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Cobetter Filtration

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Bacterial Recovery Test Report of Cobetter MCE Grid Membrane

1、 Experimental Purpose

Analyze the bacterial recovery of Cobetter MCE Grid Membranes.

2、 Experimental Purpose

ISO 7704

3、 Experimental materials and reagents

3.1 Experimental materials

No.	Sample Name	Item No.	Qty.	Specification
1	MCE Grid	YQJ4	10pcs	Φ47mm 0.45μm
2	Membrane	YQD5	10pcs	Φ47mm 0.45μm
3		YQS7	10pcs	Φ47mm 0.45μm

3.2 Experimental reagents

E. coli ATCC8739, Pseudomonas Aeruginosa ATCC9027, Tryptose Soya Agar Medium, 0.9% Sodium Chloride Aqueous Solution.

4、 Experimental instruments, devices and utensils

4.1 Instruments

Microbial limit detector, High-pressure steam sterilizer, Biological safety cabinet, Incubator

4.2 Devices and Utensils

F50 filter cup, Plate, Pipette, etc.

5、 Evaluation reference standard

Restorative requirements

Item	Requirement
ATCC® 8739	Recover $\geq 80\%$ versus spread plate
ATCC® 9027	Recover $\geq 80\%$ versus spread plate

6、 Experimental methods

6.1 Test process

Dilute *E. coli* ATCC8739 and *Pseudomonas aeruginosa* ATCC9027 to a suitable concentration, around 1000CFU/mL, take about 100uL of this diluted solution (<100cfu), mix well with 20mL sterile diluent (0.9% saline or 0.1% peptone water). Use the Microbial Limit Detector to filter with a grille membrane, and then rinse the filter cup twice with 20mL ~ 30mL sterile diluent and then filter. Immediately after the last rinse, turn off the vacuum pump, remove the filter cup, and use tweezers to transfer the membrane to the appropriate agar medium. Take 2 plates for each bacterial species for spread plate counting. All plates are cultured under temperature and time conditions suitable for bacterial growth.

6.2 Analysis

Count the colonies on the membrane surface. If multiple dilution factors are used in the test, ensure that the number of colonies formed by the dilution factor culture used for counting is 25 to 100, and the sum of the number of colonies in each treatment should not be less than 200.

6.3 Calculation

For each bacterial species in the experiment, select at least 5 parallels for counting in each treatment, and calculate the arithmetic mean.

Recovery rate, R, expressed as a percentage. For each species, the expression is as follows:

$$R = Mm / Mc * 100\%$$

Mm: Average value of filter membrane counting; Mc: Average value of plate counting

7、Experimental results

ATCC® 8739 Recovery rate

Membrane Item	Filter Membrane Counting (cfu/piece)						Plate Counting cfu/dish	Recovery Rate %
	parallel	parallel	parallel	parallel	parallel	Average		
	1	2	3	4	5			
YQJ4	91	101	104	105	105	101	102	99.22
YQD5	66	58	67	69	68	66	73	90.48
YQS7	90	92	84	95	73	87	96	90.42

ATCC® 9027 Recovery rate

Membrane Item	Filter Membrane Counting (cfu/piece)						Plate Counting cfu/dish	Recovery Rate %
	parallel	parallel	parallel	parallel	parallel	Average		
	1	2	3	4	5			
YQJ4	74	70	68	76	85	75	80	93.84
YQD5	85	88	70	89	76	82	90	91.17
YQS7	82	73	90	84	99	86	82	104.39

8、Experimental conclusion

Cobetter MCE Grid Membrane have good bacterial recovery, comply with ISO 7704 requirement ($\geq 80\%$ recovery).