ICH WORKSHOP: Viral Shedding

Review of experience of shedding data for in vivo gene therapy

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Viral Shedding

Gene Therapy Products

patients

Viral Shedding into Patients' Blood, Urine, Feces, Sputum...

<in hospital>

???

???

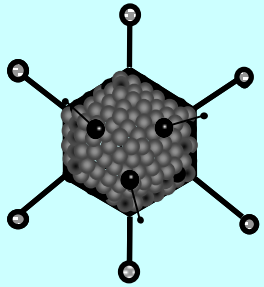
???

<into the environment >

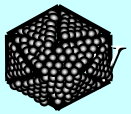
Impact of Viral Shedding

- Viral shedding risk
  - Depends on biodistribution and the biological activity of each vector
  - Depends on the route of administration, dose and so on
- How to test for viral shedding
- Risk of vector/virus from patients to 3rd-party should be dependent on:
  - biological activity of virus shed
  - viability of virus in the environment
- Measures to minimize the risk of viral shedding

Should all Viral Vectors be treated in the same way in relation to shedding?
Review of experience of shedding data for *in vivo* gene therapy



Adenovirus



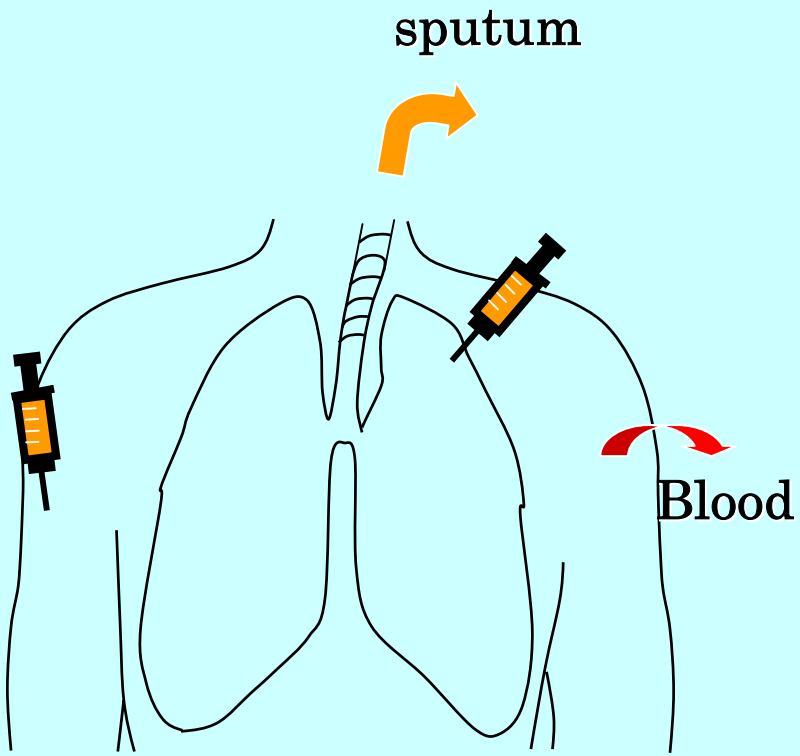
Adeno-Associated virus

Impact of viral shedding is dependent on:

- Property of virus
  - Biodistribution
- Route of administration
  - Systemic or local administration
  - *Ex vivo* or not
- Dose
  - High or low
  - Single dose or repeat doses

Seneca Valley virus (Picornavirus)

How to detect viral shedding



- Detection of viral shedding
  - PCR
    - sensitive and accurate
    - no correlation of infectivity
  - Infectivity assay
    - less sensitive
  - New method
    - Infectivity PCR

Measures to minimize the risk of viral shedding

- Patients in quarantine
- Study design of viral shedding
  - How long viral shedding is detected
  - Follow-up