

Behavior of waterborne pathogens (i.e. viruses, bacteria, and protozoa) in drinking water sources and treatment processes is investigated for the safe drinking water supply.

Behavior of waterborne pathogens in environmental water

- Investigation of occurrence and level of viruses, bacteria, and protozoa detected in drinking water sources
- Ecology of cyanobacteria causing odor and taste

Removal mechanisms of waterborne pathogens

- Investigation of removal properties or mechanisms of waterborne pathogens in treatment processes based on pilot- or bench-scale experiments in order to suggest more efficient operational methods and treatment systems

Quantitative microbial risk assessment (QMRA)

- Quantitative estimation of the infection risk associated with drinking water consumption
- Calculation of the removal and inactivation efficiencies required

Devices and techniques used in analyses or experiments

- Real-time PCR, digital PCR
- Next-generation sequencing
- Immunoassays (e.g., ELISA, immunostaining)
- Electron microscope

