Adeno-associated viral vector (AAV)

DESCRIPTION

AAV are members of the family *Parvoviridae*. They are nonenveloped viruses with a single-stranded linear DNA genome. AAV can only replicate in the presence of a helper virus (e.g., adenovirus, herpes simplex virus, cytomegalovirus, vaccinia virus).

PATHOGENICITY

There are no known health hazards associated with AAV and they are not known to cause disease in humans.

MODE OF TRANSMISSION

AAV are transmitted by inhalation of aerosolized droplets, by contact with mucosa, by parenteral injection and by ingestion.

LABORATORY CONTAINMENT REQUIREMENTS

- Recombinant AAV vector : **containment level 1**.
- Recombinant AAV vector in the presence of a helper virus : **containment level 2**.

ANIMAL RESEARCH FACILITY CONTAINMENT REQUIREMENTS

- Housing of animals infected with recombinant AAV vector : **containment level 1**.
- Housing of animals infected with recombinant AAV vector in the presence of a helper virus and/or the gene of interest coding for a toxin or an oncogene **: containment level 2**.

DISINFECTANTS

- 0,5 % sodium hypochlorite (1/10 dilution of bleach), 2 % glutaraldehyde and 0,25 % sodium dodecyl sulfate.
- Alcohols (ethyl and isopropyl) not effective.

PHYSICAL INACTIVATION

- Autoclave : 121°C, 30 minutes, 15 psi.

ADDITIONAL INFORMATION

- « *Laboratory Biosafety Guidelines* », Public Health Agency of Canada.
- « *Containment Standards for Veterinary Facilities* », Canadian Food Inspection Agency.
- *« Guidelines for Research Involving Recombinant DNA Molecules »*, National Institutes of Health.
- Web site of the *Comité universitaire de gestion des risques biologiques,* Université Laval. *http://www.ssp.ulaval.ca/matieres-dangereuses/risques-biologiques/*.