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Human and animal cell cultures represent important tools for experimental research, production of bioactive agents and therapeutic medical applications. However, the common use of cell lines in the fields of cell biology, biotechnology, biomedicine, pharmacy, toxicology and others has brought about a high incidence of cross contaminations (mix-ups of different cell lines) and unrecognized microbiological contaminations mainly caused by bacteria (particularly mycoplasmas, picture below) and viruses.

The use of false or contaminated cell lines can be detrimental for a research project or the purity and safety of cell culture products.

Based on our extensive experience with cell cultures, we found a double-digit percentage of contaminated cell cultures. Thus, the rigorous testing of cell cultures is inevitable.

### Services and Techniques

- **Animal Cell Line Species Identification**

  Today verification of animal species relies on a rapid and accurate identification technique of animal cell lines by DNA Barcoding of Cytochrome C Oxidase I (COI). Isolation of mitochondrial DNA, PCR amplification and direct sequencing of the product followed by analysis in the Barcoding of Life Database (BoLD) is established at DSMZ. DNA barcodes are now available for numerous taxa including all species of insects, fish, amphibia, birds and mammals.

- **Authentication of Human Cell Lines**

  To let researcher check the identity of their cell lines - a requirement increasingly imposed by scientific journals and funding agencies - the DSMZ offers an authentication service for human cell lines based on STR-DNA typing.

- **Online STR Analysis**

  The DSMZ, together with the ATCC, JCRB and RIKEN repositories, have generated comprehensive databases of short tandem repeats (STR) cell line profiles. Use of a consensus STR panel now enables multi-center interactive searches online to authenticate human cell cultures.

- **Mycoplasma Detection**

  We offer testing of cell cultures for the presence of mycoplasmas by the highly sensitive assays broth-agar microbiological culture and PCR.

- **Mycoplasma Elimination**

  To eradicate mycoplasmas from irreplaceable cell cultures the department of human and animal cell lines offers to treat contaminated cell cultures with different antibiotics in parallel approaches.

- **Virus Testing**

  Regulatory agencies might request assessment and categorization of cell cultures with respect to biological safety levels. To that end, the DSMZ offers to demonstrate the presence or absence of selected human pathogenic viruses which are relevant for cell culture technology.

- **Safe Deposit of Human and Animal Cell Lines**

  The DSMZ offers storage of ampoules with human or animal cell cultures in liquid nitrogen in confidentiality.

For more detailed information on the methods applied, on the material to be delivered for the tests and for downloading submission forms, please refer to our website: [http://www.dsmz.de/services/services-human-and-animal-cell-lines.html](http://www.dsmz.de/services/services-human-and-animal-cell-lines.html)