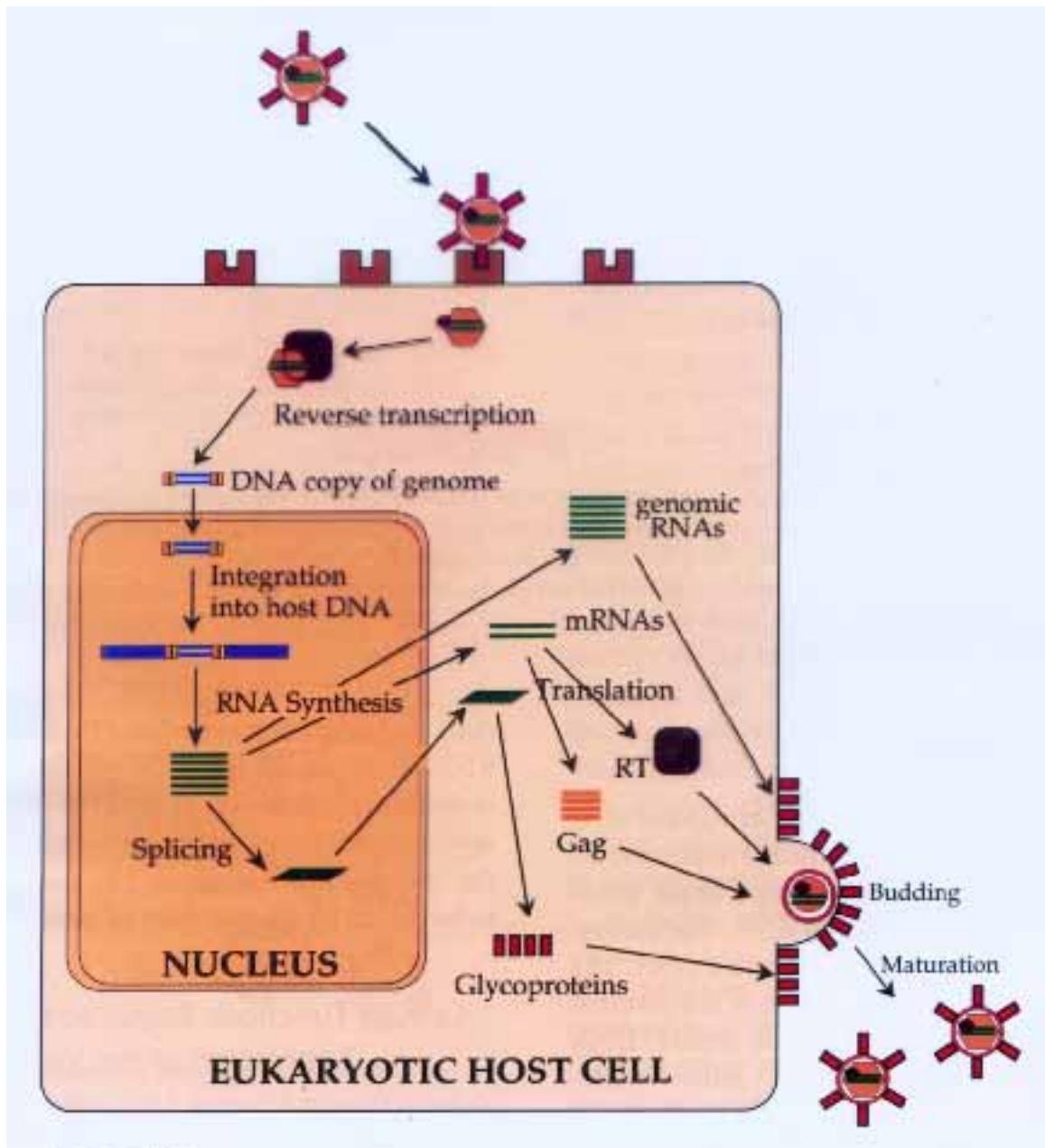
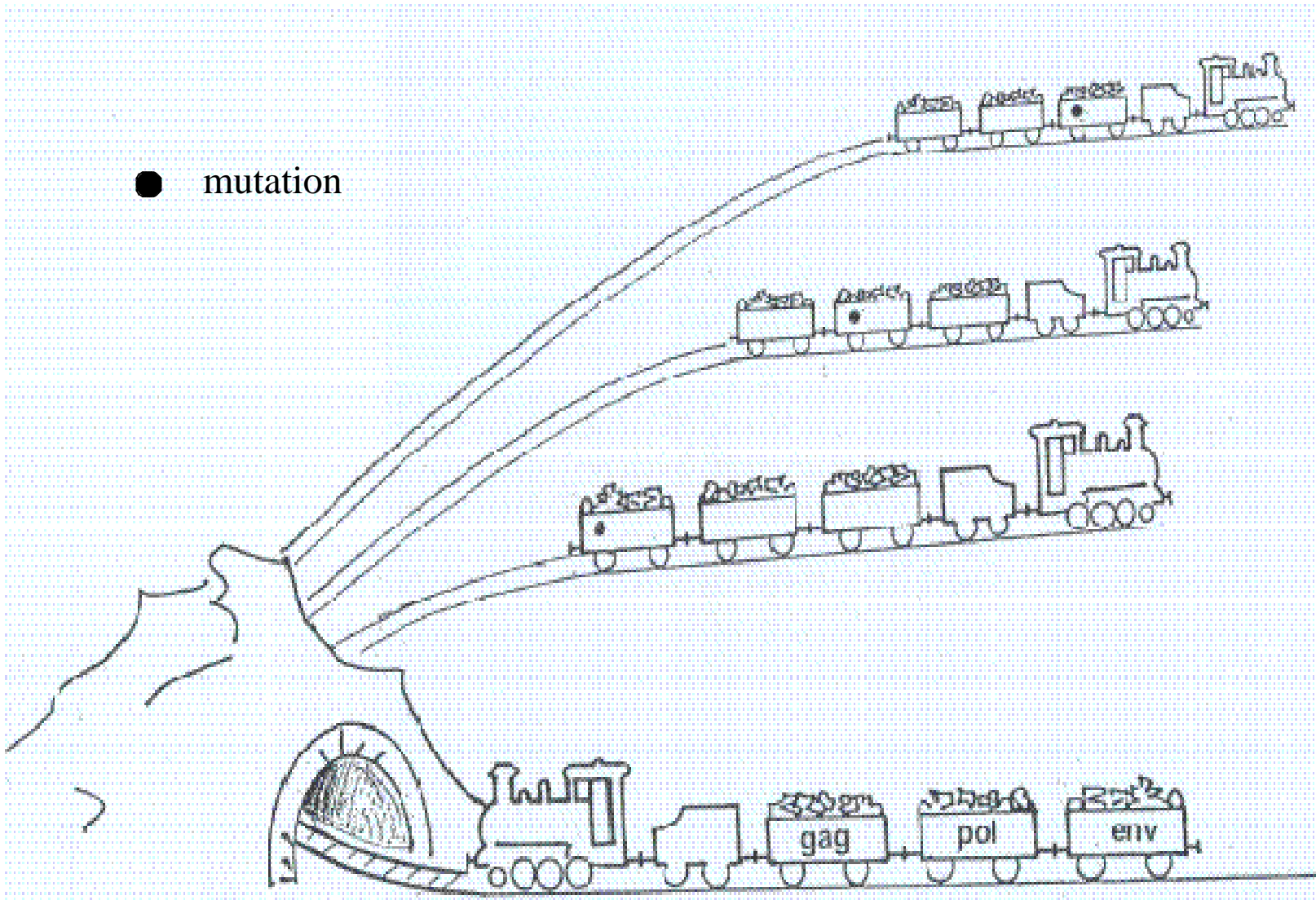
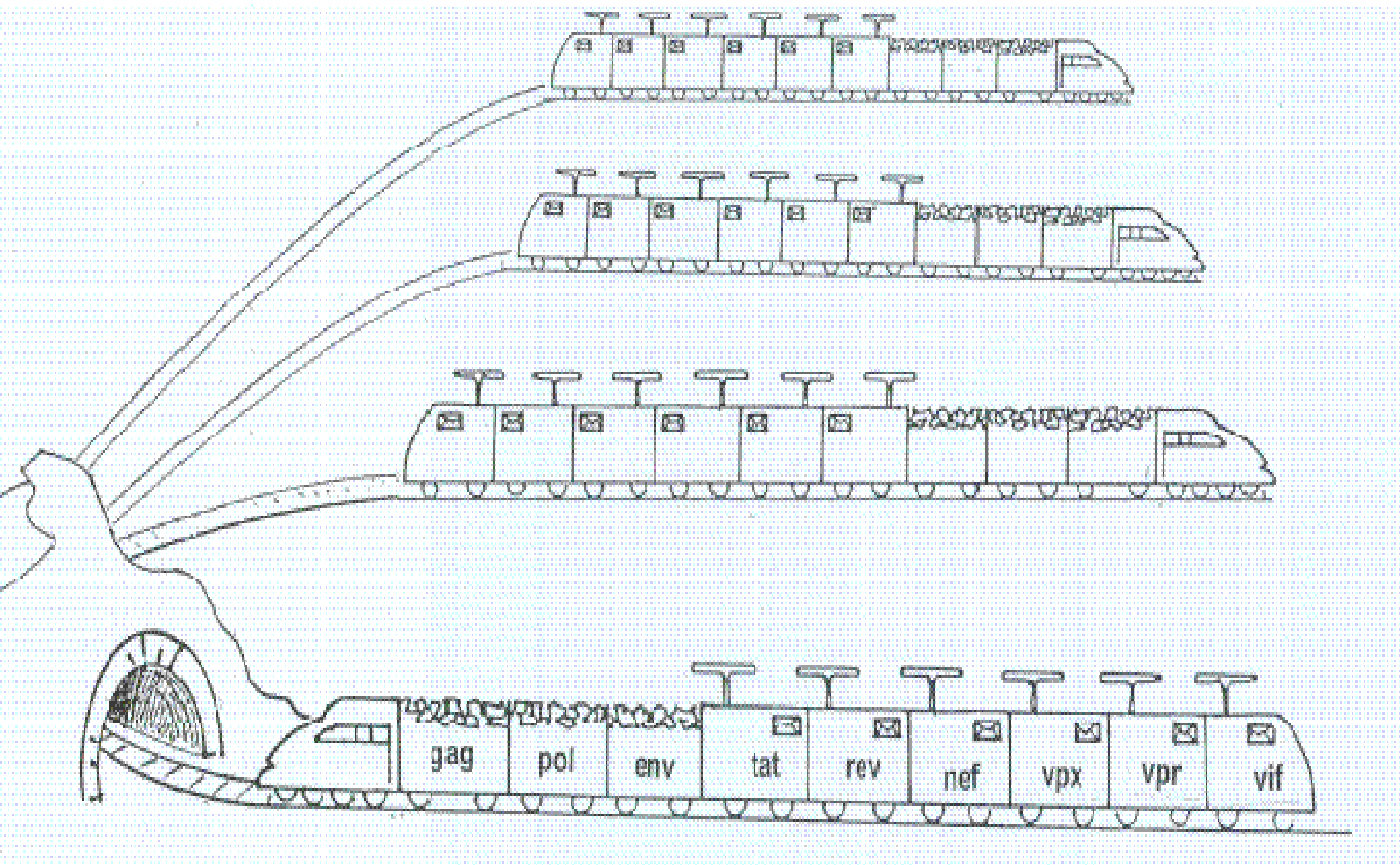


6.10^9



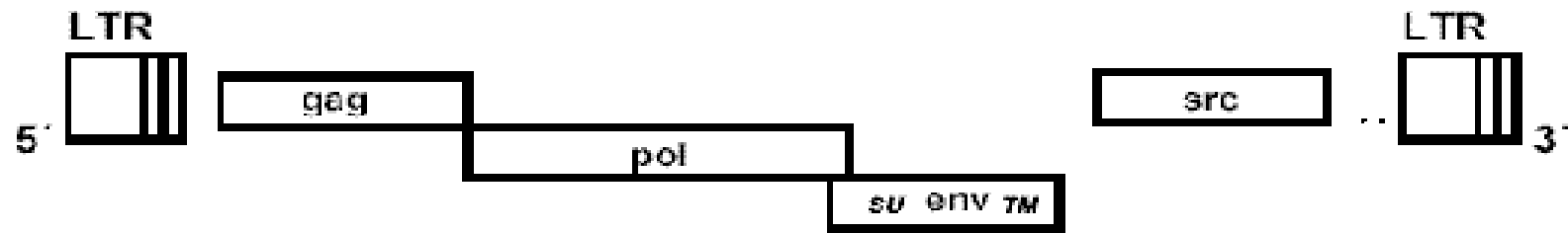
- mutation





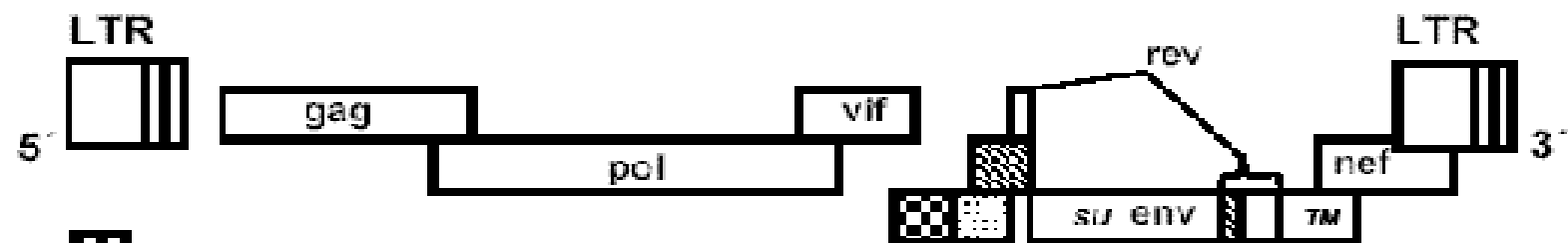
A

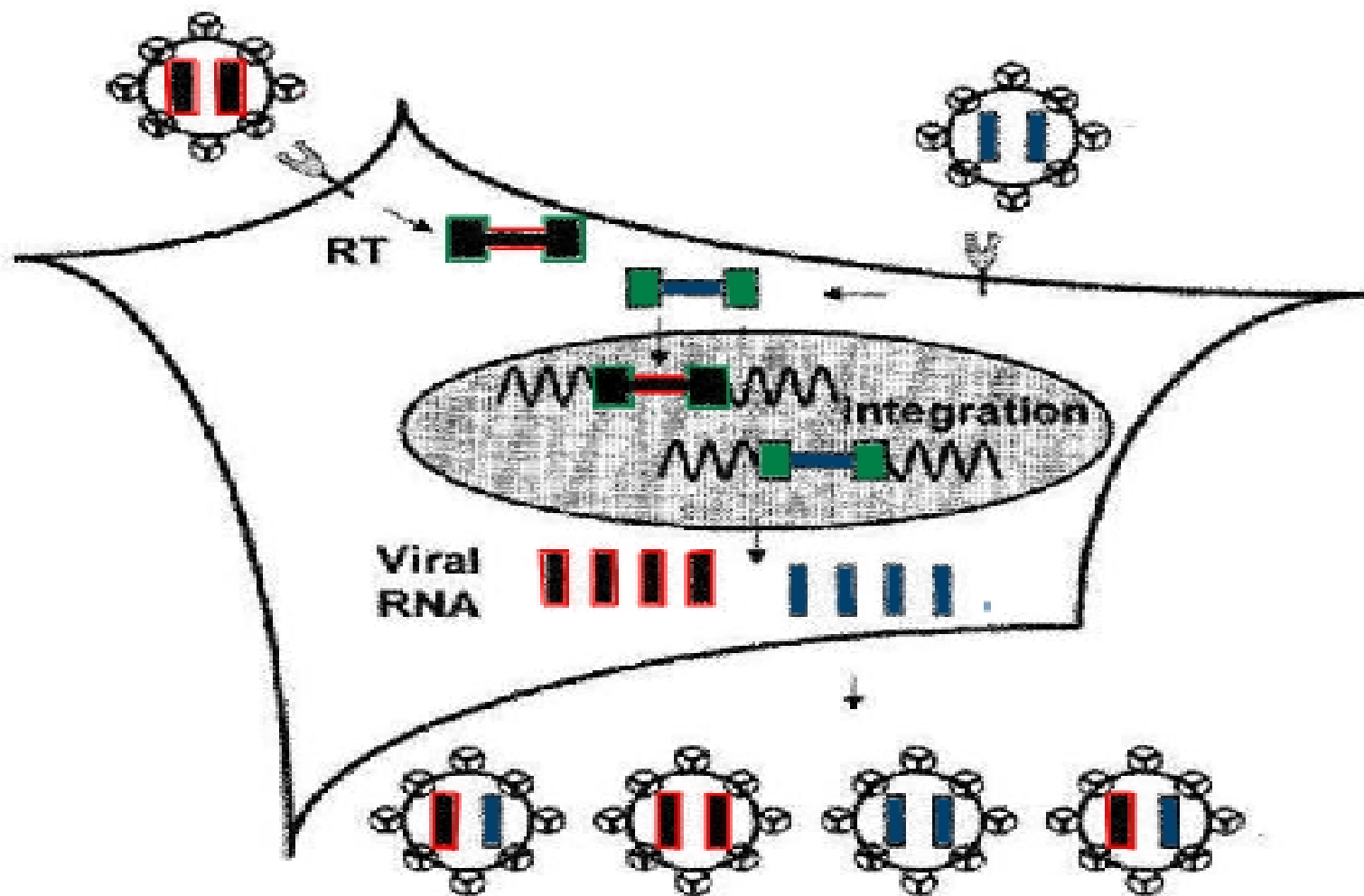
PR-RSV

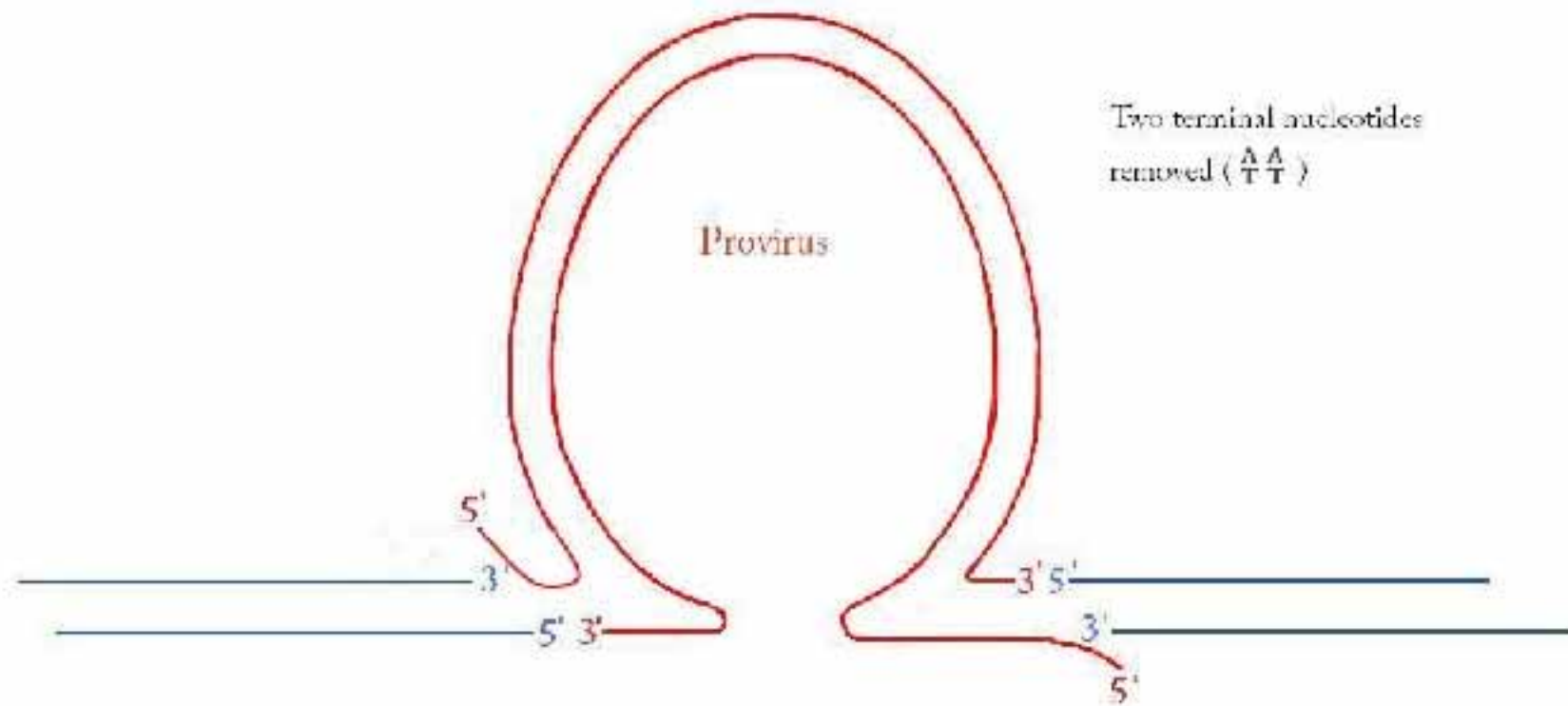


B

SIV_{mac239}







Retroelements

Designation	Reverse transcriptase	Transposition or integration	LTR	Virion	Example
Retrons	+	-	-	-	msDNA (<i>Myxobacteria</i>)
Retroposons gag + en + RT	+	+	-	-	G element (<i>Drosophila</i>), mutator, LINE-1, telomerase
Retrotransposons LTR + gag + RT + Int + LTR	+	+	+	-	Ty, copia, gypsy, IAP, VP30
Retroviruses	+	+	+	+	
Pararetroviruses	+	-	-	+	Hepadnaviruses, HBV, Caulimoviruses
Retrosequences	-	-	-	-	Pseudogenes, SINE (tRNA), Alu (7SL RNA)
Retrogenes	-	-	-	-	Pgk-2

Cytoplasm

Nucleus

Integration of truncated L1
at new chromosomal site



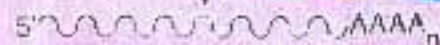
Second strand synthesis?
Other L1-encoded activities?
Host factors?



Transcription
processing



mRNA
export



Translation and
HNP assembly;
Post-translational
modification



Import or entry
during mitosis



Target primed
reverse transcription
(TPRT)

Alu
pseudogenes

Where does HIV come from?



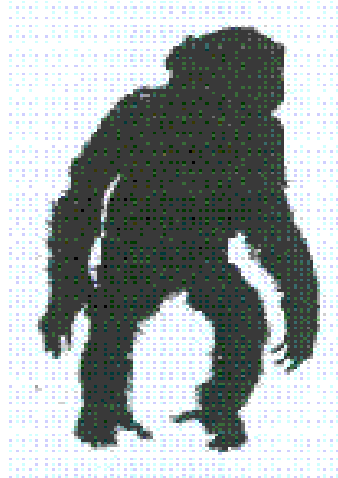
Asymptomatic sooty mangabey

SIV_{sm}



HIV-2 AIDS

Transfer into Asian macaques elicits AIDS



Chimpanzee

SIV_{cz}

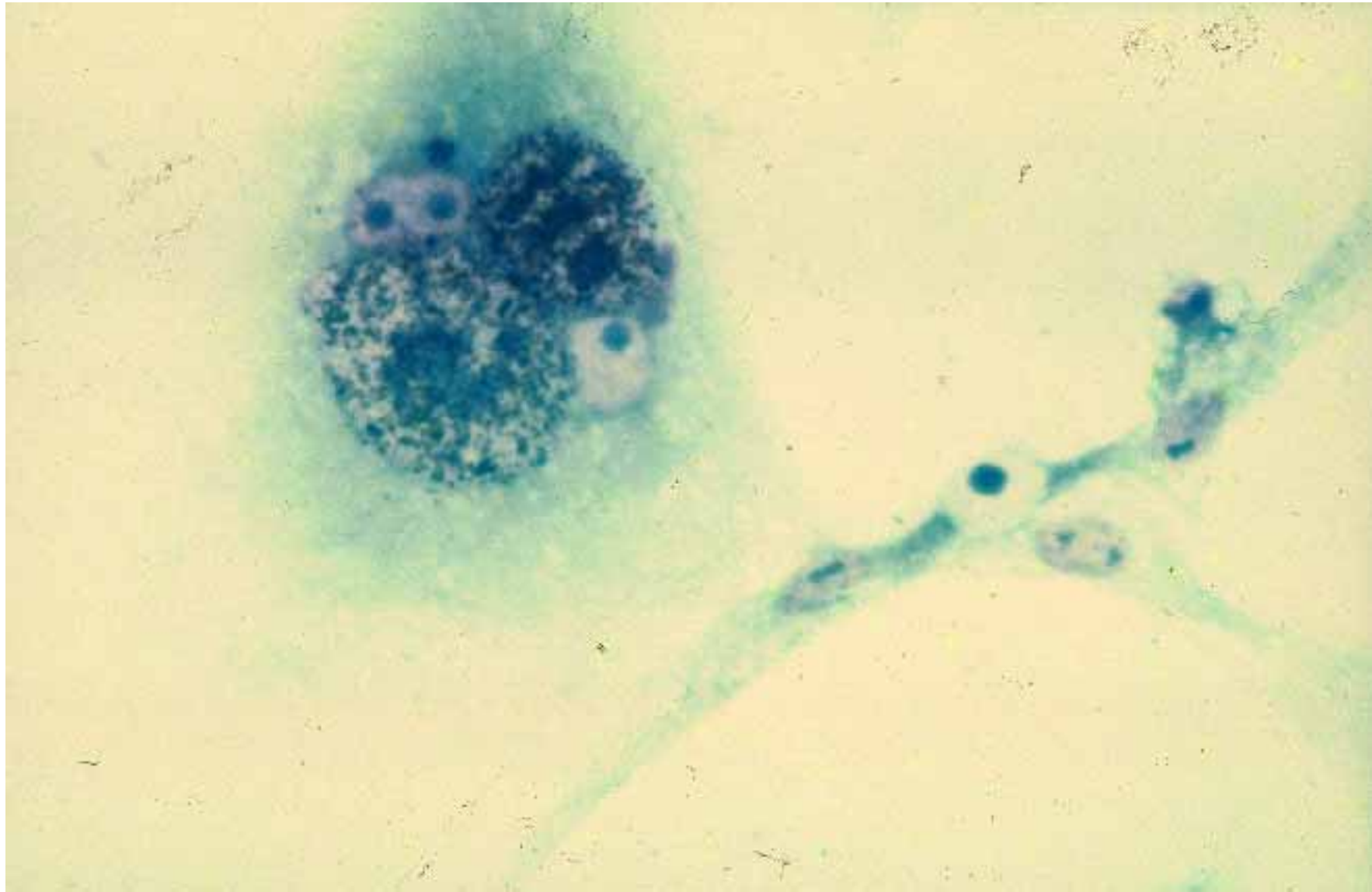


HIV-1 AIDS

subgroups: O, M (main), and N (new)

1959 - capture in Zaire

HIV radiation 50 years ago



TRIM5 α

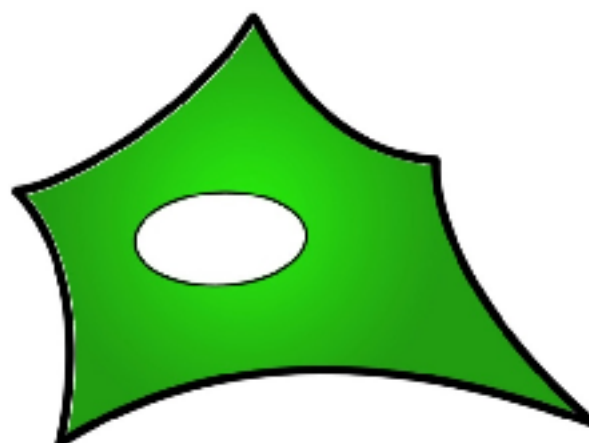
non-permissive
cells from Old World monkeys



cDNA

X

permissive
human cells

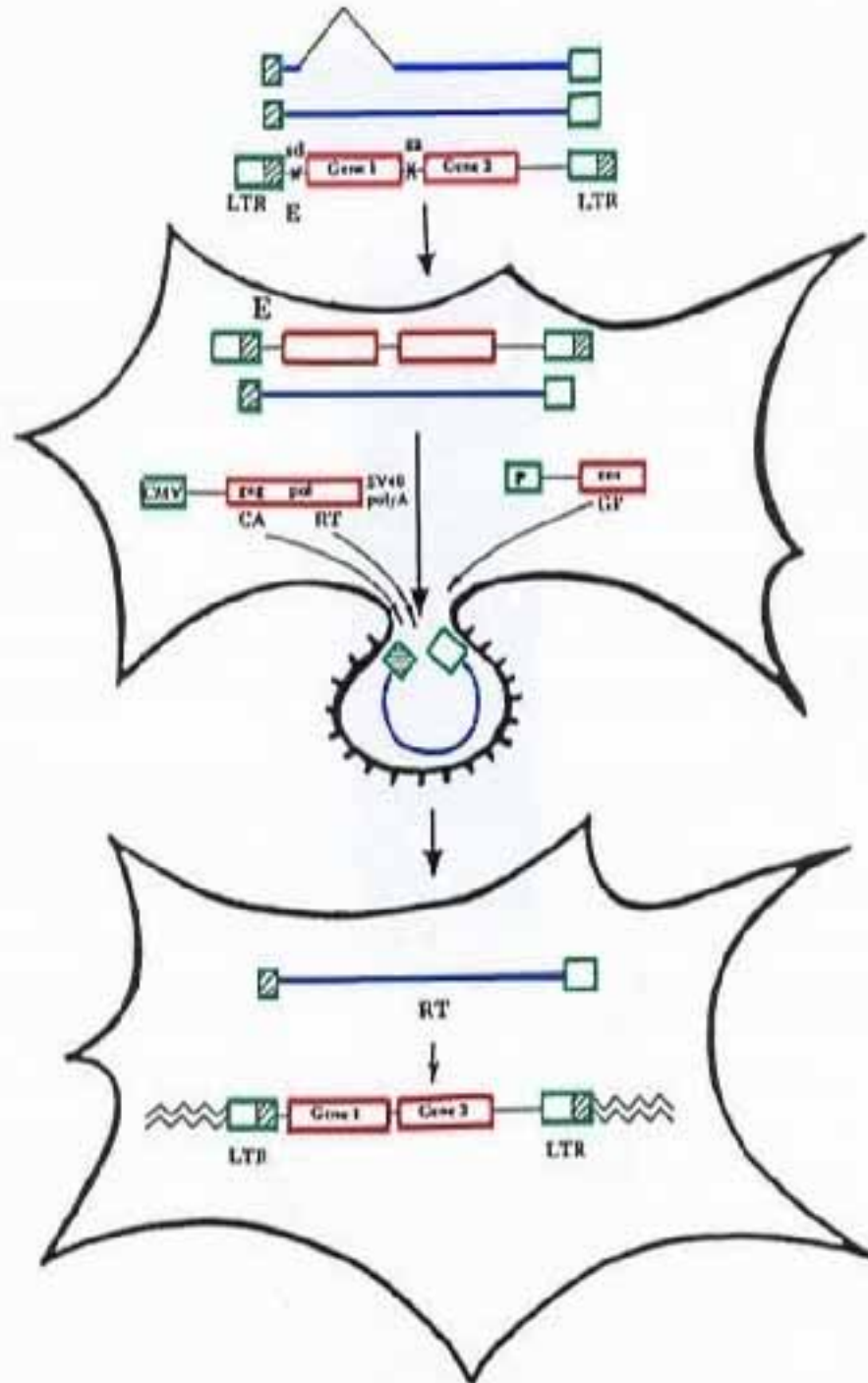


non-permissive
hybrid cell

Reymond et al (2001)

Munk et al (2002)

Stremlau et al (2004)



Retroelements - 42% of human genome

Designation	Reverse transcriptase	Transposition or integration	LTR	Virion	Example
Retrons	+	-	-	-	msDNA (<i>Myxobacteria</i>) <i>Myxococcus xanthus</i> , <i>E. coli</i>
Retroposons gag + CN + RT	+	+	-	-	G element (<i>Drosophila</i>) LINE-1 + telomerase
Retrotransposons LTR + gag + RT + int + LTR	+	+	+	-	Ty. copia, gypsy IAP, VP30
Retroviruses	+	+	+	+	↓ agenti - nitna suprac - študo 20112
Pararetroviruses	+	-	-	+	Hepadnaviruses Caulimoviruses
Retrosequences	-	-	-	-	Pseudogenes SINE (tRNA), Alu (7SL RNA)
Retrogenes	-	-	-	-	Pgk-2

Human → LINE 47% , insertion to APC - colon cancer , stop codon for attraction - regulation of inflammatory response

U2m:kl2 RNA
se v350 p1201 DK
p1200 f1200
infekčni
horizontalni prenos
modifikacije
IAP