

Authentication of cell lines

Purpose of the service

In the tested cell line, a profile of genomic DNA is carried out using fragmentation analysis. The profile is then compared to a previously published reference profile. After comparison of the two profiles, it is revealed if the profile of the tested cell line is identical with the reference profile or if it contains contamination from a different cell line.

In research experiments in life sciences, using a misidentified or cross-contaminated cell line concludes in faulty experimental data and unreproducible results.

Cell phenotype often changes when the cell passage number is too high. It is estimated that 18 - 36 % of all cell lines used for research experiments were misidentified or cross-contaminated by a different cell line.

Some scientific journals recommend that cell lines are authenticated prior to publishing an article.

¹ J.R. Masters, J.A. Thomson, B. Daly-Burns, Y.A. Reid, W.G. Dirks, P. Packer, L.H. Toji, T. Ohno, H. Tanabe, C.F. Arlett, L.R. Kelland, M. Harrison, A. Virmani, T.H. Ward, K.L. Ayres and P.G. Debenham: Short tandem repeat profiling provides an international reference standard for human cell lines; PNAS 2001; 98(14): 8012-8017; doi:10.1073/pnas.121616198

Principle of the test

Using a forensic kit, selected autosomal polymorphisms are amplified in a multiplex PCR. The polymorphic fragments of DNA are then separated in capillary electrophoresis. The same method is applied as well in forensic testing.

Available products

Cat. No.	Product
1860	Authentication of cell line - human
1861	Authentication of cell line - human, DNA extraction
1862	Human cell line authentication, sample type: cell suspension, LabCard
1863	Human cell line authentication, sample type: extracted DNA, LabCard

Parameters of the test

The test can comprise:

- comparison of the cell line to the reference profile
- comparison of two cell lines (e.g. differing in cell passage number)
- detection of contamination by a different cell line

Recommendation when cell lines should be tested

- prior to the start of a long-term experiment and after it finishes
- when a contamination is suspected
- prior to storage of a cell line

Requirements for a material to be tested

Customer provides us either with an extracted genomic DNA or a yielded cell pellet.

Output of the test

We provide you with a protocol in English

Sample delivery

If the delivery time does not exceed 24 hours, send samples chilled to **2 to 8 °C** (on wet ice), otherwise we recommend delivery on dry ice.

