

Xie, Q. et al. “Structure Determination of Adeno-Associated Virus 2 – Three Complete Virus Particles per Asymmetric Unit”

Supplementary Material

Early challenges arose from the biohazard level 2 classification of our samples that arose not only from the AAV being a human virus, but due to the fear of trace contamination by the human virus Adenovirus-2, used in propagating AAV (Biosafety in Microbiological and Biomedical Laboratories, U.S. Department of Health and Human Services, Public Health Service and Centers for Disease Control and Prevention and National Institutes of Health; US Government Printing Office, 4th edition, May 1999). With capillary mounting of crystals, it is possible to work above freezing point with little modification of standard protocols. *Cryo*-crystallography, needed in the case of such radiation-sensitive crystals, poses greater challenges, because standard procedures require samples that are frozen on a loop (Rodgers, D. W. (1994). *Structure* **2**, 1135-1140.). Exposure to the environment opens the possibilities of aerosol formation or spillage. Crystallographic data for biohazardous samples can be collected using X-ray instruments that are entirely contained within a biosafety laboratory, as at the CHESS F1 beam-line. An alternative was needed for the preliminary characterization of crystals that took place in our home laboratory. The containment apparatus shown below was designed and built to contain a loop-mounted crystal, the collimator, the goniostat and *cryo*-stream head. With the nitrogen stream, it was not possible to seal the unit, so it was run at negative pressure, drawing the

atmosphere with a fan through a HEPA filter. Sample-mounting access was available through side doors. The back contained a Mylar window to allow unimpeded passage of x-rays from collimator to detector. The entire apparatus was professionally certified as leak-proof BL2 and approved by the University Biosafety office.

