

Chapter 1
Web Text Box 4

Selecting the cells you want:
Fluorescence activated cell sorting

As the images in In Depth box 1.1 (book page 6) show, different cell types glow different colors when labeled with specific dyes and antibodies. This technology is applied in fluorescence activated cell sorting (FACS for short). Labeled cells are suspended in medium at low density, so that when the liquid is forced out of a nozzle in individual small droplets each droplet contains no more than one cell. The droplet is given an electric charge, which allows the machine, by changing the voltage on guidance plates, to send it to one of two or more collection reservoirs on the basis of its fluorescence color.

FACS has for many years been a standard tool in the research laboratory where, for example, one type of cell can be purified from a tissue on the basis of its surface antigens. The technique is likely to be increasingly used in clinical practice. In the United States, FACS is used to sort sperm into those carrying an X chromosome and those carrying a Y to allow parents to choose the sex of their child. To read more on the ethics of sex determination, see

http://www.hfea.gov.uk/docs/Final_sex_selection_main_report.pdf.