Adenoviruses

Adenoviruses (members of the family ***Adenoviridae***) are medium-sized (90–100 nm), nonenveloped (without an outer lipid bilayer) viruseswith an icosahedral nucleocapsid containing a double stranded DNA genome. Their name derives from their initial isolation from human adenoids in 1953.

Different types/serotypes are associated with different conditions:

- respiratory disease (mainly species HAdV-B and C)
- conjunctivitis (HAdV-B and D)
- gastroenteritis (HAdV-F types 40, 41, HAdV-G type 52)
- obesity or adipogenesis

Adenoviruses possess a linear dsDNA genome and are able to replicate in the nucleus of vertebrate cells using the host's replication machiner ,its stable to chemical or physical agents and adverse pH conditions, allowing for prolonged survival outside of the body and water. Adenoviruses are spread primarily via respiratory droplets, however they can also be spread by fecal routes.

Most infections with adenovirus result in infections of the upper respiratory tract. Adenovirus infections often show up as conjunctivitis, tonsillitis (which may look exactly like strep throat and cannot be distinguished from strep except by throat culture), an ear infection, or croup. Adenoviruses, types 40 and 41 can also cause gastroenteritis.[21] A combination of conjunctivitis and tonsillitis is particularly common with adenovirus infections. Some children (especially small ones) can develop adenovirus bronchiolitis or pneumonia, both of which can be severe. In babies, adenoviruses can also cause coughing fits that look almost exactly like whooping cough. Adenoviruses can also cause viral meningitis or encephalitis. Rarely, adenovirus can cause hemorrhagic cystitis (inflammation of the urinary bladder—a form of urinary tract infection—with blood in the urine).Most people recover from adenovirus infections by themselves, but people with immunodeficiency sometimes die of adenovirus infections, and—rarely—even previously healthy people can die of these infections

Parvovirus

Parvoviruses are linear, nonsegmented, single-stranded DNA viruses, with an average genome size of 5-6 kb. They are classified as group II viruses in the Baltimore

classification of viruses. Parvoviruses are among the smallest viruses (hence the name, from Latin *parvus* meaning small) and are 23–28 nm in diameter .

Parvoviruses can cause disease in some animals, including starfish and humans. Because most of these viruses require actively dividing cells to replicate, the type of tissue infected varies with the age of the animal. The gastrointestinal tract and lymphatic system can be affected at any age, leading to vomiting, diarrhea, and immunosuppression,

Parvovirus B19, which causes fifth disease in humans, is a member of the genus *Erythrovirus* of the *Parvoviridae*.

Arbovirus is an informal name used to refer to any viruses that are transmitted by arthropod vectors. The word *arbovirus* is an acronym (**AR**thropod-**BO**rne virus). The word *tibovirus* (**TI**ck-**BO**rne virus) is sometimes used to more specifically describe viruses transmitted by ticks, a superorder within the arthropods.

Arboviruses can affect both animals, including humans, and plants. In humans, symptoms of arbovirus infection generally occur 3–15 days after exposure to the virus and last 3 or 4 days. The most common clinical features of infection are fever, headache, and malaise, but encephalitis and hemorrhagic fever may also occur.

An **oncovirus** is a virus that can cause cancer. This term originated from studies of acutely transforming retroviruses in the 1950–60s, often called oncornaviruses to denote their RNA virus origin. It now refers to any virus with a DNA or RNA genome causing cancer and is synonymous with "tumor virus" or "cancer virus". The vast majority of human and animal viruses do not cause cancer, probably because of longstanding co-evolution between the virus and its host. Oncoviruses have been important not only in epidemiology, but also in investigations of cell cycle control mechanisms such as the Retinoblastoma protein.

Tumor viruses come in a variety of forms: Viruses with a DNA genome, such as adenovirus, and viruses with an RNA genome, like the Hepatitis C virus (HCV), can cause cancers, as can retroviruses having both DNA and RNA genomes (Human T-lymphotropic virus and hepatitis B virus, which normally replicates as a mixed double and single-stranded DNA virus but also has a retroviral replication component). In many cases, tumor viruses do not cause cancer in their native hosts but only in dead-end species.