



## Guidelines for Research Involving Viral Vectors: Adenovirus

Adenovirus. Adenoviruses are nonenveloped, icosahedral viruses that are specifically used to introduce exogenous DNA into cells. They have a cloning capacity, can be produced in high titers, and can infect a wide range of cell types. Adenovirus serotypes 2 and 5 are commonly used for creating recombinant viruses.

### Potential Health Hazards

Adenoviruses are effective at targeting the human respiratory and intestinal systems and can cause eye infections and the common cold. Replication-defective recombinant adenovirus have caused corneal and conjunctival damage.

### Modes of Transmission

Wild-type adenoviruses are spread directly by oral contact and droplets. They are indirectly spread by handkerchiefs, eating utensils and other articles freshly soiled with respiratory discharge of an infected person. It is possible for a person who is infected, but asymptomatic, to shed virus for many months or years.

### Laboratory Acquired Infections

There are reports of rare cases of illness caused by working in laboratories with clinical specimens. There is a theoretical risk of infection from exposure to laboratory cultures of wild type adenovirus or recombinant viruses. Transmission of adenoviruses can occur through ingestion, inhalation of aerosolized droplets, mucous membrane contact, and accidental injection (for example, as the result of a needlestick).

### Host Range

Humans and animals are the natural reservoirs for wild-type adenoviruses. Recombinant adenovirus vectors infect a variety of mammalian cell types, and some strains can transform cells in culture.

### Survival

Adenoviruses are unusually stable to chemical or physical agents and adverse pH conditions. They are very stable in the environment and can survive 3 to 8 weeks on environmental



- Any special handling requirements of soiled bedding/cages.  
ABSL2 carcasses are considered biohazardous and are incinerated.

\*Deviation from using a Class II BSC must be approved by the IBC and/or IACUC Committee

Animal use requests are made to the Institutional Animal Care and Use Committee (IACUC).

A complete copy of USA's Animal Biosafety (ABSE) Guidelines can be found at:

<https://southalabama.edu/departments/research/compliance/animalcare/animal.biosafety.guidelines.pdf>

## Recombinant Adenoviral Research

Protocols involving recombinant adenoviral vectors must be approved by the Institutional Biosafety Committee (IBC).

## Employee Exposure

Eye exposure Rinse eyes with eyewash for at least 15 minutes.

Skin exposure Cleanse the affected skin area immediately with surgical disinfectant soap, diluted Clorox (0.05%) or other approved disinfectant.

Report Incidents and Seek Treatment Report actual or suspected exposure incidents to your supervisor immediately. An online incident report must be completed within 72 hours of the incident. This form can be found at <https://jagasp2.southalabama.edu/incident/logon.aspx>  
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## Disinfectants

Disinfectants should be allowed a minimum of 20-30 minutes contact time. Use one of the following:

Sodium hypochlorite (use 1-10% dilution of fresh bleach)

5% Phenol

*Note: Alcohol is not an effective disinfectant against adenovirus.*

## Decontamination

Autoclave cultures for 30 minutes at 121°C or 250°F (15 lbs per square inch of steam pressure).

Disinfect work surfaces using an effective germicide (see above). This may be followed by an

alcohol wipe