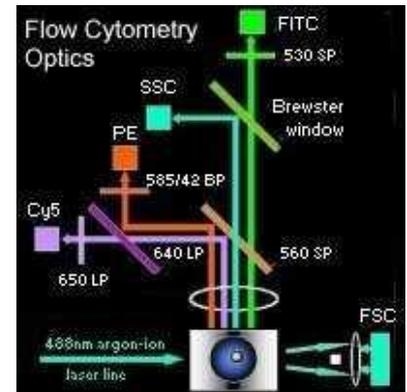


Flow cytometry

Flow cytometry identifies and counts specific populations of cells. First, the cells are labelled with a fluorescent dye, and a monoclonal antibody. Then, the flow cytometer uses lasers, to generate fluorescence, and filters and detectors to measure forward and side scatter, as the cells flow past the light beam.

Many of the potential new medicines being developed by pharma and biotech companies are targeted at specific populations of cells. Flow cytometry can assess the pharmacodynamic effects of those medicines in phase 1 studies.

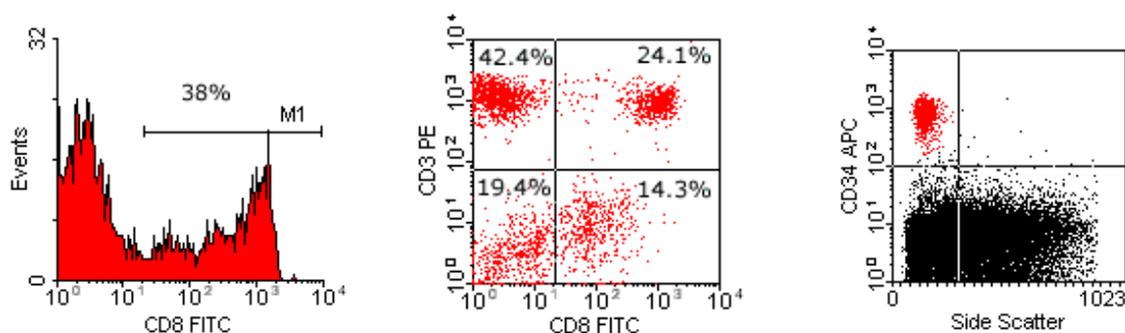


We have substantial experience of phase 1 studies using flow cytometry to measure:

- changes in shape of eosinophils, neutrophils or monocytes;
- platelet activation, using PAC-1 and CD62 markers;
- reticulated platelets;
- platelet VASP activation;
- lymphocyte subsets, using monoclonal antibodies to various cell surface antigens; or
- CD11b expression on neutrophils.



We use a Becton-Dickinson FACSCalibur, 4-colour, dual-laser, flow cytometer with autoloader. Our IMag Cell Separation System augments the power of our flow cytometer, by enriching and depleting specific cell populations.



Flow cytometry. Left-hand plot shows CD8 expression by peripheral blood (PB) lymphocytes. 38% of events fall between the marker boundaries, and are therefore regarded as CD8+ve. The centre plot depicts the relationship between CD8 and the T-cell marker CD3. The CD8+ve population contains two CD3-defined sub-populations (CD3+ve and CD3–ve); the CD3–ve fraction (lower right quadrant) expresses CD8 at a lower intensity than the CD3+ve fraction (upper right quadrant). The right-hand plot shows a population of CD34+ve ‘stem cells’ plotted against side scatter.

By collaborating with sponsors, our trained staff can transfer flow cytometry technology from pre-clinical research to phase 1.

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