

MR(Measles Rubella) Vaccine

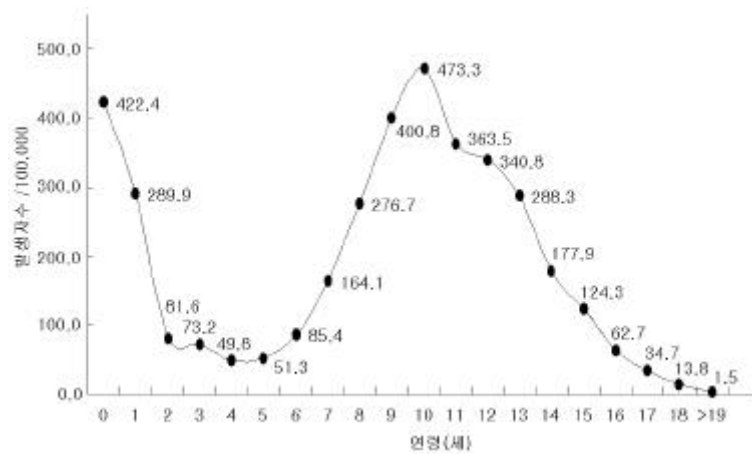
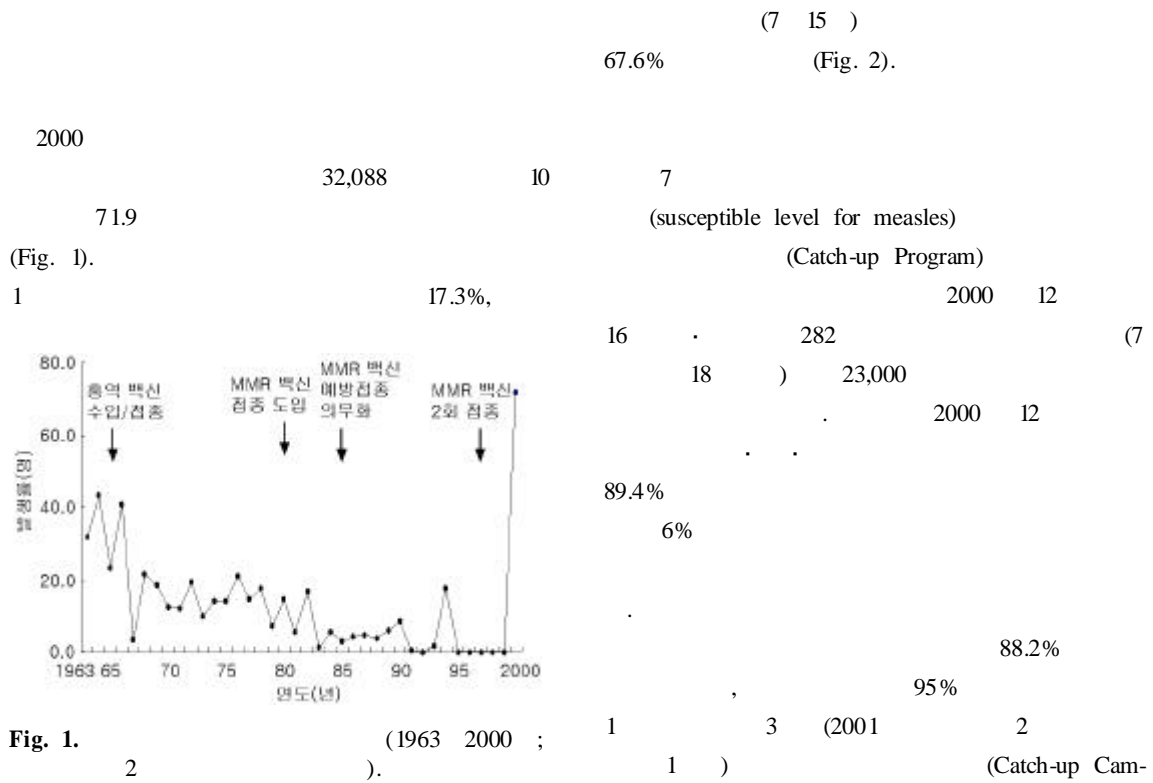


Fig. 2. (2000).

paign) MMR
 8 16 가
 12 MMR 2 MMR
 <2 400
 MMR > 5 MMR 2
 Serum In-
 stitute of India(SII) measles-rubella(M , 가 12
 R)
 (WHO)가 (UNICEF) () MR
 SII SII MR MR
 SII MR measles
 MR Edmonston-Zagrev measles virus strain Cro-
 atia Zagrev (Institute of Im-
 munology) Enders SII 1988 1 12
 MR Edmonston
 가 가 1 strain
 (2007 ¹⁾(Fig. 3) master seed
), MMR human diploid cell line WI-38
 WHO measles

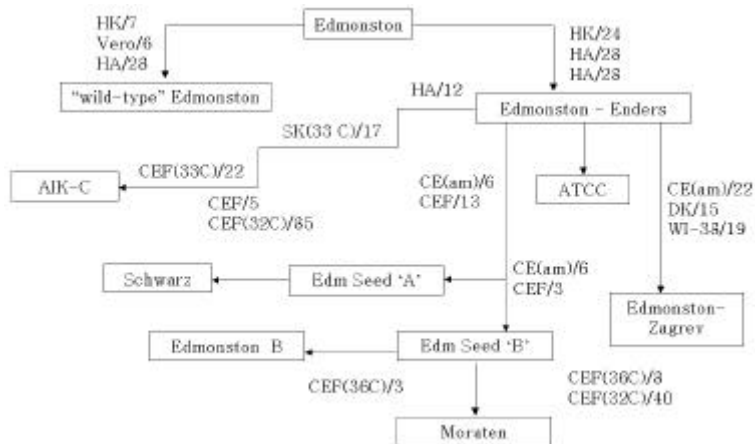


Fig. 3. Passage histories of live attenuated measles virus vaccines derived from John Enders's isolate of Edmonston virus. Temperature of passage assumed to be at 37 unless otherwise stated. HK, human kidney; HA, human amnion; CE(am), intraamniotic cavity of chick embryo; CEF, chick embryo fibroblast; DK, dog kidney; WI-38, human diploid cells; SK, sheep kidney.

Institute of Immunology SII
 Swiss Serum and Vaccine Institute, Switzerland
 Gerencia General de Biologicosy
 Reactivosemd
 Rubella Wistar
 Institute Dr. Stanely Plotkin Ra 27/3
 SII 1989 7 15 Zagrev
 . Master seed
 Wi-38
 human diploid
 cell line MRC-5

Table 1

Triviraten

Measles rubella WHO Re-
 quirements for measles, mumps, and rubella vaccines
 and combined vaccine(live)(Requirements for Biologi-
 cal Substances No.⁴⁷⁾ ²⁾, Measles Rubel-
 la vaccine

lyophilization

(Fig. 4).

MR 가 5% sorbitol-2.5% gelatin
 gelatin Merck
 , gelatin
 가 bovine spongiform encephalitis
 (BSE) 가
 neomycin

가

MR

MRC-5 sterility,
 hemadsorbing viruses, non-hemadsorbing extraneous
 agents karyology . Single harvest
 sterility virus 가(content)
 . Virus pool sterility,
 가(content), Mycoplasma cell cultures of neutra-
 lized virus pool for adventitious agent
 . Clarified virus pool sterili-
 ty 가
 , SII physical
 appearance, (sterility test), 가 (poten-
 cy/stability test), (identity test) , general
 safety test, (residual moisture test)
 residual serum protein test . WHO
 sterility, virus concentration, thermos-

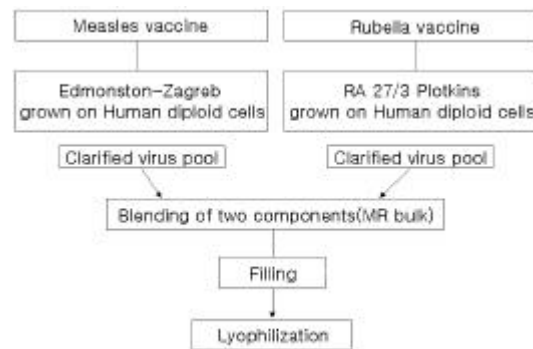


Fig. 4. MR

Table 1. MMR (MMR Vaccine Viral Strains Used)

Vaccine	Meases	Mumps	Rubella
M-M-R II	Enders-Edmonston	Jeryl Lynn	Wistar RA 27/3
Pleserix	Schwarz	Urabe	Wistar RA 27/3
Triviraten	Edmonston Zagreb	Rubini	Wistar RA 27/3
Japanese vaccine()	AIKC	Hoshino	Takahashi
	Schwarz FF8	Torii	TO 336
	Tanabe	Urabe	Matsuura
1986 Japanese Standard()	AIKC	Urabe	TO 336

tability and identity, general safety, residual moisture, inspection of final containers

SII

가 , , 4 , SII WHO GMP , 가
2000 11 6 10
³⁾(Table 2).

Table 2. MMR SII WHO, UNICEF
PAHO 3 7 dose MMR
가 , MR
1999 3 dose 14 가
SII , 가 MR
adverse effect
Indra Bhargava SII
가 MR
1,360

Table 3. Supplies of MR 10 Dose Vaccine (1999. 10 2001. 3)

Buyer	Quantity(vials)	Country
UNICEF	166,500	Albania, Lebanon
PAHO	2,972,070	Anguilla, Brazil, Costa Rica, Ecuador, El Salvador, Honduras, Mexico, Panama, Rep. Dominica, St. Lucia, St. Vincent, Suriname
Total	3,138,570	14 countries

Table 4. Supplies of MMR 10 Dose Vaccine

WHO	1,000	Mauritius
PAHO	2,255,515	Bahamas, Belize, Costa Rica, Rep. Doninica, Grenada, Guyana, Jamaica, Nicaragua, Panama, St. Vincent, Suriname, Trinidad, Brazil
Others	575,000	Egypt, Brazil
Total	2,319,615	19 countries

Table 5. Supplies of MMR Single & 5 Dose Vaccine

Dose	Buyer	Quantity(vials)	Country
5 single	PAHO	57,000	Guyana, Jamaica, Nicaragua, Panama
	PAHO	770,500	Costa Rica, Cuba, Mexico
	WHO	191,389	Jerusalem
	Others	7,398,090	Colombia, Egypt, Mexico, Papua New Guinea, Guyana, Tanzania, Uganda, Honduras
Total(single)		8,644,979	16 countries

Table 6. Systemic Side Effects

Side effects	Present(%)	Absent(%)
Mild fever	72(5.29)	1,288(94.71)
High fever	2(0.15)	1,358(99.85)
Fever	74(5.44)	1,286(94.56)
Cold & Coryza	39(2.87)	1,321(97.13)
Red eyes	15(1.10)	1,345(98.90)
Rash	8(0.59)	1,352(99.41)
Cervical lymphadenitis	3(0.22)	1,357(99.78)
Arthritis	3(0.22)	1,357(99.78)
Nodule	4(0.29)	1,356(99.71)
Arthralgia	5(0.37)	1,355(99.63)

Table 7. Local Side Effects

Side effects	Present(%)	Absent(%)
Pain & swelling	47(3.46)	1313(96.54)
Redness & Tenderness	22(1.62)	1338(98.38)

⁴⁾(Table 6, 7) .

SII MR vaccine

MMR

WHO

GMP

MMR

가

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- 1) Griffin DE and Bellini WJ. Chapter 43. Measles virus. In :BN Fields, editors. Virology. 3th ed. Philadelphia(New York : Lippincott-Raven, 1996:1267-312.
- 2) Requirements for measles, mumps, and rubella vaccines and combined vaccine(live)(Requirements for Biological Substances No. 47), WHO technical Report Series, No. 840, 1994.
- 3) , 1999:263-70, 287-8.
- 4) Bhargava, Indra. A study of immunogenicity and reactogenicity of measles rubella vaccine produced by Serum Institute of India Ltd., Pune, India in prepubertal and adolescent girls. Serum Institute of India Ltd., 1999.