To be objective, it should be noted that analysis of stationary phase cell aging by CFE assay may be complicated by the fact that cultured cells should be first removed from the growth substrate by treatment with special agents (usually a mixture of trypsin and Versene solutions) that disrupts the calcium–protein bridges attaching the cells to the surface and then plated at a very low density into Petri dishes or culture plates with fresh medium. This procedure is fairly traumatic and may even be fatal, especially for "elderly" cells, and the scattering of data on their CFE may sharply increase at the late stages of cell survival in this model system.[62]

4.4 Interpretation of Data About the Impact of Geroprotectors on Viability of Cultured Cells in Cytogerontological Studies

Based on the data reviewed in the former section it could be assumed that the solution of problems related to evaluating the viability of cultured cells in cytogerontological experiments, with special emphasis placed on the problems associated with constructing of the survival curves for cultured cells in the stationary phase aging model, should ensure successful testing of potential geroprotectors in experiments based on this model as well as on some other cytogerontological model systems. However, the following questions (in addition to the questions formulated in the Introduction) regarding the interpretation of data obtained in such studies in application to humans, whose aging is of primary interest to us, remain open:

(1) Whether the factors (chemical or physical) that improve the viability of cultured cells should always slow down the aging of a multicellular organism, and *vice versa*?
(2) How important is it which criteria of cell viability are used in testing geroprotectors in cytogerontological experiments?
(3) How can the interpretation of results obtained in a study depend on the origin of cells that were used in this study?

We will try to answer these questions below.

When studying potential geroprotectors in cytogerontological experiments (*i.e.*, in experiments on cell cultures), we usually evaluate their effect on cell viability. However, the criteria of this viability, as already mentioned, may be fundamentally different depending on the theory of aging to which a specific researcher adheres. In particular, the concept according to which the aging of a multicellular organism is caused by the limited mitotic potential of the normal cells constituting this organism has been very popular for many years. For this reason, the compounds that increase the proliferative potential (the "Hayflick limit") of such cells *in vitro* were automatically regarded as geroprotectors (it should be emphasized that we are talking about the proliferative *potential* of cells but not about their proliferative *activity*; unfortunately, these