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ANTIVIRAL AGENTS

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4(a) DNA Synthesis Inhibitors

DNA Polymerase Inhibitors

Incorporated into DNA chain by DNA polymerase causing termination

i. Nucleoside analogues

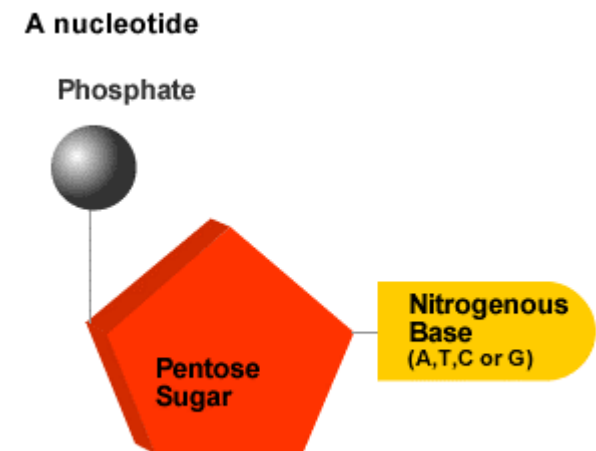
Acyclovir, Trifluridine, Idoxuridine

ii. Nucleotide analogues

Cidofovir

iii. Pyrophosphate analogues:

Foscarnet, Phosphonoacetic acid



Reverse Transcriptase Inhibitors

Block DNA synthesis from RNA by **Reverse transcriptase**
aka RNA dependent DNA polymerase

i. *Nucleoside Reverse Transcriptase Inhibitors (NRTIs):*

Zidovudine, Lamivudine, Abacavir, Didanosine

ii. *Nucleotide RT Inhibitors (NtRTIs)*

Tenofovir, Adefovir

iii. *Non-Nucleoside RT Inhibitors*

Nevirapine, Efavirenz, Etravirine, Delavirdine

4(c). RNA Synthesis Inhibitors

Block action of RNA polymerase preventing synthesis of RNA

❖ Ribavirin

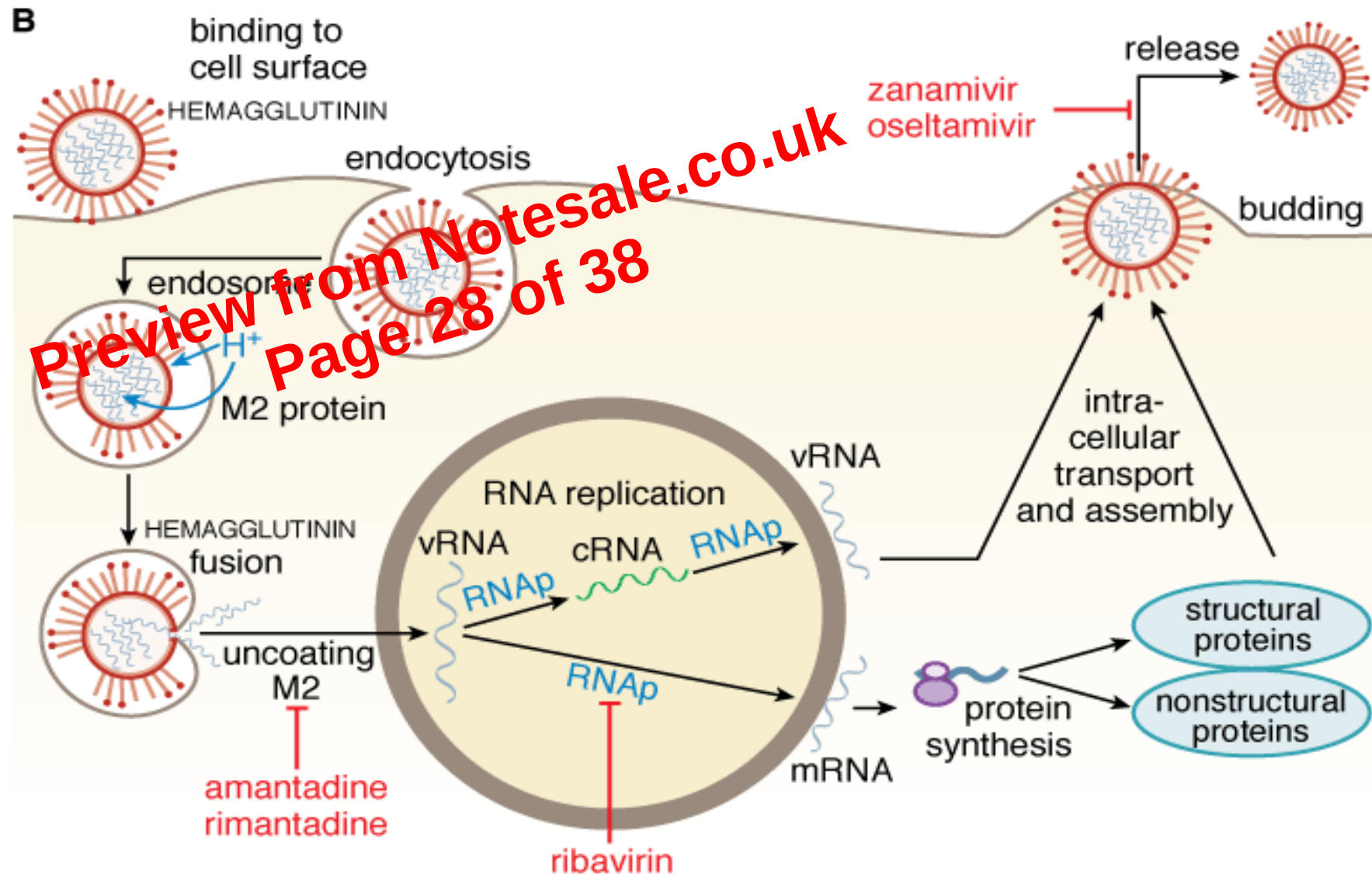
- Inhibits RNA-dependent **RNA polymerase** of Influenza viruses
- Prevents capping of mRNA in Influenza viruses
- Activity against: Poliovirus, RSV

❖ Sofosbuvir

- Inhibits Hepatitis C virus **RNA Polymerase**

❖ Vidarabine

- Interferes with mRNA capping



Source: Brunton LL, Chabner BA, Knollmann BC: *Goodman & Gilman's The Pharmacological Basis of Therapeutics*, 12th Edition: www.accessmedicine.com
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Interferon: Mechanism of action

Bind specific cellular receptors to induce genetic expression through the JAK-STAT pathway leading to synthesis of several proteins which have antiviral activity through inhibition of:

- ❖ Transcription
- ❖ Translation
- ❖ Post-translational modification of protein
- ❖ Virus maturation
- ❖ Virus release