

# Glossary

## Abbreviations

- AI: ..... Artificial Insemination
- AB: ..... Antibody
- BHV: ..... Bovine herpes virus
- BVDV: ..... Bovine Viral Diarrhea Virus
- cp: ..... cytopathic (cell damaging)
- DNA: ..... desoxyribonucleic acid
- EIA: ..... Enzyme Immuno Assay
- ncp: ..... non cytopathic (not cell damaging)
- PI: ..... persistently infected
- MLV: ..... modified live vaccine
- OIE: ..... World Organization for Animal Health
- ORF: ..... open reading frame
- PCR: ..... Polymerase Chain Reaction
- RNA: ..... Ribonucleic acid
- VD: ..... Viral diarrhea
- VSF: ..... Vetsuisse Faculty

## Terms

- Angström unit of measurement, 1Å= 10<sup>-10</sup> m
- antibody Molecule produced by the immune system against infectious microorganisms. Antibodies specifically recognize antigens and help to eliminate them. Antibodies are composed of proteins and are found in various body fluids.
- antigen A foreign substance that induces an immune response. Certain structures on the molecule surface (epitopes) react with the bodies immune products.
- attenuate to weaken a pathogen (most often used for vaccine strains that are less virulent and potent than the original field strain)
- biotype BVDV occurs as two different biotypes: cytopathic and non cytopathic. The cell damaging effect refers exclusively to cells in a cell culture. The biotype does not account for the virulence of a pathogen. Solely virus of the non-cytopathic biotype causes persistent infections. ncp BVDV is more frequent in nature.
- BVD hemorrhagic syndrome Severe BVD infection, often caused by a virulent ncp BVDV of genotype 2. Destruction of blood platelets (thrombocytes) leads to a coagulopathy (e.g. bleeding from eyes and nose). Other possible symptoms are fever, bloody diarrhea and inappetence.
- capsid The capsid is a shell of virus-coded proteins, which encloses the viral genome. Since capsid and genome are closely associated, the complex is often referred to as nucleocapsid. The capsid's identical subunits are called capsomeres and are composed of multiple identical proteins themselves (however, unequal proteins may also make up capsomeres. Capsomeres are shaped like spheres or cylinders. The capsid protects the nucleic acid from degradation and, in naked viruses, attaches the virus to the host cell (adsorption). Virus capsids exist in 3 different forms: icosahedral, helical and complex.
- colostrum first milk, rich in maternal antibodies
- EDTA-blood Blood drugged with anticoagulant (Ethyldiaminetetraacetic acid).

- ELISA Enzyme-linked immuno-sorbent assay. ELISAs measure antigen-antibody binding quantitatively as well as qualitatively. Depending on the technique, antigens (hormones, enzymes etc.) or antibodies can be detected.
  
- envelope Viruses of certain families (the Flaviviridae among others, which include BVDV) are enclosed by a lipid bilayer derived from host cell membranes. These envelopes feature (trans)membrane proteins on their surface, so called spikes. The envelope protects the virus particle and allows binding to the host cell.
  
- eradication Extermination of a disease or a pathogen
  
- exposition State of being exposed to a pathogen
  
- Flaviviridae Virus family. Includes the genera Flavivirus, Pestivirus (including the species BVDV) and Hepacivirus.
  
- genome hereditary material
  
- genotype a group of genetically similar viruses
  
- immune evasion viral strategies aiming at circumventing the immune system
  
- immunotolerance Phenomenon, in which foreign substances are not recognized as such by the immune system. With BVD it occurs when fetuses are infected in utero before achieving immune competence. This immunotolerance is lifelong.
  
- inactivated here: killed, unable to replicate
  
- inapparent without symptoms
  
- interferon Low-molecular proteins, which inhibit virus replication in the cell
  
- intrauterine in the womb
  
- incidence number of new cases of illness during a defined time span in relation to the whole population
  
- lethality (lat. letalis = deadly) number of deaths in relation to the number of new cases of illness
  
- morbidity (lat. morbidus = sick) frequency of illness in a population
  
- mortality (lat. mortalitas = the state of being mortal/ death, a dying) death rate in a population
  
- nanometer unit of measurement; 1 nm = 10<sup>-9</sup>m.
  
- open reading frame DNA- or RNA-Sequence between a start-codon and a stop-codon. It can potentially be translated into a polypeptide.
  
- pathogenesis origin and development of a disease

- PCR Polymerase Chain Reaction. Molecular biological method for amplification of DNA sequences.
- peracute sudden and vehement onset of a disease, often fatal
- peroral through the mouth
- prevalence Number of individuals displaying a defined feature (e.g. an infection) in relation to the whole population. A seroprevalence of 60% (BVD in Switzerland) means, that 60% of the animals were seropositive at the time of the examination.
- polymerase an enzyme, which builds or degrades polymers (molecules consisting of a big number of identical parts)
- quasispecies Collectivity of genetically slightly different viruses that emerged from the same virus through mutation. They belong to the same subspecies.
- replication multiplication of virus in the cell
- receptor here: molecule at the cell surface that binds viruses
- RNA ribonucleic acid, contains the hereditary information in BVDV (and other RNA Viruses)
- Severe Acute BVD Severe acute BVD infection, often caused by a virulent ncp BVDV of genotype 2. The animals suffer from high fevers, pneumonia, diarrhea and reduced food intake. May be fatal.
- vaccine Substance that contains attenuated or killed pathogens or parts thereof. These pathogens trigger an immune response in the receptor organism, which protects also against the more potent field strains of the pathogen. Vaccines are a means of prophylaxis, not therapy.
- virulence disease-evoking power of a virus (or any microorganism)
- virus isolation Specific amplification of viruses in a suitable host system (e.g. cell culture, incubated egg, laboratory animal) in order to characterise and identify the pathogen.