

Course: Virology

Properties of Virus

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VIRUS

Latin for 'slimy liquid' or 'poison'

virus contd....

- A virus is an obligate **intracellular parasite** containing genetic material surrounded by protein
- Virus particles can only be observed by an **electron microscope**

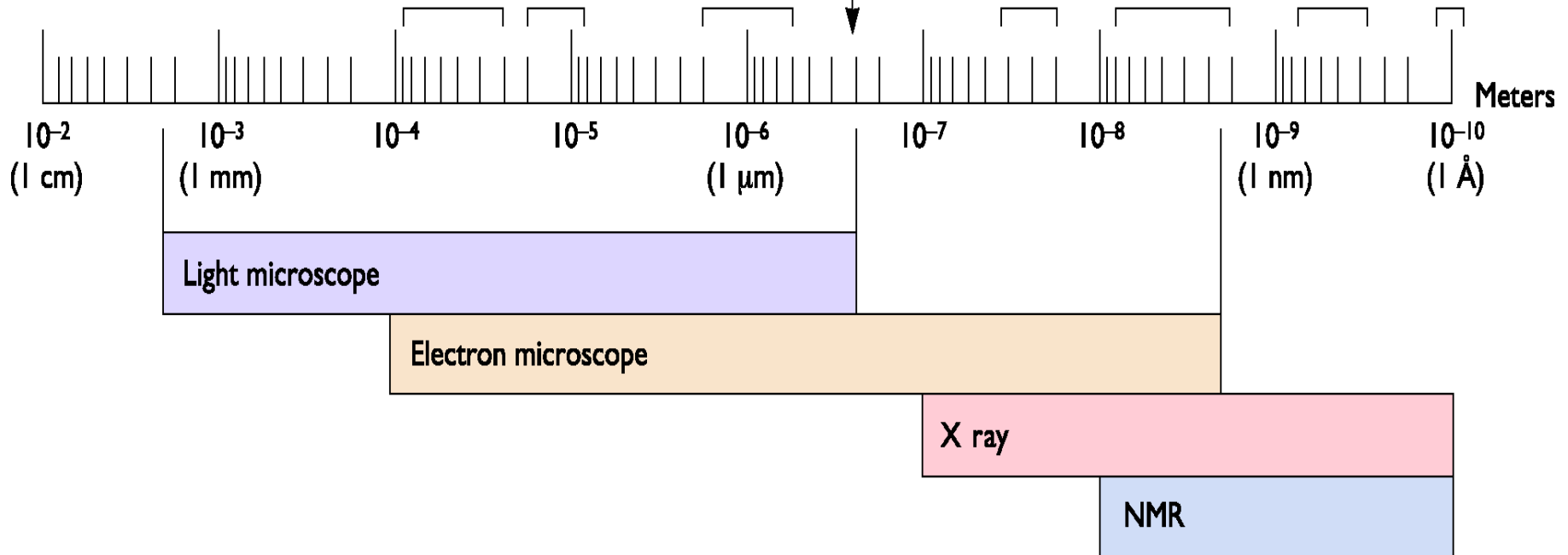
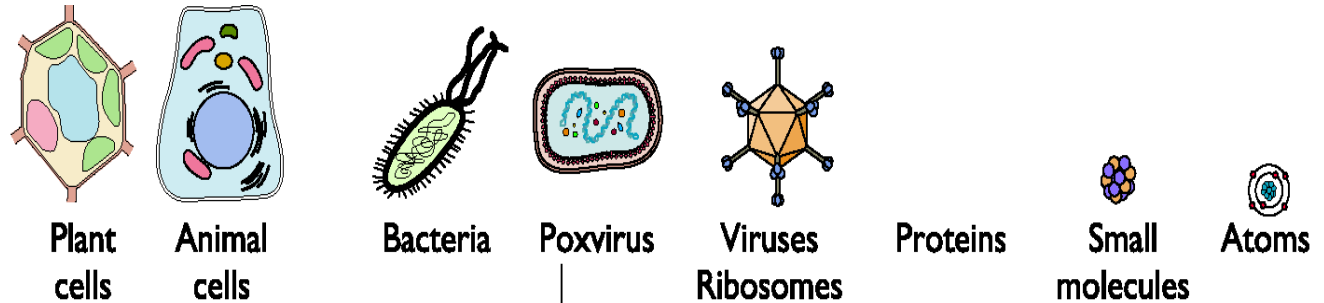
virus contd...

- **Recognizing the shape, size, and structure of different viruses is critical to the study of disease**
 - **Viruses have an inner core of nucleic acid surrounded by protein coat known as an envelope**
 - **Most viruses range in sizes from 20 – 250 nanometers**

Viral Properties

- **Viruses are inert (nucleoprotein) filterable Agents**
- **Viruses are obligate intracellular parasites**
- **Viruses cannot make energy or proteins independent of a host cell**
- **Viral genome are RNA or DNA but not both.**
- **Viruses have a naked capsid or envelope with attached proteins**
- **Viruses do not have the genetic capability to multiply by division.**

The size of viruses



**Whether virus is living or
non-living agents?**

Living or Non-Living cont....

- Viruses are **inert outside** living host cells – in this sense they are **not considered to be living organisms.**
- However, **once virus enter a host cell,** the viral nucleic acids become active and viral multiplication results – in this sense, **viruses are alive.**

Living or Non-Living cont....

From a clinical point of view, viruses can be considered alive because they cause infection and disease, just as pathogenic bacteria, fungi and protozoan do.

Living or Non-Living cont....

In general, a virus may be regarded as an exceptionally complex aggregation of non-living chemicals or as an exceptionally simple living microorganism .

Thank you