

\*1) , \*\*2)

1.

가

가

가

가

가 (genome)

,

,

,

,

,

가

50

,

가

2.

6

(Human Genome Project)

가

(genome)

(1)

1982 OECD 「 : (Biotechnology: International

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\*1) (Tel: 02-3284-1832/ e-mail: dhahn@stepi.re.kr)

\*\*2) (Tel: 02-3284-1873/ e-mail: kskwan@stepi.re.kr)

Trends and Perspectives)」

”

“

1996  
on Biotechnology)」

OECD *STI Review* No.19 「

(Special Issue

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가 ”

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(The Biotech Century)”

Jeremy Rifkin

“

”

가

가

(extraction industry)

Bill Gates “

가

(if)

가

가

(how)

가

”

Bill

Gates

Leroy Hood가

Darwin Molecular

가

가

(super animal)

가

(2) (genome)

(genome)  
, , , , , ,  
가 .  
(genome) (gene) (chromosome) 가 가  
DNA 가 “ (genome)  
” 가  
가

(genome)  
“-ics” “genomics”  
가 가  
가 가  
“ ”  
“ ”  
가  
가

(paradigm shift)가

가  
(critical mass)

10 1  
中村祐輔 , “ 10 1 ”  
가

(research materials)

(transdisciplinary)

(tacit)

가

가

가

가

가

. 1998 1999

2

1/3

(embryo stem cell)

(Living Modified

Organism, LMO)

가

< 1 >

가

가

D/B )

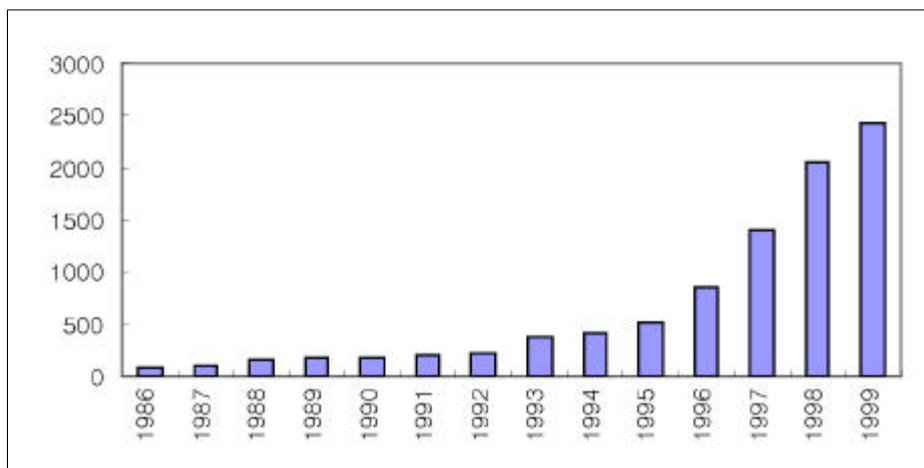
1998 99

가

1/3

(IPC C12N

< 1 >



: Chin, Hemin (2000).

< 1> 가 1996 99  
 1991 95 가 (0.56% 3.41%) (1.80% 2.74%)  
 , (1.04% 0.52%),  
 (15.35% 8.74%)

< 1>

가	1991 95		1996 99	
	(%)		(%)	
	0.56	27	3.41	308
	1.80	87	2.74	247
	0.81	39	0.95	86
	0.83	40	0.61	55
	4.56	220	3.30	298
	15.35	741	8.74	789
	1.04	50	0.52	47
	100.00	4,828	100.00	9,031

3.

, , ,

(activity index), (technology strength) ,  
 item

(1)

1999 1,608 0.8% ,  
 5.5% < 2> 14% ,  
 10%

< 2> (1999 )

( : )

	772	186	268	133	28	28	35	1,450
	22	-	12	84	19	18	3	158
	794	186	280	217	47	46	38	1,608

: , “2000 ”

(2)

(2000) , 2002 가

50%

가가

33%

, < 3>  
2000 881

673 ,

208

genomics

17

( )

28

4). 1998 99 (IPC C12N) ,  
( )

가 1,474 ( 11.8%), 가 741 ( 6.0%), 가 240 ( 1.9%)  
( 1

6 8 가 ) 가 ,

가 1 가 667 , 가 179 , 가 85

5)

3) 가  
3,141 6,598  
KORDIC DB (

) 1.329

4) 가  
5) 29 가가 2 가

(structural biology)	(structure and function of macromolecules)	-	88	88
	(anabolism)	-	12	12
	(catabolism)	-	9	9
	(enzyme)	2	101	103
	(action mechanism of bioactive substance)	5	111	116
	<b>(genomics)</b>	<b>1</b>	<b>16</b>	<b>17</b>
	(replication, transcription and translation)	1	23	24
	(gene expression and regulation)	8	208	216
	(recombinant DNA)	2	72	74
		3	11	14
	22	651	673	
) (genetics)	(molecular genetics)	8	118	126
	(developmental genetics)	1	22	23
	(cytogenetics)	1	33	34
	(populational genetics)	1	20	21
		1	3	4
		12	196	208
	34	854	881	

: 1. 가  
 : KORDIC, 「 DB」

(3)

3.6%, 13.2% , < 4 >  
 가  
 , 14 , 43 , 35  
 가 (pool)  
 1  
 < 4 >

			%( =100)
	31	188,248	100
	23	50,767	27
	2	6,695	3.6

: WFCC(world federation of culture collection)

(4) ( )

,<sup>6)</sup> 가 , 가  
 가 ,  
 < 5>  
 1998 99 28  
 22.5%  
 1.4%,<sup>7)</sup>  
 < 5> (1998 1999 )  
 ( : , %)

	2,857 (58.5)	1,122 (22.5)	348 (7.1)	59 (1.2)	170 (3.5)	36 (0.7)	45 (0.9)	1 (-)	243 (5.0)	4,881 (100%)
	364 (81.8)	6 (1.4)	19 (4.3)	19 (4.3)	1 (0.2)	7 (1.6)	1 (0.2)	-	28 (6.3)	445 (100%)
	15 (53.6)	-	6 (21.4)	2 (7.1)	-	1 (3.6)	-	-	3 (10.6)	28 (100%)

: : , : , : , , :

8) ,  
 . < 2>  
 1 가

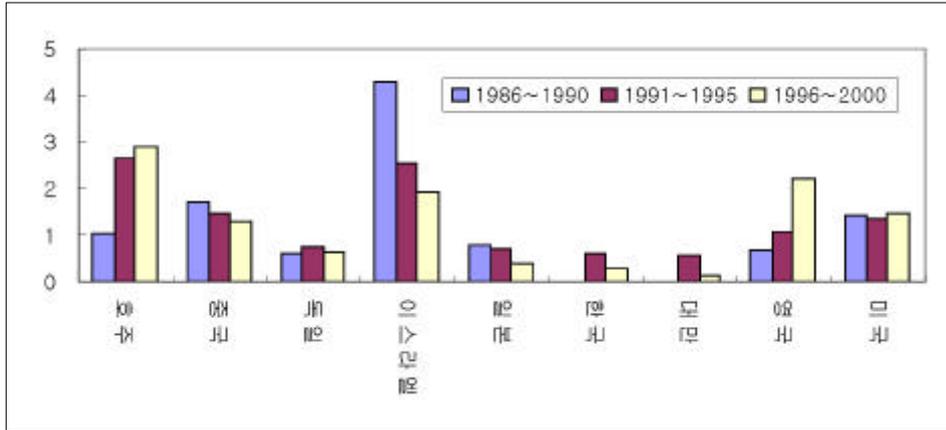
6) monoclonal antibody MRC  
 C. Milstein G. Koehler ,

가 .  
 7)

8) (activity index) = ( 가가 ) ÷ ( )

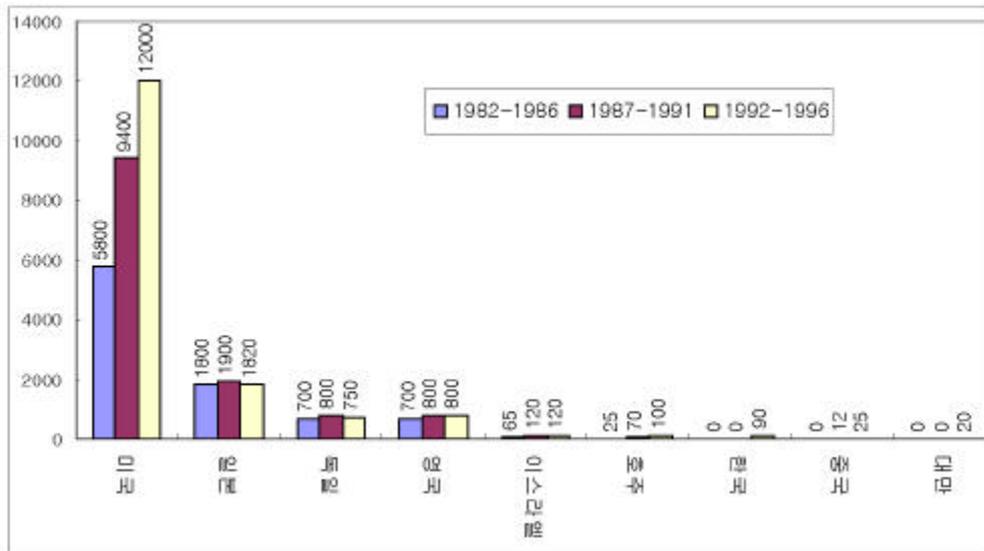
가 가 , , , 가

< 2> (1986 2000)



100 , 9) 1992 1996  
12,000, 2,000  
( < 3>).

< 3> 가



: Office of Technology Policy, (1998)

< 4> 1975 1998 (

9) (technology strength)

quality-weighted indicator .

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5 14

가

, serum albumin, protein C, FGF, antisense

10

FDA

urokinase

EPO, CSF, TPA

FDA

1 4

가

가

가

< 4>

item

		(x)
-----	apoptosis(4 )	
-----	humanized(6 )	
-----	chimeric(5 )	
-----	TGF(6 )	
	FGF(x)	
	antisense(x)	
	angiogenesis(x)	
-----	AAV(12 )	
	protein C(x)	
-----	SOD(5 )	
-----	repressor(14 )	
	inhibitor(x)	
-----	TPA(6 )	
-----	lympokine(5 )	
	serum albumin(x)	
-----	CSF(10 )	
-----	EPO(13 )	
-----	urokinase(12 )	
-----	interferon(5 )	
-----	growth hormone(9 )	
-----	insulin(7 )	
'77 '78 '79 '80 '81 '82 '83 '84 '85 '86 '87 '88 '89 '90 '91 '92 '93 '94 '95 '96 '97 '98		

: : , : , : FDA

x : . ( ) :

: . (2000), p.50.





가가 가

가

(field)

가

, 가

가

가

가

가

가

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가

가가

가

가

300

가

가

가

가

가

1990

NIH

3 5%

ELSI(Ethical, Legal and Social

Implications)

5.

가

. Ernst & Young

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가

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(1998), 「

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