

연구 범위 및 방법

0.4um 가 (Fig. 1)

fluorescein fluorescein isothiocyanate conjugated dex - tran

1. 미세혈관 내막세포 배양

(cortical gray matter) 1% (bovine serum albumin) 10cc 0.01M isotonic phosphate buffered saline(PBS) 10% (FBS, fetal bovine serum) 가 MEM(minimal essential media) #10 (mincing), 1mm³ MEM (homogenize). 30% 5800G 10 Pellet 15% MEM 0.1mg/ml collagenase/dispase 가 5 16 37C shaker 1500G

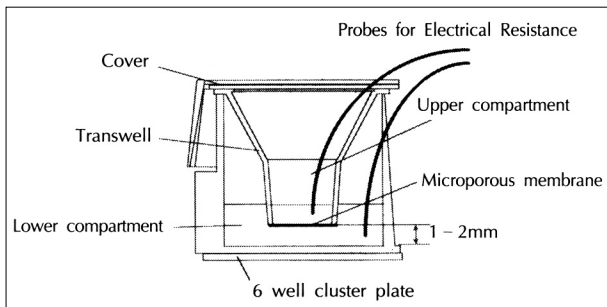


Fig. 1. Schematic illustration of Transwell.

10 DMEM(Dulb - ecco's minimal essential media) 5% , 1500G 10 DMEM/F12 10U/ml heparin, 2.5uM hydrocortisone, 10% FCS, 1% 가 fibronectin (plastic dish) 15ml 37 , 5% CO₂ 2

2. 내막세포 단일층에 의한 모델

10 14 가 PH 7.4 0.01M PBS , 10% dispase가 가 3ml PBS 37C 2 3 1% 가 7ml PBS 가 가 phosphate - buffered saline(PBS, PH 7.2) 200g 10 trypphan blue (porous collagen - coated membr - ane) (Fig. 2) 100,000cells/ml 7 가

3. 성상세포 동시배양 모델

Dehouck⁸⁾ 1 DMEM 80um 20% 가 DMEM , 7 DMEM 10% , 7 10 가 PH7.4 0.01M PBS , 10% dispase가 가 3ml PBS 37C 2 3 1% 가 7ml PBS 가 가 PBS 200g 10

1.2×10^{-4} , $0.8 \times 10^{-4} \text{cm} \cdot \text{min}^{-1}$,
 가 $23 \times 10^{-4} \text{cm} \cdot \text{min}^{-1}$
 18.65×10^{-4} ,
 1.95×10^{-4} , 1.27×10^{-4} , $0.83 \times 10^{-4} \text{cm} \cdot \text{min}^{-1}$
 (Fig. 3).

3. 미세혈관 내막세포 단일층을 성상세포와 이중배양관에서 동시 배양

373, 4400, 9300 38900
 6.4×10^{-4} , 0.97×10^{-4} , 0.64×10^{-4} , 0.55
 $\times 10^{-4} \text{cm} \cdot \text{min}^{-1}$, 가 23×10^{-4}
 $\text{cm} \cdot \text{min}^{-1}$
 8.87×10^{-4} , 1.01×10^{-4} , 0.66×10^{-4} ,
 $0.56 \times 10^{-4} \text{cm} \cdot \text{min}^{-1}$ (Fig. 4).

4. 미세혈관 내막세포 단일층을 양성 성상세포종과 동시 배양

C6(rat glial cell tumor) Hs 683 (human glioma)
 373, 4400, 9300 38900
 8.8×10^{-4} , 1.6×10^{-4} , 0.97×10^{-4} ,
 $0.50 \times 10^{-4} \text{cm} \cdot \text{min}^{-1}$, 가 $23 \times$
 $10^{-4} \text{cm} \cdot \text{min}^{-1}$
 14.3×10^{-4} , 1.7×10^{-4} , $1.01 \times$
 10^{-4} , $0.51 \times 10^{-4} \text{cm} \cdot \text{min}^{-1}$ (Fig. 5).

5. 면역염색 및 직접촬영

Anti - Factor VIII antigen antibody
 GFAP
 (Fig. 6).

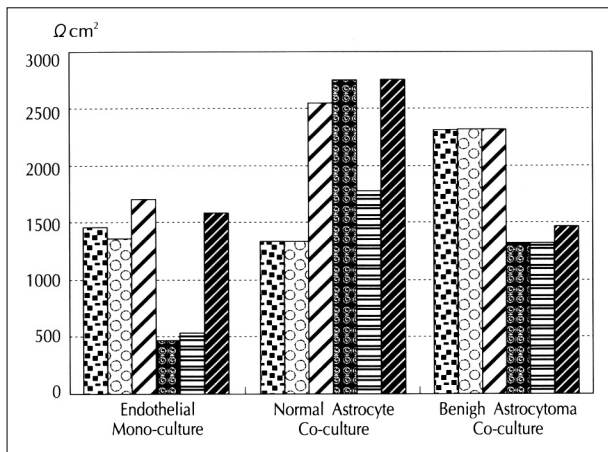


Fig. 2. Graph showing the transendothelial electrical resistance of three models.

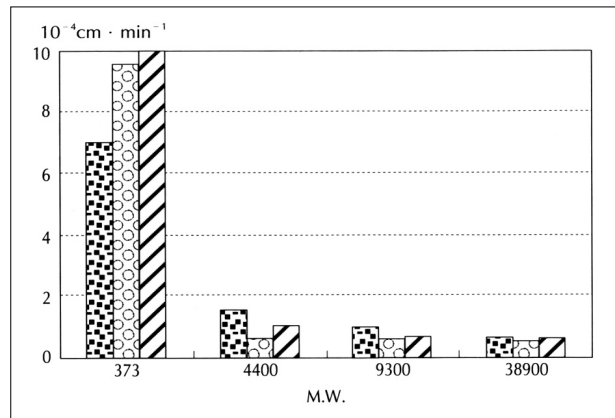


Fig. 4. Graph showing permeability ratio of endothelial monolayer in the astrocyte co-culture system for various molecular weight of fluorescein sodium and fluorescein isothiocyanate conjugated dextran.

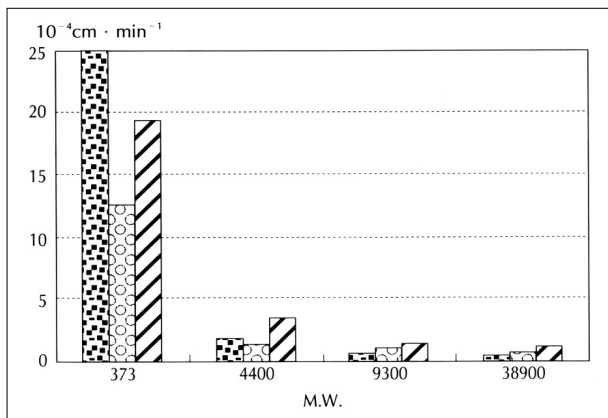


Fig. 3. Graph showing permeability ratio of endothelial monolayer in endothelial mono-culture system for various molecular weight of fluorescein sodium and fluorescein isothiocyanate conjugated dextran.

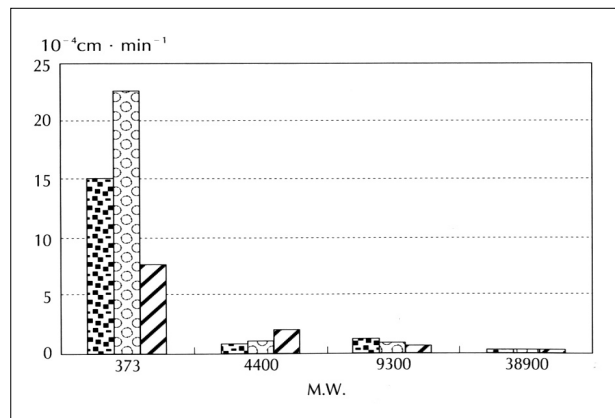


Fig. 5. Graph showing permeability ratio of endothelial monolayer in the benign astrocyte co-culture system for various molecular weight of fluorescein sodium and fluorescein isothiocyanate conjugated dextran.

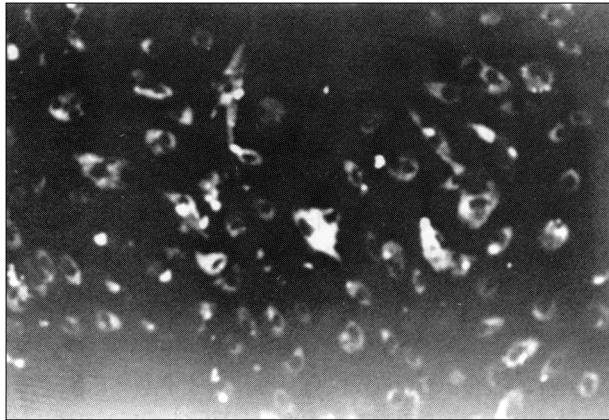


Fig. 6. Photomicrograph of cultured endothelial cells stained using indirect immuno-fluorescence with anti-Factor VIII antigen antibody (x 200).

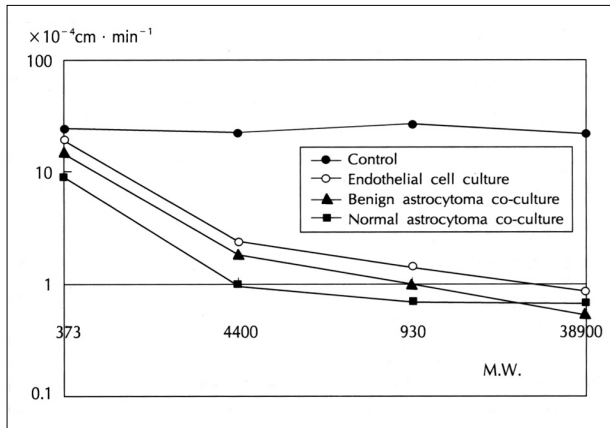


Fig. 7. Graph showing permeability ratios according to various molecular weight of fluorescein sodium and fluorescein isothiocyanate conjugated dextran in each model. Astrocyte and endothelial monolayer co-culture shows the lowest permeability ratio among all three models.

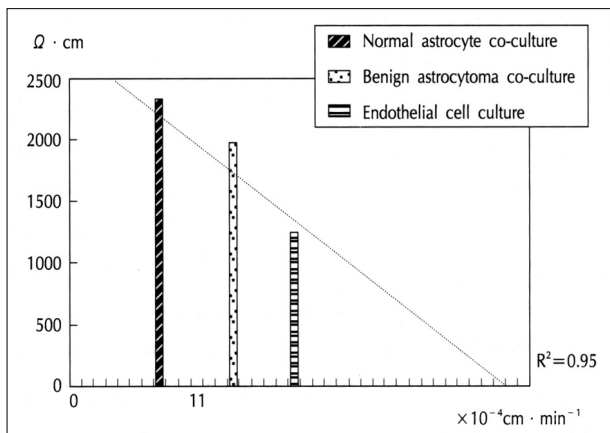


Fig. 8. Graph showing the inversed correlation between trans-endothelial resistance and permeability ratio of the lowest molecular weight fluorescein sodium (MW=373) in each model.

cobble stone
 가
 고 찰
 가 가
 Bowman²⁾
 , Killackey¹⁵⁾ hist-
 amin, bradykinin, serotonin
 , Villacara³⁷⁾ arachdonic acid
 가 가
 Trautmann³⁶⁾ NO endothelin - 1
 , Stanimirovic³²⁾
 protein kinase C가
 , Nagashima¹⁹⁾ leukotriene C4
 가
 DeBault
 Cancilla⁷⁾가
 -gluta -
 myl transpeptidase(GGTP)
 ,
 Stewart Wi -
 , Patridge²²⁾
 가 ,
 trophic factor가
 가
 1) 가 , Arthur³⁵⁾
 , Tao - Cheng³⁵⁾
 가
 Rubin²⁶⁾ C - AMP
 가
 Wolburg³⁹⁾
 가 C - AMP
 Dehouck⁸⁾

stone apperance)

18)

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가
가 .

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References

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