



Viruses

(So, you think that humans invented
“precision-guided munitions”? Heh . . .)

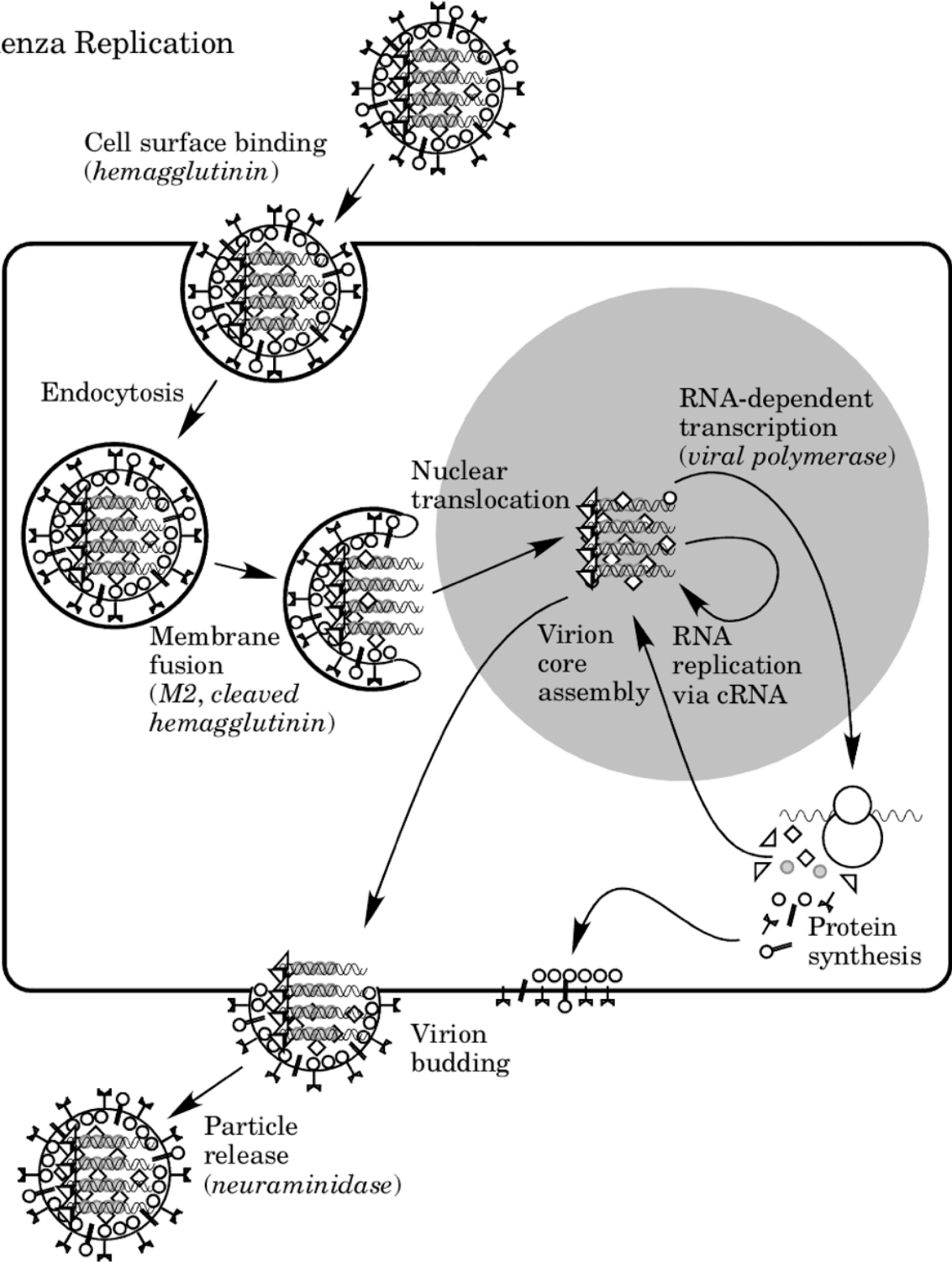
Causes of Death

Table B. Percentage of total deaths, death rates, age-adjusted death rates for 2006, percentage change in age-adjusted death rates in 2006 from 2005, and ratio of age-adjusted death rates by race and sex for the 15 leading causes of death for the total population in 2006: United States

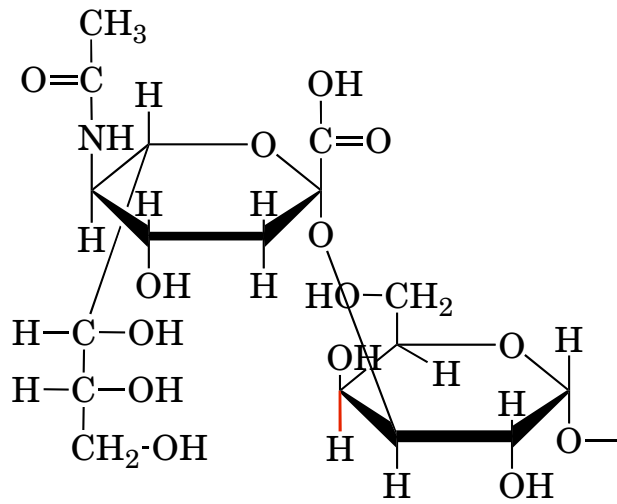
[Crude death rates on an annual basis per 100,000 population; age-adjusted rates per 100,000 U.S. standard population. The asterisks preceding the cause-of-death codes indicate that they are not part of the *International Classification of Diseases, Tenth Revision (ICD-10)*, Second Edition; see "Technical Notes." Data for specified races other than white and black should be interpreted with caution because of inconsistencies between reporting race on death certificates and on censuses and surveys; see "Technical Notes." Race categories are consistent with the 1977 Office of Management and Budget (OMB) standards. Cause-of-death coding changes in 2006 may affect comparability of data between 2006 and previous years for various causes of death; see "Technical Notes"]

Rank ¹	Cause of death (based on ICD-10, 2004)	Number	Percent of total deaths	2006 crude death rate	Age-adjusted death rate						
					2006	Percent change to 2006	Ratio				
							Male to female	Black ² to white	AIAN ^{2,3} to white	API ^{2,4} to white	Hispanic ⁵ to non-Hispanic white
...	All causes	2,426,264	100.0	810.4	776.5	-2.8	1.4	1.3	0.8	0.6	0.7
1	Diseases of heart (I00-I09,I11,I13,I20-I51)	631,636	26.0	211.0	200.2	-5.2	1.5	1.3	0.7	0.6	0.7
2	Malignant neoplasms (C00-C97)	559,888	23.1	187.0	180.7	-1.7	1.4	1.2	0.7	0.6	0.6
3	Cerebrovascular diseases (I60-I69)	137,119	5.7	45.8	43.6	-6.4	1.0	1.5	0.7	0.9	0.8
4	Chronic lower respiratory diseases (J40-J47)	124,583	5.1	41.6	40.5	-6.3	1.3	0.7	0.6	0.3	0.4
5	Accidents (unintentional injuries) (V01-X59,Y85-Y86)	121,599	5.0	40.6	39.8	1.8	2.2	0.9	1.4	0.4	0.7
6	Diabetes mellitus (E10-E14)	72,449	3.0	24.2	23.3	-5.3	1.4	2.1	1.9	0.7	1.5
7	Alzheimer's disease (G30)	72,432	3.0	24.2	22.6	-1.3	0.7	0.8	0.5	0.4	0.6
8	Influenza and pneumonia (J10-J18)	56,326	2.3	18.8	17.8	-12.3	1.4	1.1	0.8	0.8	0.8
9	Nephritis, nephrotic syndrome and nephrosis (N00-N07, N17-N19,N25-N27)	45,344	1.9	15.1	14.5	1.4	1.4	2.3	1.1	0.7	1.0
10	Septicemia (A40-A41)	34,234	1.4	11.4	11.0	-1.8	1.2	2.1	1.0	0.5	0.8
11	Intentional self-harm (suicide) (*U03,X60-X84,Y87.0)	33,300	1.4	11.1	10.9	0.0	4.0	0.4	1.0	0.5	0.4
12	Chronic liver disease and cirrhosis (K70,K73-K74)	27,555	1.1	9.2	8.8	-2.2	2.1	0.8	2.4	0.4	1.5
13	Essential hypertension and hypertensive renal disease (I10,I12,I15) ⁶	23,855	1.0	8.0	7.5	-6.3	1.0	2.7	0.9	0.9	1.0
14	Parkinson's disease (G20-G21)	19,566	0.8	6.5	6.3	-1.6	2.2	0.4	0.5	0.5	0.6
15	Assault (homicide) (*U01-*U02,X85-Y09,Y87.1)	18,573	0.8	6.2	6.2	1.6	3.9	5.8	2.0	0.8	2.7
...	All other causes (residual)	447,805	18.5	149.6

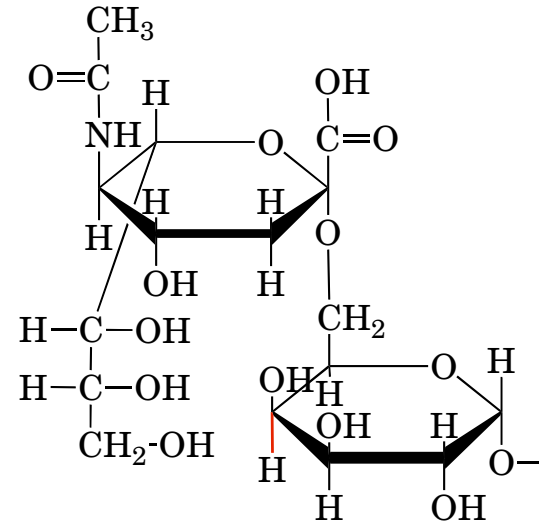
Influenza Replication



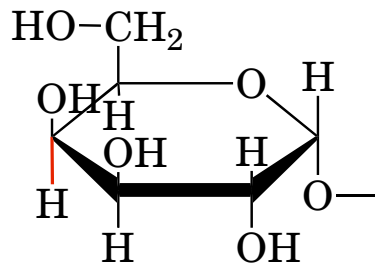
Influenza Receptors



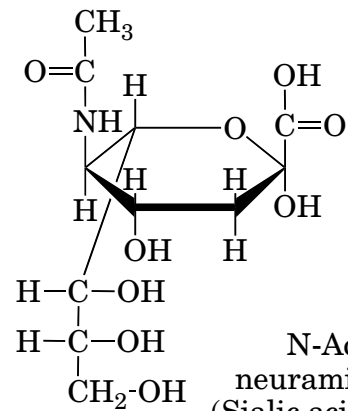
NeuAα2,3-Galactose



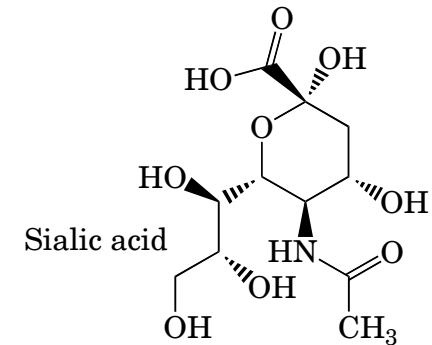
NeuAα2,6-Galactose



Galactose



N-Acetyl
neuraminic acid
(Sialic acid, NANA)

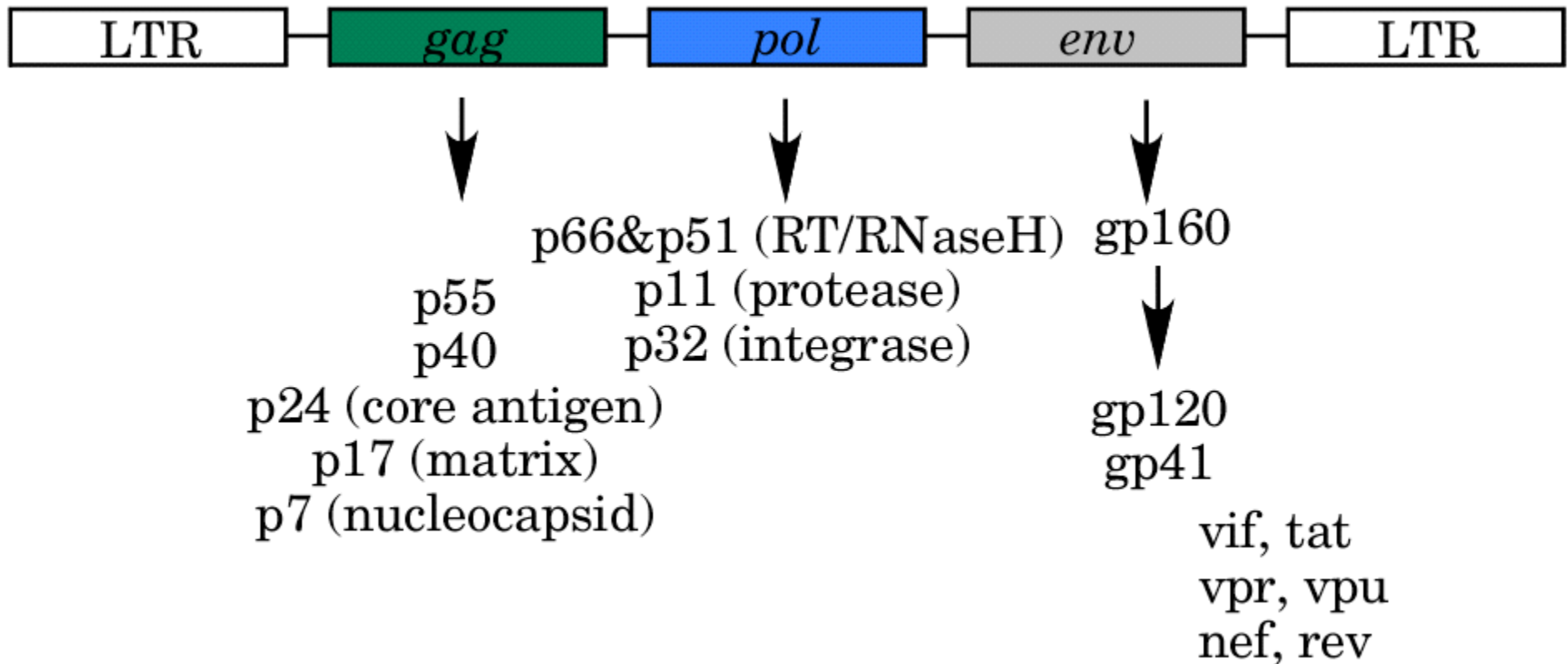


Sialic acid

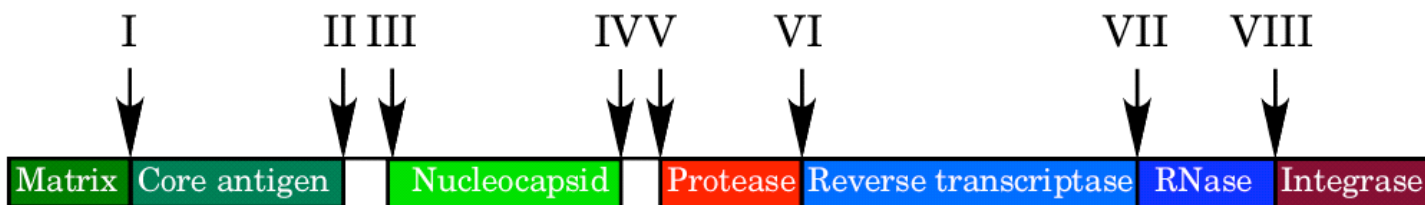
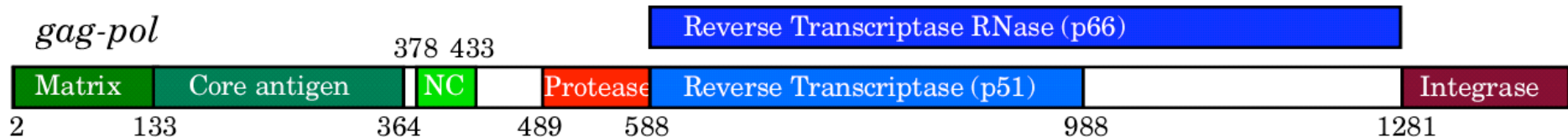
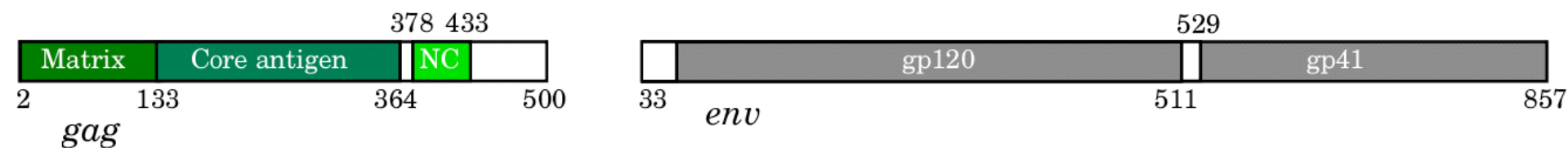
Retroviruses



Human Immunodeficiency Virus (HIV)

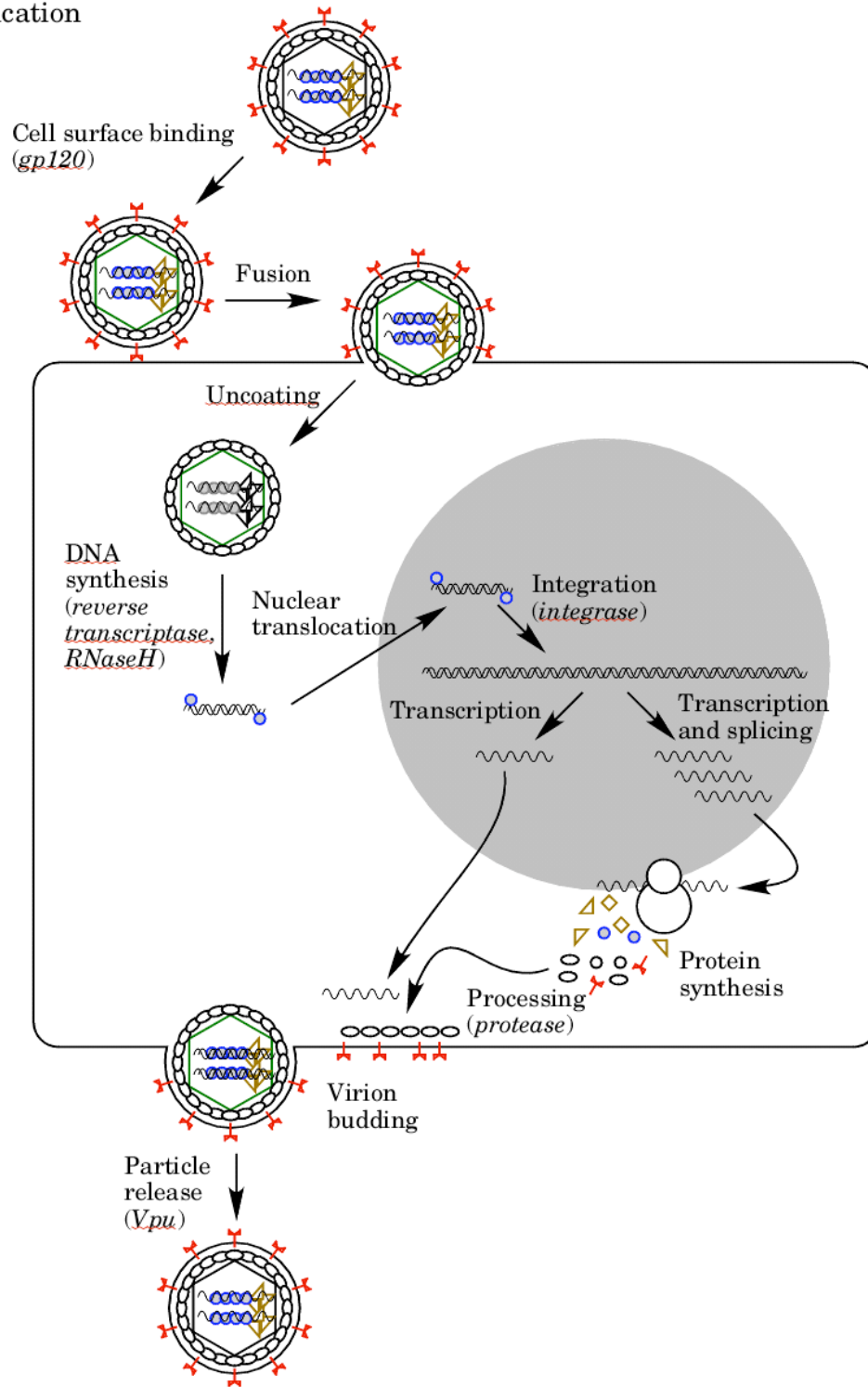


HIV



	P ₄	P ₃	P ₂	P ₁	P ₁ '	P ₂ '	P ₃ '	P ₄ '
I	-Ser	-Gln	-Asn	-Tyr	-Pro	-Ile	-Val	-Gln
II	-Ala	-Arg	-Val	-Leu	-Ala	-Glu	-Ala	-Met
III	-Ala	-Thr	-Ile	-Met	-Met	-Gln	-Arg	-Gly
IV	-Pro	-Gly	-Asn	-Phe	-Leu	-Gln	-Ser	-Arg
V	-Ser	-Phe	-Asn	-Phe	-Pro	-Gln	-Ile	-Thr
VI	-Thr	-Leu	-Asn	-Phe	-Pro	-Ile	-Ser	-Pro
VII	-Ala	-Glu	-Thr	-Phe	-Tyr	-Val	-Asp	-Gly
VIII	-Arg	-Lys	-Ile	-Leu	-Phe	-Leu	-Asp	-Gly

HIV Replication



Thymidine Kinase

