

SERVICES - CRYOBANK AND MONOCLONAL ANTIBODIES



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The new cryobank (capacity over 350,000 samples) was established in January 2007 and is used for storage of cell lines, mouse sperm, and embryos in liquid nitrogen. The storage containers are supplied with liquid nitrogen from a tank (capacity of 6,000 litres). It is equipped with an independent power supply in case of emergency. The samples can be stored in liquid nitrogen or nitrogen vapour. The operation, diagnostics and maintenance of storage containers is under fully automated control. The operating parameters of storage containers and safety of the whole unit are checked by a monitoring system with GSM and web interface outputs.

The monoclonal antibody service laboratory performs mycoplasma cell culture testing and provides complete service for preparation of new monoclonal antibodies, including: immunization of mice, fusion of mouse spleen cells with myeloma tumour cells, primary antibody production screening (using ELISA test), cloning by limiting dilution or agar cloning, secondary antibody production screening (using e.g. ELISA), production of monoclonal antibodies into the cell culture supernatants, generation of a hybridoma cell bank.



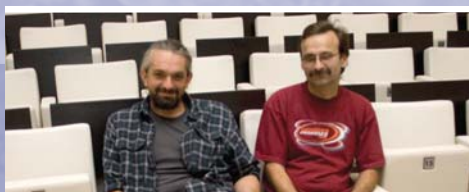
Liquid nitrogen storage vessels



mAb production laboratory



SERVICES – FLOW CYTOMETRY AND LIGHT MICROSCOPY



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The facility provides methodological and instrumental background for flow cytometric and fluorescence microscopic techniques. At present, the facility is equipped with two analysers – BD FACSCalibur and BD LSRII cytometers. The LSRII instrument has been upgraded with the yellow 561-nm laser and is now a four-laser (405-nm, 488-nm, 561-nm and 633-nm) instrument with 14 fluorescence detectors. This upgrade, together with a large set of dichroic mirrors and bandpass filters, made this instrument very flexible and capable to cover most of the flow cytometry applications. Both instruments possess an HTS loader for high-throughput analysis of samples directly from 96- or 384-well plates. The facility is also equipped with an AutoMACS Pro (Miltenyi Biotec) magnetic separator for automatic rapid sorting of cells, as well as cell culture facilities.

The facility is running three microscopes: confocal microscope with superfast scanner (Leica TCS SP5 AOBSTANDEM), Leica inverted fluorescent microscope with TIRF illumination (Leica), wide-field inverted fluorescence microscope with laser excitation (DeltaVision Core). This state-of-art instrumentation allows facility users to use a wide range of microscopy techniques including FRET, FRAP, time-lapse experiments, membrane studies, vesicle transport studies, etc.

Several offline analysis workstations are also available in the facility, for analysis of flow cytometric (FlowJo) and image data (SoftWorx Suite, Imaris, Leica Application Suite Advanced Fluorescence, ImageJ).

