

Report on UK publicly funded research relating to microbial, antibiotic resistance in relation to the safety of food

Area of research interest: [Antimicrobial resistance](#)

The Microbiological Safety of Food Funders Group (MSFFG) has produced a new report in a series that provides an overview of publicly funded research relating to microbiological safety of food. This March 2007 report reviews publicly funded research related to microbial antibiotic resistance in relation to the safety of food. It comprises research funded by the member organisations of the MSFFG, and covers a total of 48 projects over the period from 1990 to the end of 2006.

Antibiotic resistance is the term used to describe the ability of a bacterium to resist the effects of antibiotics and therefore to survive and multiply in their presence. Antibiotics are substances used to treat infectious illnesses in humans and animals. Certain antibiotics have in the past been used, at low concentrations, as growth promoters in farm animals, leading to enhanced weight gain and productivity: Such usage has been now been prohibited within the EU.

As a result of the use of antibiotics in human and animal health, there has been a significant development of antibiotic resistance in bacteria which cause illness in humans and, separately, in animals. The majority of the resistance seen in bacteria that cause human infections is thought to be due to the use of antibiotics in human medicine. However, the concern of research in this report is whether there is a link between the occurrence of antibiotic-resistant bacteria in farm animals and the occurrence of antibiotic-resistant bacteria in humans by transfer of such resistance through the food supply chain.

This is a complex area of research, and while it is established that the use of antibiotics leads to the development of antibiotic-resistant bacteria, there is a relative lack of data demonstrating transmission of antibiotic resistant bacteria from farm animals to humans through the food chain. The evidence suggests that there may be a link, but that it is probably only a minor contributor to the problem of the occurrence of antibiotic-resistant bacteria in humans, which is generally unrelated to the food-supply chain.

The MSFFG is a cross-representational body involving bodies who fund microbiological research in the area of food safety. Membership includes representatives from the Food Standards Agency; the Department for Environment; Food and Rural Affairs; the Biotechnology and Biological Sciences Research Council; the Department of Health; the Department of Agriculture and Rural Development, Northern Ireland; the Environment Agency; the Food Safety Promotion Board; the Health Protection Agency; the Meat and Livestock Commission; the Medical Research Council; and the Scottish Executive's Environment and Rural Affairs Department, Health Department and Science and Research Group. The Group's terms of reference are:

'To assist the co-ordination of publicly funded research and development on the microbiological safety of the food chain with a view to informing the R and D [Research and Development] effort, identifying gaps and overlaps, and providing reports as appropriate.'

Research report

England, Northern Ireland and Wales

PDF

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