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## **BBSRC's position on research using genetically modified animals**

The following sets out the position of the Biotechnology and Biological Sciences Research Council (BBSRC) on research using genetically modified animals.

### **BBSRC funds and supports the use of GM as a laboratory tool**

A large part of BBSRC-funded research carried out using GM animals is aimed at understanding the basic biology of animals, including humans. GM animals are an important laboratory tool for characterising the normal function of genes and the proteins for which they code. They can also contribute to advancing understanding of animal health and welfare, disease prevention methods and disease treatments. New knowledge of the basic biology of animals also helps us to better understand the biology of a healthy human and underpins research into prevention and treatment of human diseases.

GM animals used in this way are always housed in contained conditions and represent an experimental resource never intended for release into the environment.

### **BBSRC funds and supports research that tests the feasibility of producing GM livestock and other animals with specific beneficial traits**

BBSRC's funding committees make decisions based on the scientific excellence and strategic relevance of applications for funding\*. We consider it important to fund research that provides a range of technological options that can be applied to the challenges that we face as a society. To this end, we fund research into both GM and non-GM technologies that could be used to introduce new and beneficial traits into existing breeds of farm and other animals.

For example, research into the genetic control of disease resistance might include the use of GM animals as a laboratory tool. The knowledge generated might then make it easier to breed animals using conventional breeding that are resistant to certain diseases. In other instances using conventional techniques may be scientifically inefficient or impossible and GM could provide the only opportunity to introduce traits for improved disease resistance.

The use of GM technology in animals intended for release is still early in its development and it is difficult to predict how it might be used in the future. However, there are a small number of instances where it is already being applied, in livestock for example. The United States' Food and Drug Administration (FDA) has recently determined that a GM salmon line would be safe for human consumption in the US. The fish, intended to be used in aquaculture, have been genetically modified to increase their growth rate. Approval to allow the fish to be marketed for human consumption in the US has not yet been given. Enviropig, GM pigs that have been engineered so that they are able to digest phosphates, are also awaiting FDA approval. Pigs cannot normally digest phosphates so additives are usually required to supplement their diet and excess phosphates in their excrement can cause damage to the environment. In a non-livestock context, GM insects can be modified so that we can control their population size and thus reduce their impact as crop pests or as disease vectors e.g. mosquitoes and malaria.

### **Regulation and accountability**

BBSRC ONLY supports the use of animals in scientific research when strict conditions are met. Those conditions apply equally to non-GM and GM animals and are outlined in our position statement on the use of animals in research

([http://www.bbsrc.ac.uk/web/FILES/Policies/animals\\_in\\_research.pdf](http://www.bbsrc.ac.uk/web/FILES/Policies/animals_in_research.pdf)).

BBSRC supports, and has confidence in, the UK regulatory framework for research using animals, which includes research using GM animals. This research is essential if we are to provide solid impartial scientific evidence for regulators, the wider public and industry on the welfare, performance and impact of GM animals that could be used for commercial purposes.

BBSRC recognises the need to be as open and transparent as possible about the research we support with public money and is committed to public dialogue and engagement around that research. Details of our research grants, including any industrial or other commercial co-funding, are published on our website. We also have a responsibility to enable the optimal and successful application of the outcomes of the excellent research we fund. BBSRC must ensure the widest benefit to society and the economy both within and beyond the UK (<http://www.bbsrc.ac.uk/organisation/policies/position/policy/knowledge-exchange-commercialisation.aspx>). We hold the view that specific commercial or not-for-profit applications of research into the genetic modification of animals for use outside of the laboratory should be assessed on a case by case basis. This should include consideration of the relative benefits and costs of the application to different sectors of society, to the animals themselves and to the environment as well as wider social, technical, economic and political issues.

\* Committees additionally consider whether any social or ethical issues could be raised by the research; and these are addressed by BBSRC's independent Bioscience for Society Strategy Panel. This Panel, together with other BBSRC Strategy Panels, helps to inform BBSRC's overall strategy.