24 Factor VIII:C Assays in Cryoprecipitate

The assay conditions described in Section 23 are appropriate when test samples contain normal or near normal levels of FVIII:C. If the level is elevated above 150 IU/dl, the conditions normally need to be modified for the assay design to be valid.

The levels of FVIII:C in cryoprecipitate vary between individual donations, but are typically in the range of 200–1000 IU/dl. At these levels, the test material must be pre-diluted to reduce the concentration prior to assay. For most units of cryoprecipitate, a pre-dilution of 1 in 5 or 1 in 10 will reduce the concentration to a level such that the diluted material can then be used in the assay design described in Section 23 (i.e. the pre-diluted material is then further diluted 1/5, 1/10, 1/20 in assay buffer, as described).

If the cryoprecipitate is not pre-diluted to a suitable concentration, the requirements for a straight line through dilutions of test sample and for that line to be parallel to the calibration curve are unlikely to be met. Such an assay would then be invalidated, and the results would not be accurate.

The pre-dilution of cryoprecipitate should be completed immediately prior to the FVIII:C assay. Some centres use the buffer employed in the FVIII:C assay (e.g. Owren’s buffer or imidazole/glyoxide), whereas others use FVIII:C-deficient plasma for this purpose. In general, such pre-dilutions are likely to be more stable if prepared using FVIII:C-deficient plasma. Therefore, this is the preferred diluent.

The precision of FVIII assays on cryoprecipitate between centres is similar to the precision when plasma samples are tested (Jennings et al. 2009).

REFERENCE