

(19) (KR)  
(12) (B1)

(51) 。 Int. Cl.<sup>7</sup>  
A61K 35/78

(45)  
(11)  
(24)

2004 07 19  
10-0440863  
2004 07 08

(21) 10-2001-0028743  
(22) 2001 05 24

(65)  
(43)

10-2002-0089817  
2002 11 30

(73) 150

(72) 2 105 405

464-1 401 1104

103 1607

가 1 174-6

112 904

(74)  
:

(54)

詞子) (side effect) , , , 가 (

**1**  
 1 : , 2 : (HIM-2),  
 3 : , 4 : ,  
 5 : , 6 : ,  
 7 : HIM-1 ( , , , 가 ),  
 8 : -1( , , , 가 ),  
 9 : -2( , , , )

**2**  
 1 : , 2 : (HIM-2),  
 3 : , 4 : ,  
 5 : , 6 : ,  
 7 : HIM-1

**3**  
 A : , B : 4 Gy ,  
 C : 8 Gy

**4**  
 1 : , 2 : (HIM-2), 3 : HIM-1,  
 4 : , 5 : , 6 :

**5**  
 1 : + , 2 : + ,  
 3 : + (HIM-2), 4 : + HIM-1,  
 5 : + , 6 : + ,  
 7 : +  
 : , :

**6**  
 :  
 : (HIM-2)  
**7** (12 Gy)

**8** (6.5 Gy)  
 1 : , 2 : (HIM-2), 3 : ,  
 4 : , 5 : , 6 : ,  
 7 : , 8 : , 9 : ,  
 10 : , 11 : , 12 : HIM-1,  
 13 : -1( , , , 가 ),  
 14 : -2( , , , )

**9** (4 Gy)  
 1 : , 2 : (HIM-2), 3 : ,  
 4 : , 5 : , 6 : ,  
 7 : , 8 : , 9 : ,  
 10 : , 11 : , 12 : HIM-1,  
 13 : -1( , , , 가 ),  
 14 : -2( , , , )

**10** (4 Gy) (HIM-2)

**11** (2 Gy) (HIM-2)

(apoptosis) (

**12**  
 1 : , 2 : (HIM-2), 3 : ,  
 4 : , 5 : , 6 : ,  
 7 : , 8 : , 9 : ,  
 10 : , 11 : , 12 : HIM-1,  
 13 : -1( , , , 가 ),  
 14 : -2( , , , )

詞子) , , , 가 (

, , 가 (stem cells)

가 (stromal cells)

)가 (bone marrow) (fibronectin) (extracellular matrix)

가 (cytokines) 가

가 (pathogen) (vaccination) 가

가 가

) 1 2 가 (100 300 Gy) (10 30 Gy) (4 8 Gy) (1 2 Gy) 가

가 1949 (thiol) 가

) WR(Walter Reed;

sphate), gualin) (dipyridamole), (adenosine monophosphate) (deoxyribose)

TNF), 가 -1(interleukin-1) (granulocyte colony-stimulating factor, GM-CSF) (tumor necrosis factor, TNF)

가 가 1988

가 가 가

가

2000-23772 ). 가 3 1.5

가 (訶子)

가 (訶子)

가 (訶子)

가 (訶子)

3 가

가 (訶子)

4 가

- 1) 가
- 2) 1 가 가 ;
- 3) 2 가 5 20 가 10 가

가 10-35 : 10-35 : 10-35 : 10-35

2 , 3 3 가

3

(bone marrow)  
(fibronectin)

(extracellular matrix)

(sheep red blood cell, SRBC)

on), T- 가 (同種異系, allogeneic) 가 (Graft versus Host Reacti

pt)  
optosis)

가

(intestinal cry  
(ap

가

가

가 가

가

(Lactose), (Calcium carbonate), (Sucrose)

가 (Propylene glycol), 가

가 (witepsol), (tween

) 61, 5 300 mg/kg, 10 150 mg/kg, 1

3 2 g/kg

50% (LD<sub>50</sub>) 0.4 g/kg

< 1> 가 (訶子) 10

가 (訶子) 4가

가 3 3

10~100 mg/ml

< 1> (Millipore membrane, 0.45 μm)

<1-1> ( , bone marrow stem cells) 가

(C57BL/6 mouse) 가 22 ± 2 , 가 55 ~ 60%

12

(stromal cells) / (nonadherent cells) 가

가

가

( 1 ).

<1-2> (Bone marrow stromal cells) 가

<1-1> 24

1/2 가 2 ~ 3

( 2 ).

<1-3>

가

0% 8 Gy 가 1.5 가 7% 가 가 . 5

가 1.7 가 가 , 4 Gy 가 2  
 10% 가 가 ( 3 ).

< 2 >  
 <2-1>

(Sheep Red Blood Cell, SRBC)

(C57BL/6 mouse) <1-1>  
 (Hemolytic plaque forming cell assay)  
 (25 g) 0.25 Mℓ (SRBC) 2 ; 10<sup>8</sup>  
 2 (7 ; 10<sup>5</sup> / 0.1 Mℓ), 20% (SRBC) 0.  
 1 Mℓ 0.5% 가 (agarose) 1.6 Mℓ (dish) (pour) 2  
 (CO<sub>2</sub> -incubator) (GPC,1/70) 가 2  
 (plaque forming cells/spleen, PFC/spleen) (plaque)  
 가 가 ( 4 ).

<2-2>

種異系, allogeneic) (immune cells) (同 (Graft versus H  
 ost Reaction, GVH) C57BL/6 DBA/2 BDF1(C57BL/6;DBA/2) C57BL/6 D  
 BA/2 (Graft vs. Host Reaction, GVH) BDF1(C57BL/6;DBA/2)  
 (同種異系, allogeneic) (graft) C57BL/6  
 1 ; 10<sup>7</sup> (0.2 Mℓ) (0.2 Mℓ/ ) .7  
 1 (spleen index)

$$\text{비장지표 (spleen index)} = \frac{\text{동종이계 면역세포 이식 생쥐의 비장무게/몸무게 (allogenic ; spleen weight/body weight)}}{\text{동종동계 면역세포 이식 생쥐의 비장무게/몸무게 (syngenic ; spleen weight/body weight)}}$$

(GVH)

( 5 ).  
 <3-3>

36 12 1 mg  
 (HBSS) 2  
 (Tris-NH<sub>4</sub>Cl ) 가  
 (Trypan blue)  
 3 가 가 ( 6 ).

< 3 >  
 <3-1>

(Intestinal crypt survival) 가 12 Gy  
 1 mg 36 12  
 2 3.5 8 10

가 8 가  
 , 34.4 가 , 157.3 , 21.3 ,  
 ( 7 ). (p<0.05) 가  
 <3-2>

가 (Endogenous spleen colony formation)  
 가 가 가  
 , 6.5 Gy  
 1 mg 36 12  
 8 9 2 , , 9  
 (Bouin) 가  
 , 10.13 , 2.67 ,  
 (p<0.05) 가 ( 8 ).  
 <3-3>

가 가  
 , 4 Gy 5  
 1 mg 36 12 2  
 , 3 , 1 , 2 , 3 , 5 , 7 100 μl  
 가 가 (Hemavet 850+)  
 , 1 2 3 62% 3 13%  
 2 7  
 3 85% 2  
 7 ( 9 ). 2  
 56% 가 7 ,  
 ( 10 ).

<3-4> (自死) (細胞自死, apoptosis)  
 가 (intestinal crypt cells) (自死)  
 36 12 4 1mg  
 30 2 . 2 Gy 6 8 ~ 10  
 (Carnoy's)  
 (hematoxylin-eosin) DNA (fragments)  
 (自死) ( *in situ* apoptosis detection kit; APOPTAG™, Oncor, Gaithersburg, MD, U.S.A.)  
 DNA ( *in situ* DNA end-labeling ; ISEL) DNA  
 (terminal deoxynucleotidyl transferase) 가 , DNA  
 (digoxigenin-nucleotides) (anti-digo  
 xigenin-peroxidase antibody) (diaminobenzidine ; Sigma Chemical Co.)  
 (peroxidase) 40  
 가 17 (Paneth cell)  
 (base) (自死細胞, apoptotic cell) (Paneth cell) 4 (total)  
 (自死體, apoptotic body)가  
 , 11 0.071 ,  
 2.875 , 2.056 ,  
 0.091 , 3.138 , 2.456

가

< 4>  
(C57BL/6 mouse)

1 10 g/kg 1

2 50% kg 50% 10 g 0.4 g

0.9 g

( : 1.1 g/kg , : 0.5 g/kg )

가

50% (LD<sub>50</sub>) 0.4 g/kg 2 g/kg

fect) (side ef

가

(57)

1.

2.

3.

10-35 , 10-35 , 10-35 가 10-35

4.

10-35 , 10-35 , 10-35 가 10-35

5.

10-35 , 10-35 , 10-35 가 10-35

6.

1) , 가 5 20 가 ;

2) 가 ;

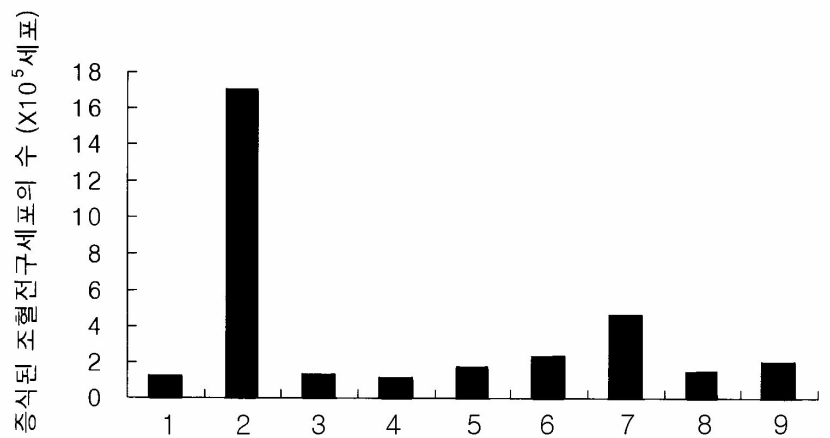
3) 3 5

7.

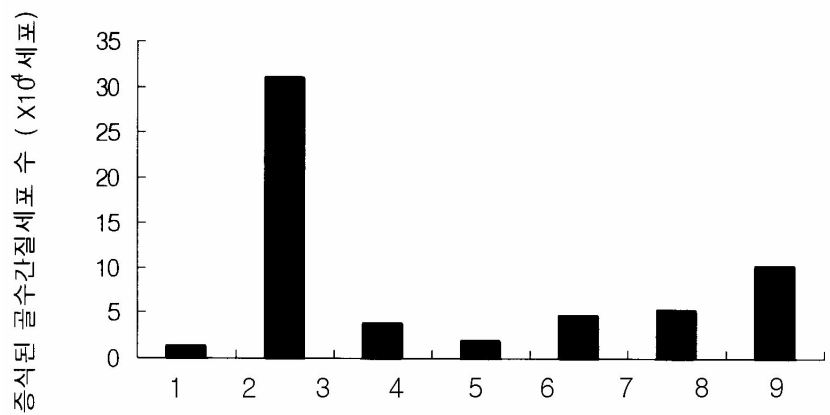
3 5 , , 가



1

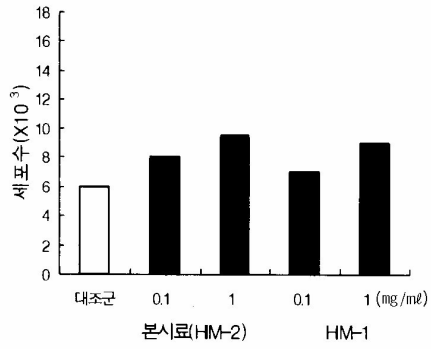


2

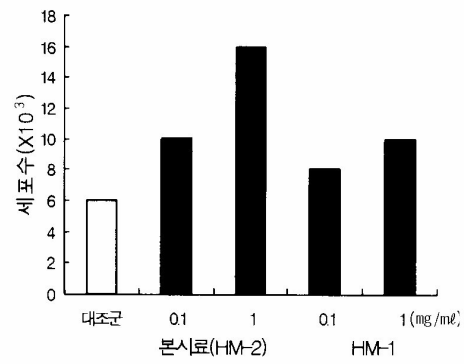


3

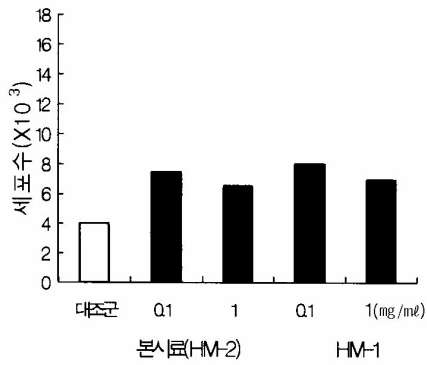
A



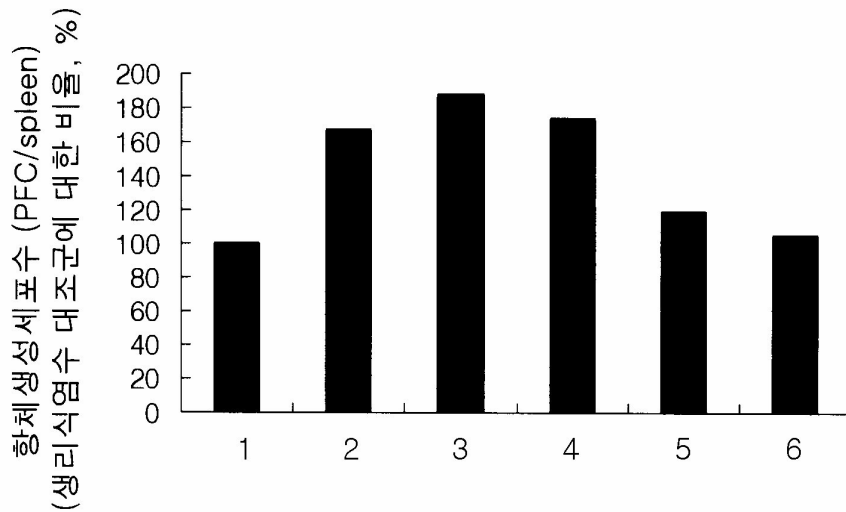
B



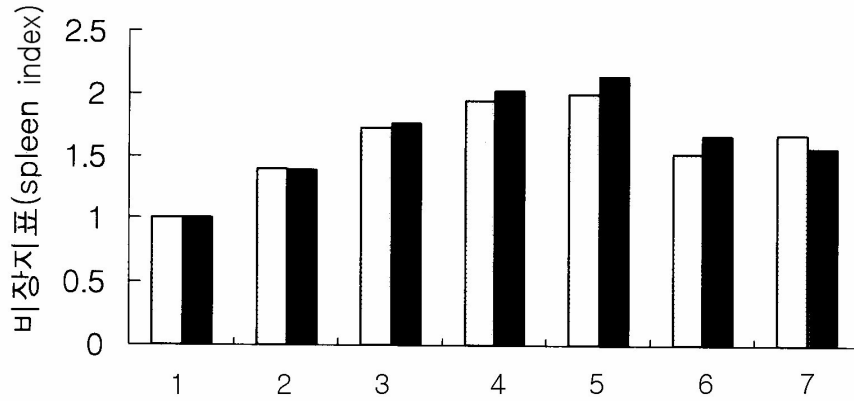
C



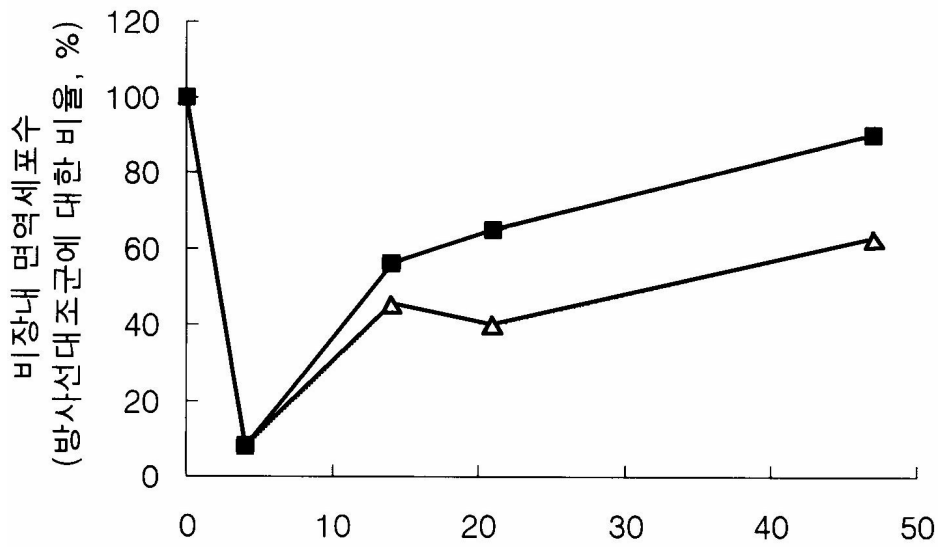
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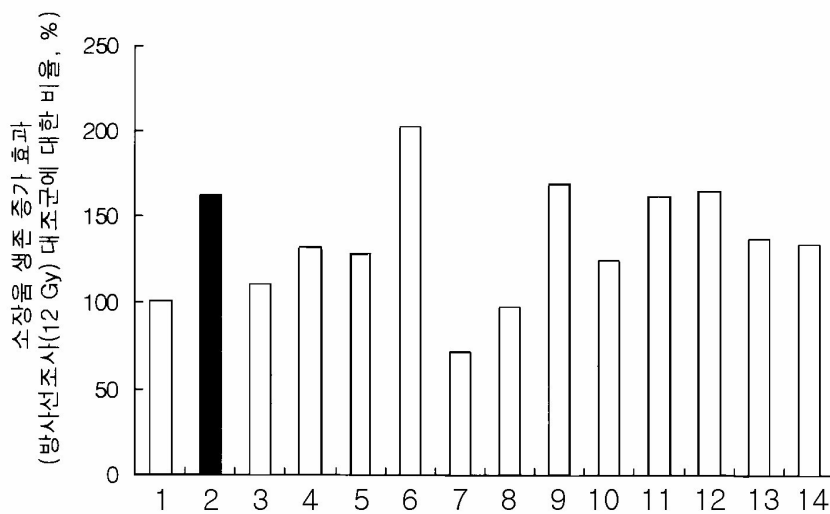
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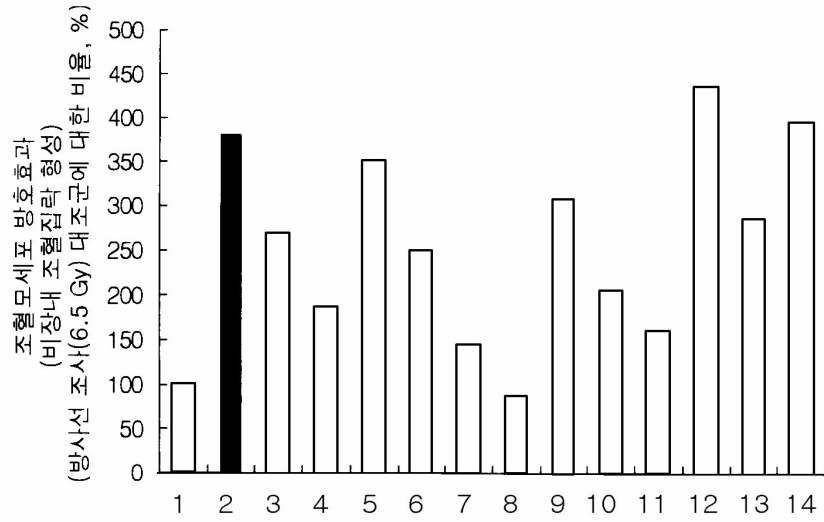
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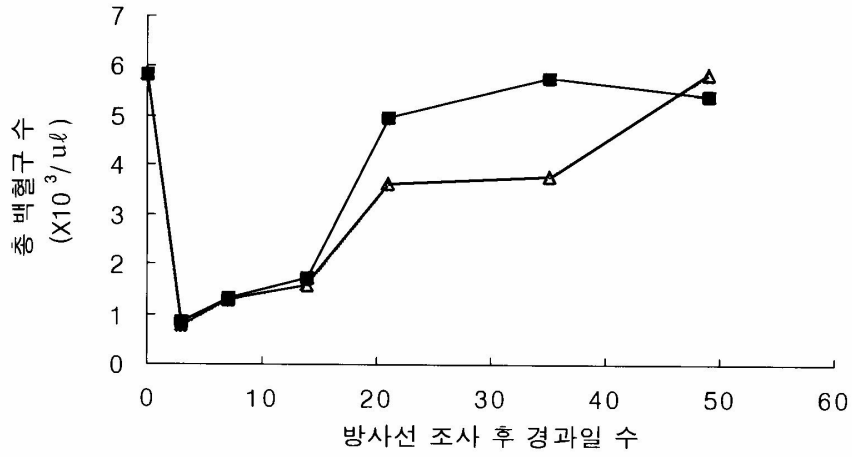
7



8



9



10

