Charity's first move is drug investment

Within a month of its inauguration, the United Kingdom's largest cancer research charity, Cancer Research UK, has committed £1 million to the clinical development of a compound to treat abdominal cancers. The investment has also helped to save the British biotechnology company developing the drug, Antisoma, from financial ruin.

Nurse and McVie share their just desserts.

The charity was formed in February when the Imperial Cancer Research Fund (ICRF) merged with the Cancer Research Campaign. The ICRF had originally developed the drug in question, called pemtumomab, and licensed it to Antisoma. The product is in Phase III trials for ovarian cancer and in Phase II for gastric cancer, but the company had only £5.2m in cash at the end of 2001, barely enough to last it through the coming summer and not enough to continue ongoing Phase III ovarian cancer trials. Antisoma has asked its shareholders to supply £22m, of which Cancer Research UK is taking up £1m.

The high-profile former heads of the two separate research charities, Sir Paul Nurse and Gordon McVie, are to be joint director-generals of the new group. Cancer Research UK will spend £130m directly on research each year, outstripping the government's expenditure on cancer research, which is estimated to be around £30m.

According to Diana Garnham, chief executive of the Association of Medical Research Charities, "Charities can't legally invest in a company for the purpose of commercial gain, but they can invest in order to see a product come through to commercial fruition and thus benefit patients." The alternative policy of licensing a product to a pharmaceutical company is unsatisfactory, because the licensee firm often fails to develop the product for anti-competitive reasons, she adds.

Cancer Research UK has similar interests in several other drug development companies, for example, Cyclacel of Dundee and KuDOS of Cambridge. The charity granted intellectual property to both firms when they were formed, receiving in return shares instead of cash. It now owns just over 5% of each company, worth about £4.5m in total.

Pemtumomab is a murine monoclonal antibody (HMFG1), directed against the so-called PEM marker, which is known to be overexpressed in epithelial tumor cells such as ovarian and gastric cancers. In its therapeutic form, the antibody is conjugated the β-emitting radioisotope, yttrium-90. It is injected intraperitoneally after surgery and chemotherapy, and is thought to target and destroy any remaining micrometastases, so preventing or delaying relapse.

Antisoma's finance director, Raymond Spencer, says that early trials of pemtumomab—formerly called Theragyn—found that the treatment doubled the 5-year survival rates of ovarian cancer patients in remission after conventional treatment from 40% to 80%. He estimates that about 85,000 people each year could be eligible for the treatment in Europe, Japan and the United States, making it worth up to $500m in annual sales. It has orphan drug status in both the US and the EU.

However, Antisoma ran into problems last June, when the US Food and Drug Administration (FDA) began taking a more cautious approach to biologicals, especially radioimmunotherapeutics. The FDA said it needed proof of pemtumomab's efficacy against ovarian cancer to the $P = 0.01$ statistical level, instead of the usual $P = 0.05$. This requires a trial expansion from 300 to 420 subjects, costing Antisoma an extra £10m.

The pharmaceutical giant Abbott, to whom Antisoma has granted marketing rights for pemtumomab in return for development funding and milestone payments, refused to fund the trial extension but will still pay $51m to Antisoma if the drug is approved. Antisoma plans to continue clinical development of three other compounds: Therex is a humanized version of the pemtumomab antibody, under development as an anti-cancer vaccine. DMXAA is a small-molecule compound that attacks tumor blood vessels. TheraFab is another Y90-based radioimmunotherapeutic being developed as an adjunct to radiotherapy against common epithelial cancers.

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Stem cell scientist moves to Singapore

Another prominent scientist has been wooed by the highly lucrative research funds and amiable climate of Singapore. Alan Colman, head of research at Edinburgh-based PPL Therapeutics, who together with scientists from the Roslin Institute spearheaded the team that created Dolly the sheep, will move to Singapore this summer to develop embryonic stem (ES) cell treatments for Type 2 diabetes.

Colman joins a small but growing number of leading investigators who have been recruited to Singapore as part of the country's initiative to invest heavily in scientific research as a route to growing the economy (*Nature Med.* **7**, 1169; 2001). He will join the stem cell company, ES Cell, which was started by researchers from Monash University in Australia and has a financial base in Singapore. The company owns ES cell lines that have been approved by the American government as being suitable for research with federal funding.


Colman to move to Asia.

Colman's first task will be to put together a team of scientists proficient in ES cell techniques, which is not a straightforward mission since he acknowledges the limited R&D manpower within the country. He then plans to develop new ES cell lines since the existing lines are thought, like many others around the world, to be contaminated with products from mouse ES cells which were used to feed the human cells. New cells grown with human feeder material will avoid the possibility of rejection if used therapeutically.

Colman made the decision to leave the UK prior to the recent House of Lords ruling that research on human embryos no longer be restricted to fertility studies (see page 315). Nevertheless, he says that the funding available in Singapore outstrips that which he could obtain in the UK for such work. PPL plans to restrict its R&D focus to the production of proteins derived from the milk of animals and to divest its ES cell interests.

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