



# Adenovirus Vector

## General Information

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Adenoviruses are medium-sized, non-enveloped viruses with double-stranded linear DNA. They are members of the family Adenoviridae and there are close to 100 different serotypes with over 40 being human pathogens. Adenoviral vectors are non-integrating and are a popular choice in gene therapy research due to their high transduction efficiencies, ability to infect many cell types, and high level of transgene expression.

## Host Range

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Humans

## Incubation Period

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2-14 days

## Survival Outside Host

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Can survive up to 3 months on dry surfaces.

## Laboratory Hazards

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Mucous membrane contact, inhalation of aerosols, ingestion, contaminated fomites

## Symptoms of Exposure

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Exposure to adenovirus can cause a wide range of symptoms including bronchitis (coughing, shortness of breath), sore throat, fever, diarrhea, and pink eye. Infections can be more severe in very young and immunocompromised individuals. **NOTE:** Adenoviral vectors do not have to be replication competent to cause corneal and conjunctival damage.

## Lab Acquired Infections (LAIs)

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At least 10 lab exposures with one resulting in a lab-acquired infection.

## Personal Protective Equipment

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Lab Coat



Gloves



Closed-toed Shoes



Eye Protection

## Disinfection & Inactivation

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10-20% bleach, 70% ethanol, glutaraldehyde, and peracetic acid. Can be inactivated by autoclaving (121°C

for 1 hour). Due to stable nature, complete disinfection is imperative.

## Waste Management

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Refer to [USC's Biological and Infectious Waste Management Plan](#).

## Lab Containment

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[Biosafety Level 2 \(BSL-2\)](#) for activities with materials and cultures known or reasonably expected to contain adenovirus.

## Animal Containment

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[Animal Biosafety Level 2 \(ABSL-2\)](#) for activities with experimentally infected animals.

## Medical Surveillance/Treatment

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**Surveillance:** presence of virus can be detected by immunoassays, PCR, immunofluorescence

**Prophylaxis:** none

**Vaccines:** none approved

**Treatment:** none usually required in healthy adults; antiviral drugs

## Spill Procedures

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See [USC Biological Spill Procedures](#)

## Exposure Procedures

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See [USC Protocol for Post Exposure Evaluation and Follow-up](#). Use of sharps should be strictly limited. All procedures with the potential for creating aerosols and droplets should be performed in a biosafety cabinet.

## References

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Public Health Agency of Canada (2011) Pathogen Safety Data Sheets: Infectious Substances – Adenovirus types 1, 2, 3, 4, 5 and 7. Pathogen Regulation Directorate, Public Health Agency of Canada

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SignaGen Laboratories. Adenovirus FAQs. <http://signagen.com/Adenovirus-FAQs>

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