

THE LIVER GROUP

CHAIRMAN'S REPORT IN RESPECT OF THE ACCOUNTS FOR THE YEAR ENDING 31 DECEMBER 2005



We have had a year of steady progress toward our aim to improve the treatment of liver disease through understanding and harnessing the natural biology of liver cells.

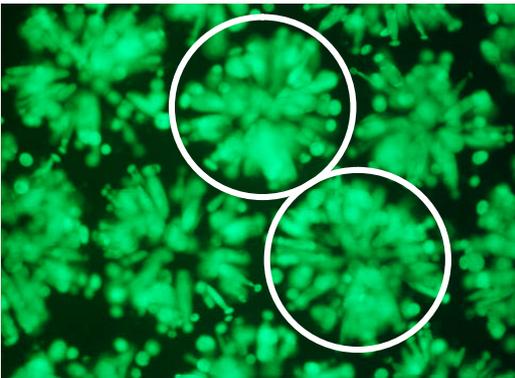
Our supporters know that the major aim is to create an artificial liver – a system outside the body which would serve to replace the function of a diseased and failing liver, buying time to allow natural healing to occur. For the last few years we have concentrated on the essential component of that artificial liver cell – a compact collection of living cells, the hepatocytes, the factory cells of the liver, growing in a tiny spherical capsule.

This system, which we have developed, provides important advances over previous approaches to providing the living cell component of an artificial liver.



The capsules are convenient, and can be grown in one laboratory and readily moved to where they would be needed at the bedside. They can be frozen and thawed with recovery of the function of the cells, and in many ways the function of each cell is as good in this artificial environment as in the body. We have shown in the laboratory that these cells will provide useful function when used in a chamber perfused with liver-failure blood, mimicking the role they will have to play in a bio-artificial liver at the bedside. Analysing the requirements of these cells in these artificial capsules, understanding the changes in their metabolism as they adapt to growth in this artificial milieu, and perfecting the

environment so that the milieu in which they grow is as natural as possible, is an area of steady progress in the unit. We have invested in new equipment and can now culture billions and billions of these cells in sterile bioreactors.



We have also developed ways of making “designer” cells to complement our current system, which specifically perform one particular function. This has proved useful in allowing us to mimic the full repertoire of liver function in the bioreactor.

As always we are immensely grateful to our supporters. The funds provided from the Liver Group are all devoted to our aim of improving the treatment of liver disease. At a time when the core funding in Universities and government agencies is under increasing strain, it is our supporters who make scientific progress possible.

Living cells in alginate capsules

Humphrey Hodgson *FRCP, F Med Sci.*
Chairman