

Cyclosporine A

FK-506

II

()

ABO HLA
HLA ABO

A

가

Azathioprine (Imuran)
Steroid가

) 1992
)

) 1992
)

Imuran Prednisone(Steroid)

T

, Rapam-ycin, RS-61443, Deoxy
가 FK-506

F K-506

가 .

Azthioprine

Purine Mecaptopurine(6-MP) , Purine
 , . 가 ,
 , . Steroid
 Cyclosporine Cyclosporine
 Cyclosporine , ,
 . Prednisone Steroid
 . ,
 Steroid , 가
 가 . , 가
 Prednisone (Antilymphocyte Globulin : ALG) Azathiopuine
 가 . Stazle
 1800 가 1960 Stazle

가		
		가
		92. 3
	10m ℓ	93. 6
	" 25m ℓ	"
		93. 11
		"
	100m ℓ	93. 11
	100m ℓ	"
		94. 1
		"
		94. 2
		"
		94. 2
		94. 3
		94. 5
		94. 7
8	15	

. Antilymphocyte Globuline T-Cell
 . 가 가 Cyclosporine
 가 Clyindrocapon Lucidum Trichoderma
 polysporum Cyclic endcapeptides .
 T
 Cortisone Macrophage
 Cyclosporine Macrophage

Cyclosporin A EB ,
 EB B T
 . Cyclosporine Cyclosporine Azathioprine Steroid
 Triple therapy .
 가 Cyclosporine 가 Cyclosporine
 (Microemulsion)

Fujisawa , FDA 가 FK-506 Cyclosporine A
Cyclosporine A

Cyclosporine A Side effect가
Renal impare Hyperkalemia 가
FK-506 가 Rapamycin Cyclosporine 500
, RS-61443 Steroid

87 Deoxyspergualin 가
, PGE, Analogue

가 가 가

가 , 가

, Imuran 가 (Pupura)

, 가 ,

Cyclosporin A FK-506		
	Cyclosporin A	FK-506
	• 1970 6 • 1976 Sandoz microbiological Screening program	• 1987 Fujisawa • IL-2 T-cell poliferation screening
	• 1970 Wisconsin(USA)and Hardanger Vedda(Norway) Cylin- rocarpon lucidum Tolypocladium inflatum • 1973 cyclosporine • 1976 cyclosporin A • 1978 • 11 cyclic peptide , C₉ • 1202.6 hydrophobic drug • 25 cyclosporine 가 cyclosporin G가 A • 가 antiparacitic effect가 • 1995 generic drug가 •	• cyclosporin A • cyclosporin A 가 • 1987 Fujisawa sterptomycestsukubaensis No.9993 • PK-506 (Goto and Kino) • cyclosporin A IC50(50% , lymphocyte) • 0.32nM(FK-506) : 26nM(GA) • 1989 () (Pittsburg) • 1993. 6. 가 • 1993. 9 FDA 가 • 1993. 11 美FAD 가, 「 」
	• • T-helper cell lymphokine(IL-2)	• cyclosporin A • 1989 FK-506 cyclosporin A (FK-506 : FKBP : C5 A : cyclophilin)
	• 1995 • (Basel, Swiss) • Sandoz Cyclosporine FK-506 cyclosporine	• Merck & Co() Fujisawa() • FK-506 cyclosporine • 1993. 11 FDA 가 , 100 • 가
	• Sandoz 83 • 135	• 가 •
	• nephrotoxicity, hypertension, nause hepatotoxicity, tremor, seizure	• renal impare, hyperglycemia, hyperkalemia, abdominal distension
	• cyclosporined 「 」 94	•

Transplant lung , 가

「Imuran」 「Imuran」 「Sandimmun」 「

5

Sandimun ,

CyclosporinA (: , %)								
1991		1992		1993		1994		
70	40	108	54.3	136	25.9	150	13	

가 Cyclosporine A 「Sandimmun」

71 11

Cyclosporine A

Sandimmun Cyclosporin A 73 12 76

Sandimmun

82~83 가 50%

10 20 가

Sandimmun 70~80%

「Imutera」 Azathioprine Purine

Purine

Azathioprine

가

6-Cl-methyl-4-nitro-5-imidazolylmercaptopu rine) 277.29 . 1942

Hitchings Purine Nucleoside, Nucleotide 가

가

β D-Ribonucleoside β D-2'-de-Oxyribonucleoside Cy-Totoxic activity 가 가

Azathioprine , 6-Mercapto Purine S-Methylation

Xanthione Oxidase Thiourate

Azathioprine 가

Azathioprine Cellcycle S-Phase ,

, 87 Fujisawa
FK-506 93 9 FDA 가
2 11 가
FK-506()
가 가 .
100
FK-506
< 1995/4/3>