

Cell identification

Introduction

After the establishment of a new cell line, it is usually necessary to verify that the culture really contains the required cell type – some cell types that would eventually contaminate the primary culture, perhaps only in a small amount, can so-called overgrow and completely displace other cells.

Methods

The first step in identifying cells is undoubtedly **monitoring cell morphology'**, but this is not always completely reliable: on the one hand, most cells change their appearance during culture growth, on the other hand, a number of cell types look very similar and are practically cannot be distinguished microscopically. Therefore, it is necessary to use other methods:

Immunochemical methods

Detection of cell type-specific antigens is among the most reliable and should be the method of choice.

Analysis of expressed enzymes and isozymes

Some cells show typical enzymatic activity, or contain certain specific isoenzymes. Characteristic reactions, specific inhibitors, immunochemical, electrophoretic and chromatographic methods are used for proof.

Tissue culture authentication

With established cultures, it is necessary to verify from time to time that the original line is still being worked with - on the one hand, as a result of the aging of the line, a significant change can occur in the cultured cells (dedifferentiation or, conversely, differentiation, various cell transformations), on the other hand, the culture can be contaminated due to incorrect laboratory practice another line that will subsequently outgrow it. Such verification is referred to as ``authentication of tissue culture *and, in addition to the methods mentioned above, some molecular techniques (DNA-fingerprinting, analysis of microsatellite sequences, etc.) are used for it.*