CHAPTER 1 Cerebrospinal Fluid Cell Preparation

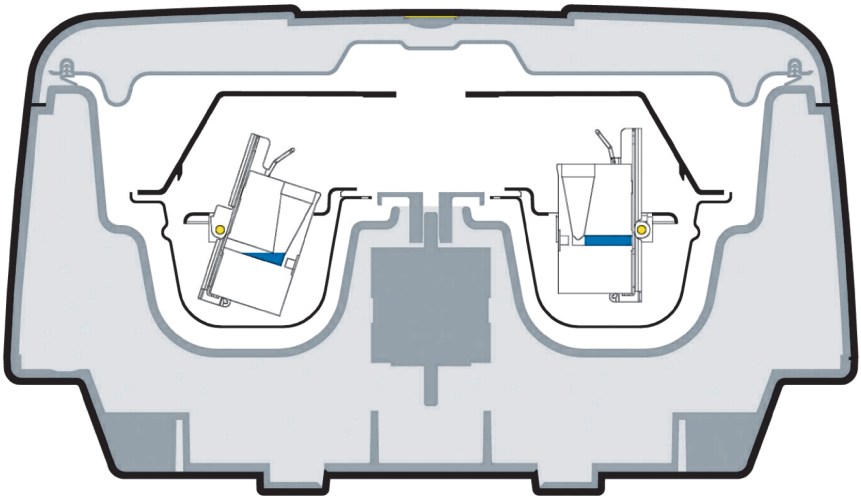
1.1 General Considerations

Since the cellular component of CSF obtained from the lumbar area is generally scant, an efficient method of concentrating this material is necessary. Furthermore, considerations regarding the selection of cytopreparation techniques include the potential for cell loss, the clarity of cellular detail, and the spectrum of stains offered. The most commonly utilized methods today are membrane filtration and cytocentrifugation.

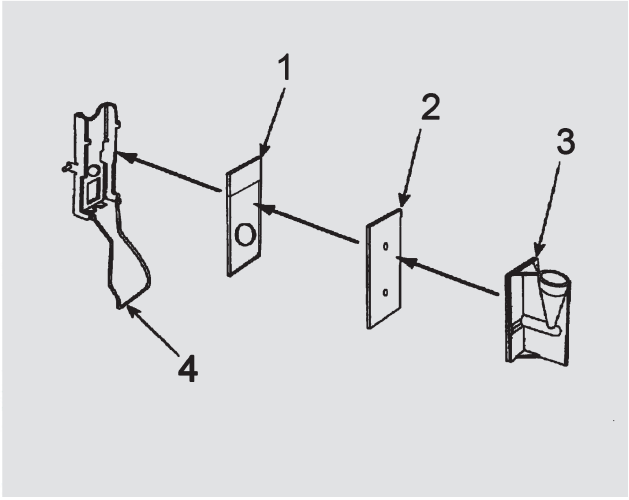
1 1.2 Cytocentrifugation

Of all the possible methods of transferring cells from CSF samples onto slides, most laboratories now use a cytospin apparatus, such as the Shandon cytocentrifuge (Fig. 1A, reprinted by kind permission of Thermo Shandon), which is efficient in terms of cell yield. The cytocentrifuge technique also allows use of virtually all types of fixation and staining, including the preparation of cells for immunocytochemistry, immunofluorescence and in situ hybridization. Because of the centrifugal force when in the running position, the cytofunnel will raise up in vertical position (right-hand side of the illustration). When the cytospin is not running the cytofunnel is loaded at an angle to prevent the specimen coming into contact with the filter card (left-hand side of the illustration; blue color, specimen). To load the slide clip with a re-useable sample chamber and filter card (Fig. 1B, reprinted by kind permission of Thermo Shandon) it is necessary to fit the glass slide (1), to fit the filter card (2), to fit the re-useable sample chamber (3), and finally to pull up the spring and press it into the two retaining hooks to hold the chamber in place (4). After running the cytospin, cytospin sample chambers are unloaded and samples are fixed as soon as possible to avoid autolysis. The specimen can now be stained and examined microscopically.

A



B



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Torzewski, M.; Lackner, K.J.; Bohl, J.; Sommer, C.

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