Biological Resources Unit

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The Biological Resources Unit at the CRI facilitates the work of research groups that use mouse models to understand the genetic causes of cancer by providing technical advice and expertise in animal care and use.

Cancer is a complex disease which requires scientific advancements in a variety of biomedical research disciplines in order to be better understood, diagnosed and treated. Relevant research results can be obtained with the combined use of computers, *in vitro* experiments, studies done on patients and in human populations, and *in vivo* mouse models.

Each year in the UK, more than a quarter of a million people are diagnosed with cancer. Doctors and researchers estimate that about one in three of us will get some form of cancer at some point in our lives. Transgenic mice develop cancers that very closely resemble the cognate human cancer in terms of both genetic make-up and behaviour. These mice are used to develop new methods for early diagnosis, and to understand the determinants of response or resistance to new treatments.

As part of Cancer Research UK's multidisciplinary approach to beat cancer, the Biological Resources Unit's primary role is to ensure a consistent, uniform and high standard of animal welfare and to offer quality *in vivo* research support to CRI scientists. In order to achieve this, the BRU provides an optimal environment for animal model housing and maintains the highest pathogen-free standards. We provide technical support, training, equipment and resources to achieve research objectives, constantly monitoring the quality and performance of services and resources, and providing a safe working environment for the staff. The facility is able to offer training in aseptic and surgical techniques to researchers working in the BRU, as well as advice on animal purchase, husbandry and handling.

Other areas where research support is offered include: advice on the selection of an appropriate genetically modified mouse model; experimental design; generation and selection of animal models; electronic record keeping and information handling, colony management, and performance of regulated procedures. To ensure that all Home Office regulations are met, the Unit acts as a Home Office liaison, helping with annual returns and also advising researchers on project and personal licence applications and amendments.

The transgenic services available include: embryo re-derivation, embryo/germ cell cryopreservation, DNA pronuclear injection, gene targeting, blastocyst injection and derivation of new embryonic stem cell lines. In order to achieve research aims, the BRU has a wide range of facilities available from IVC equipped animal holding rooms, a quarantine area, a biohazard area and basic procedure rooms; to a necropsy room and a surgery suite.

The CRI recognises and encourages the development of research alternatives which do not involve the use of *in vivo* models, and is constantly developing cost-effective and efficient working practices that minimise animal usage. However, at present there are many questions in oncology research which can be answered only by the study of cancer development in animal models.