

30
가

"BDS(biochemical defense system)"
, BDS
) BDS . BDS 가 (,

, GSTPI GSTMI (ras) p53

" (antineoplastons)"
1967 . 1980 4,47
0,970 3- -2,6- (b) , (b)
AS2-1" "AS2-1" 4 : 1
3- -2-6- (b) " 가
, 4:1 가
가 , 3- -2,6
MDA-MB-231 (cytostatic effect) -2,6
KMCH-1, KYN-1 KIM-1; Nb2
3- -2,6- 가 A10 S180 R-27
, 3- -2,6- S180 , 3- -2,6- R-27 , A
cAMP 가 HBL-100 Ki-1 - V7T, PC3
10 AS2-1 ¹ H-TdR HL-60, C3H 10T1/2 , K562
5- -2- C3H 10T1/2
A10 LD₅₀ 10.33 g/kg/

()

AS2-1 LD₅₀ 2.83g/kg/ 180 가 (Tardieu's) 가

365 가 . 1.11g/kg/

A10 AS2-1 (Ames) - , A10 (rat)

, AS2-1 3- -2,6-

A10 AS2-1

2가 가 2.21g/kg/ A10

(*Drugs Exptl. Clin. Res.* 1986. 12. Suppl. 1, 47-55).

238mg/kg/ AS2-1

160mg/kg/ AS2-1 가 () 3

3- -2,6- , A10 AS2-1

(*Drugs Exptl. Clin. Res.* , 12 Suppl. I, 25-35(1986)) AS2-1 (100mg/

mL,) 0.16g/kg/ , 6 , 2 , 7 , 6

21

L) 0.5 1.3g/kg/ AS2-1(100mg/mL) 67 706 A10(100mg/m

(, Adam, D., ed. Munich : Futuramed, 1992). 20 0.2 0.5g/kg/ , 4

(Samid) 5,605,930 , 10 , 4 , 0.3

g/kg/

(*Drugs Exptl. Clin. Res.* , 12 Suppl. 1, 11-16(1986)) AS2-1

5.0mg/mL HBL-100 Ki NO.1 , 3-

-2,6- 2.0mg/mL AS2-1 3.0mg/mL MDA-MB-231

가 , 3- -2,6-

0.2mg/mL , 1

0 AS2-1 , 7 , 3- 0.43mg

/mL , 가 AS2-1

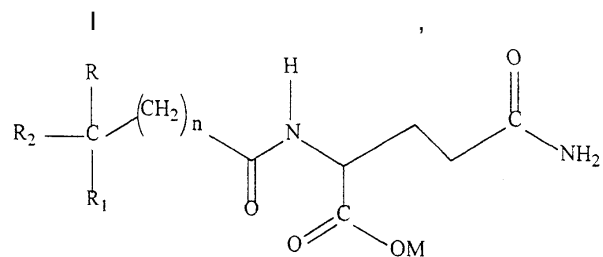
2,6- 가 가 0 가

가 가 ,

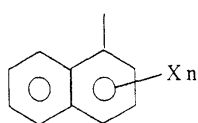
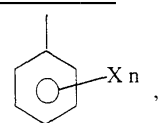
, 3- 가 -2,6- 가 2.5mL/h 84mL/h

가

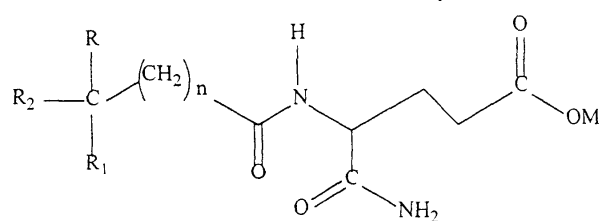
4:1



R_1 , R_2 , H , (C_{1-6}) , (C_{1-6}) ; R
 (C_{6-12}) ; M , $500kD$, (C_{1-6}) ,
 (C_{6-12}) ; n , 0 , 5 , M , (C_{1-6}) ,
 (C_{6-12}) ; R_1 , H , CH_3 , CH_3-O- , C_2H_5 , C_3H_7
 $; R_2$

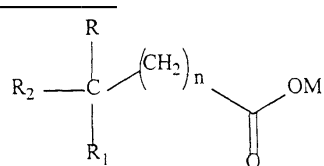


X , (C_{1-6}) , (C_{1-6}) , (C_{6-12}) ,
 n , 0 , 1 , 2 , 3 , 4 , R_2 , R_2
 X , Cl , F , OH , $가$



R_1 , R_2 , H , (C_{1-6}) , (C_{1-6}) ; R
 (C_{6-12}) ; M , $500kD$, (C_{1-6}) ,
 (C_{6-12}) ; n , 0 , 5 , M , (C_{1-6}) ,
 $; R_1$, H , CH_3 , CH_3-O- , C_2H_5 , C_3H_7
 $; R_2$, (C_{6-12}) , X
 (C_{1-6}) , (C_{1-6}) , (C_{6-12}) ,
 n , 0 , 1 , 2 , 3 , 4 , R_2 , R_2
 X , Cl , F , OH , $가$

$2.5mL/h$, $400mL/h$, $200mg/mL$, $350mg/mL$,
 $100mL/h$, $400mL/h$



R_1 , R_2 , H , (C_{1-6}) , (C_{1-6}) ; R
 (C_{6-12}) ; M , $500kD$, (C_{1-6}) ,
 (C_{6-12}) ; n , 0 , 5 , M , (C_{1-6}) ,
 $; R_1$, H , CH_3 , CH_3-O- , C_2H_5 , C_3H_7
 $; R_2$, X , (C_{1-6})

(C₁₋₆), , (C₆₋₁₂), , n 0, 1, 2, 3
 4 , F OH , R₂ , X Cl
 , R₂
 , 4:1
 2.5mL/hr 400mL/hr, 100mL/hr 400mL/hr 70mg/mL 150mg/mL
 4:1
 200mg/mL 350mg/mL
 2.5mL/hr 400mL/hr, 100mL/hr 400mL/hr
 2 A1 ()

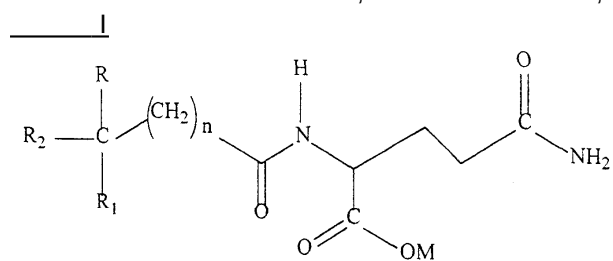
가

가

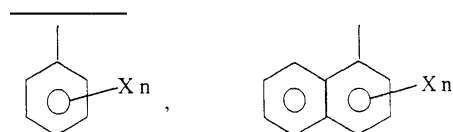
" A10" 4:1
 " AS2-1" "AS2-1" 4:1
 " " 가

가 가

A. _____ :



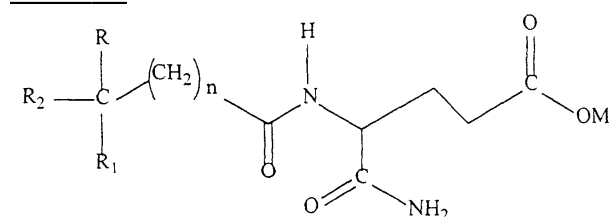
, R R₁ H, (C₁₋₆) (C₁₋₆) ; R
 2 (C₆₋₁₂) ; M , ,
 (C₆₋₁₂) ; n 0 5 , 500kD (C₁₋₆),
 ; R₁ H, CH₃, CH₃-O-, C₂H₅ C₃H₇ ; n 0 ; R H C₃H₇
 ; R₂ (C₆₋₁₂) :



, X , (C₁₋₆), (C₁₋₆), (C₆₋₁₂),
 , n 0, 1, 2, 3 4 , R₂ ,
 , X Cl, F OH , R₂ , R₂

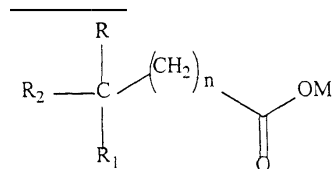
I

4:1 :



* , R R₁ H, (C₁₋₆) (C₁₋₆) ;
 R₂ (C₆₋₁₂) ; M , ,
 (C₆₋₁₂) ; n 0 5 , 500kD (C₁₋₆),
 , M ; n 0 ; R H C₃H

7 ; R₁ H, CH₃, CH₃-O-, C₂H₅ C₃H₇ , X , (C₁₋₆)
 ; R₂ (C₁₋₆), , (C₆₋₁₂), , n 0, 1, 2, 3 X
 4 Cl, F OH , R₂ 가 , R₂ 200mg/mL 350mg/mL .
 , I , 가 300mg/mL . , , :
 , ,



2 , R R₁ H, (C₁₋₆) (C₁₋₆) ; R
 (C₆₋₁₂) ; M , , 500kD (C₁₋₆),
 (C₆₋₁₂) ; n 0 5 , M ; n 0 ; R H C₃H₇
 ; R₁ H, CH₃, CH₃-O-, C₂H₅ C₃H₇ X , (C₁₋₆),
 ; R₂ (C₁₋₆), , (C₆₋₁₂), , n 0, 1, 2, 3 X C
 4 I, F OH , R₂ 가 , R₂ 4:1 , I
 70mg/mL 150mg/mL . , ,

mL/hr 100 400
 300mL/hr 250
 0.1 2.6g/kg/
 250 300mL/hr , 0.2 0.9g/kg/ .
 , , 가 , ,

80mg/mL .

70mg/mL

150mg/mL

4:1

가

80mg/mL .

200 350mg/mL

가

200 350mg/mL

70 150mg/mL

가

가

N,N'-
 L-
 NaHCO₃
 3-

-2,6-

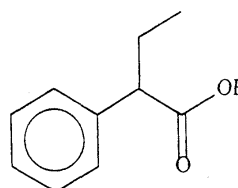
L-

/ =1:1 NaHCO₃

가

m, Sciences, 66:1-19(1977)).

3- , -2,6- : .



I, , HPLC , 가 .

A10 , 4:1 , , 160mg/mL 280mg/mL , 230mg/mL 250mg/mL , 40mg/mL 70 , 55mg/mL 65mg/mL , 7.4, 7.0 , pH pH , I , AS2-1 , 4:1 , 56mg/mL 120mg/mL , 14mg/mL 30mg/mL , 62mg/mL 66mg/mL , 가 , 15mg/mL 17mg/mL .

, pH pH 7.4, 7.0

가 A10 AS2-1

B.

4:1 100 400mL

/hr 200 350mg/mL

A10 2.5mL/h 400mL/

h 100mL/h 400mL/h

250mL/h 100 250mL/h 가

가 A10

A10 A10

A10 24 90 120 A10 4 12 / 6 8 / , 15

(15) (1mL/ 4mL/ (240mL/)), 96

A10 0.6g/kg/ 25g/hg/ A10 A10 8.0g/

kg/ 5.0g/kg/ 12.0g/kg/ A10

/hr 4:1 100 400mL

70 150mg/mL 250 300mL/hr 0.1 2.6g/kg/ 0.2 0.9g/kg/ 250 300mL/hr

AS2-1 AS2-1 2.5 mL/ 400mL/ 100mL/ 400mL/ 100 250mL/h

가 250mL/h

가 2 AS2-1

가

AS2-1

AS2-1 24 0 120 AS2-1 4 12 / 6 8 / , 5 1

(1mL/ 4mL/ (240mL/)), 96 (15)

AS2-1 0.1g/kg/ 2.6g/kg/ AS2- 0.

1 0.2g/kg/ 0.9g/kg/ A10

4g/kg/

1
1
mL , 1
100 400mL/hr
4:1
2
2
70 150mg/mL , 2
100 400mL
/hr ()
0.6 25g/kg/ , 2
250 300mL/hr , 1
0.1 2.6g/kg/ 250 300mL/hr
2 0.2 0.9g/kg/ 5.0 12.0g/kg/ 1 2
70 150mg/ml
100 400mL/hr
250 300mL/hr
0.1 2.6g/kg/
250 300mL/hr
0.2 0.9g/kg/
가
가

1
43
43
가
2 71 , 6
40 100, , 1
가
A10 , 230 250mg/mL pH7.0
AS2-1 62 66mg/mL ,
15 17mg/mL pH7.0
(Broviac, Groshong,)
6000
18 50 100mL/ 91 250mL/
3509
A10 661 7.91g/kg/ , AS2-1 0.39g/kg/ A10
551.865kg 가 가 59.348kg
(6) / 6 4

15						14	가	가	1
	A10	AS2-1	6						AS
2-1	0.20g/kg/	5.27g/kg/	16.06g/kg/				0.37g/kg/		A10
14	311,985kg	0.57g/kg/	AS2-1			9.912kg			
	가	1					2		
			5				5		
	A10	AS2-1	가						
	150mEq/L		8			165mEq/L		3	
	189mEq/L				2.5mEq/L				
						A10	AS2-1		
					가		30%		
5									
가	A10	AS2-1	가			12			9
가	0.24g/kg/	0.40g/kg/	A10		3.5g/kg/	12.1g/kg/		AS2-1	
1					가			3	
5		1			A10	AS2-1			32
			191		A10		3.5g/kg/	12.1g/kg/	61
	0.33g/kg/	7.6g/kg/		AS2-1		0.24g/kg/	0.40g/kg/		
9kg			A10		192,907kg		AS2-1		11.18
12	9	가	1			9		3	
		1				2		3	
	A10	AS2-1	가						
			150mEq/L		8		160mEq/L		2
			111mEq/L		3.1mEq/L		1		
FDA	가	67						가	1,003
					가				
					가				
4							1.7%	(3	
	A10	AS2-1							
			0.3%		4		1.4%	3	
18.6%						SGOT	SGPT		
(%),						(3.3%),	(3.0%),		(2.0
%~0.9%	(1.9%),					(neurocortical)	(1.5%)		0.5
						(neurohearing)			
						(neurocerebellar)	0.5%		
n)		SGPT	가		(fluid retention),			(neurovisio	
topenia),						(leucopenia),		(lymphocy	
	가				SGOT				
	(18.0%),				1			(54.3%),	
(7.1%),		(14.2%),			(9.1%),		(7.8%),	(7.6%),	
	가	(6.8%)			(6.0%)			7.5%	
1									
	1.0%~5.0%								
								(1.0%	
)						SGOT	SGPT		(ep
idermization),								가	

;

4:1

,

70mg/mL 150mg/mL .

2.

1
 $\text{CH}_3, \text{CH}_3-\text{O}-, \text{C}_2\text{H}_5 \quad \text{C}_3\text{H}_7^{\text{M}}$
 $\text{H}, \text{CH}_3, \text{CH}_3-\text{O}-, \text{C}_2\text{H}_5 \quad \text{C}_3\text{H}_7$, M

; n 0 ; R H C₃H₇ ; R₁ H,
 ; R₂ X가 Cl, F, OH
 ; n 0 ; R H C₃H₇ ; R₁
 ; R₂ X가 Cl, F, OH

3.

1 , 가 ,
 가

4.

3 , 80mg/mL .