1 | Viruses

VirusesAcellular Macromolecular Assemblies Viruses…

- …contain protein coat called **capsid**
- …use DNA or RNA, but not both
- …are obligate parasites that could only replicate within host

Assembled and mature viral particles => **virions**. They usually have three different parts

1. Capsid — the protein coat
2. Genetic material — what they are transmitting/replicating
3. Occationally outside lipid layer

=> Viruses exist on the nanometre scale, but they are difference in share and size

1.1 | Structure of Viruses

See KBhBIO101StructureOfViruses

1.2 | Types of Viruses

Two types of viruses: the prokaryote-frequenting **DNA viruses** which replicates themselves using DNA and the eukaryote-frequenting **RNA viruses** which replicates themselves using RNA.

See KBhBIO101TypesOfViruses

1.3 | Virus Lifecycle + Infectivity

How do viruses infect people? Basically, they come into your body, hijack the KBhBIO101CentralDogma system of your body, and leverage it to create more copies of itself.

To see more about this, head on over to KBhBIO101ViralInfection. This is important and cool.

1.4 | Viral Genetic Shift + Viral Genetic Drift

Viruses modulate themselves, which make them particularly hard to deal with as their DNA may change every so often to the bewilderment of the immune system.

There are two ways by which this happens — genetic Shift and Genetic Drift. See KBhBIO101ViralGeneticModulationMuta

1.5 | Retroviruses

Viruses are special types of viruses that not only infect people, but also hijack cell DNA by inserting their own genetic code into them. They are particularly terrible because they cause the infected cell and its offsprings to inadventantly create more copies of the virus slowly as daily KBhBIO101CentralDogma happens.

See KBhBIO101Retroviruses

1.6 | **Viruses damaging host**

Viruses are terrible because they damage the infected host cells/tissues, namely by…

- Reducing gene expression capacity (hogging up the KBhBIO101CentralDogma channels to achieve higher probability of replication)
- Depleting cellular resources (needing to transcribe a thing that eat you)
- Causing cell lysis (to explode, which is bad)
- Promoting tumorigenisis — cancer (damaging promoters, among others)
- Creating damaging immunological response (over-compensate to kill viruses a la Ebola)

1.7 | **Preventing Viruses**

See KBhBIO101AntiViralDrugs