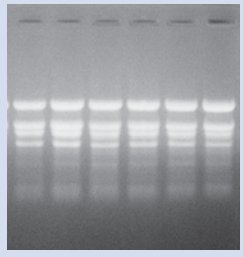
Beads and Disruption Conditions

①ϕ4.8 stainless steel beads × 2 at 3,500rpm for 90 sec × 2
②ϕ5.5 stainless steel beads × 1 at 3,500rpm for 90 sec × 2
③ϕ3.2 stainless steel beads × 10 at 3,500rpm for 120 sec
④ϕ4.8 stainless steel beads × 2 at 4,000rpm for 120 sec
⑤ϕ5.5 stainless steel beads × 1 at 4,000rpm for 120 sec
⑥ϕ5 zirconium beads × 1 at 4,300rpm for 100 sec

Methods

(1) Add 450μl of Buffer to a 2ml tube containing a specified amount of beads.
(2) Put 80 to 90mg rice leaves into the tube.
(3) Disrupt the sample using the TOMY Beads Cell Disrupter MS-100.
(4) Perform extraction and purification according to the procedure given to the kit.
(5) After measuring A260 value of the recovered RNA solution, 5μg of total RNA of each sample was subjected to electrophoresis through a 1.2% denatured agarose gel.

Results



Conditions	RNA yields	A260/280 ratio
①	69μg	1.80
②	47μg	1.77
③	59μg	1.82
④	73μg	1.80
⑤	46μg	1.81
⑥	45μg	1.78

MS-100 reduces the amount of low molecular weight RNA and allows recovery of high quality RNA.

Beads, Sample Tubes (optional) and Special Order Items

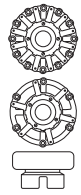
	Model No.	Material	Size	Specific gravity	Quantity
Beads	GB-01	Glass	0.1mm	2.5	450g
	GB-05		0.5mm		〃
	CB-10		1.0mm		〃
	ZSB-01	Zirconia/Silica	0.1mm	3.8	300g
	ZSB-05		0.5mm		〃
	ZSB-10		1.0mm		〃
	ZB-05	Zirconia	0.5mm	6.0	300g
	ZB-10		1.0mm		〃
	ZB-20		2.0mm		〃
	ZB-30		3.0mm		〃
	ZB-50		5.0mm		〃 (Approx.750)
	※ ZB-100		10.0mm		〃 (93)
	SUB-30	Stainless Steel	3.2mm	7.9	200g(1,450)
	SUB-50		4.8mm		〃 (445)
	SUB-55		5.5mm		〃 (280)
	※ SUB-63		6.3mm		〃 (188)
	※ SUB-80		7.9mm		〃 (95)
	※ SUB-95		9.5mm		〃 (56)

●Items marked* are available exclusively for 5ml tubes.

	Model No.	Material	Capacity	Figure	Quantity
Tube	TM-625 TM-625S Sterilized	PP	2.0ml		500
	TM-626 TM-626S Sterilized	PP	2.0ml		〃
	72692 72692S Sterilized	PP	1.5ml		〃
	TM-655 TM-655S Sterilized	PP cap PE	5.0ml		300

Special Order Items

1) 12×2ml tube holder with loop cap P-00102
2) 6×5ml tube holder P-00103
3) Auxiliary tool for fastening the central knob (power knob) P-00110



Sales Office:
TOMY DIGITAL BIOLOGY CO., LTD.

3-14-17 Tagara, Nerima-ku, Tokyo 179-0073, Japan
e-mail: info@digital-biology.co.jp
URL: http://www.digital-biology.co.jp
phone: +81-3-5971-8160 fax: +81-3-3970-6036

TOMY SEIKO CO., LTD.

All TOMY products have a limited one-year warranty.
Specifications are subject to change according to product advancement.
Tomy and Digital Biology is registered trademark of Tomy Seiko Co., Ltd. and Tomy Digital Biology Co., Ltd. Copyright 2002, Tomy Seiko and its subsidiaries. Printed in Japan.

3K0420④A