**Animal health**

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Budget:

up to £2 million for projects in this priority area through a standard research grant from the Biotechnology and Biological Sciences Research Council (BBSRC)

Duration:

the standard research grant is an ongoing scheme - projects can last up to five years

Partners involved:

Biotechnology and Biological Sciences Research Council (BBSRC)

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This funding priority covers diseases that undermine the sustainability of the livestock, poultry, aquaculture, equine or apiculture industries, or that affect international trade in animals for food or other purposes.

Research will inform:

* fundamental understanding of host, pathogen and their interactions
* development of intervention strategies (for example development of effective vaccines, novel diagnostics or breeding for disease resistance or tolerance) that will lead to the prevention, control or eradication of current or emerging or re-emerging animal diseases.

For this funding priority, diseases include:

* infections by viral, bacterial, protozoal or fungal pathogens, and multifactorial diseases
* infestations by ‘pests’, that is internal (helminth) or external (arthropod) parasites
* vector borne diseases
* foodborne and other infections of zoonotic origin with implications for public health that are carried by farmed animals and other domesticated species, which in most cases do not necessarily have a significant impact on animal health.

Studies of vertebrate or invertebrate wildlife reservoirs or vectors of infection are only included if they focus on the role of wild animals in the transmission, or maintenance of disease in the target species, and not on the nature or incidence of disease in the wildlife host.

Working with other funders, multidisciplinary research underpinning the ‘One Health’ concept is encouraged for infectious diseases of zoonotic origin. For the purposes of this priority, One Health is defined as a collaborative approach to combat infectious disease of zoonotic origin by drawing on a common pool of scientific knowledge from multiple disciplines to improve the health and wellbeing of animals and humans in their environment.

Understanding some wider animal infectious disease issues – for example pathogenesis, transmission, and the role of the gut microbiome in maintaining health and any potential health impacts of agricultural intensification – is included in this priority area.

Research into infectious diseases can be pursued through the study of the pathogen, its host or the host’s environment, or by addressing combinations of these aspects of the disease system.

Proposals are sought for multidisciplinary projects that would exploit advances in laboratory, field-based or in silico approaches to improve understanding, at the cellular, individual animal or population levels, of the host-pathogen interface or its relationship with the host animal’s environment.

Research aimed at developing novel strategies to combat disease, in particular underpinning the development of next generation vaccines, is welcomed, as are systems-based studies that integrate host/pathogen studies with the epidemiology, and population dynamics, of disease.

The increasing challenge of antimicrobial resistance (including anthelmintic resistance) requiring the development of mitigation strategies is covered by the [combatting antimicrobial resistance](https://www.ukri.org/our-work/browse-our-areas-of-investment-and-support/bbsrc-research-to-combat-antimicrobial-resistance/) priority. Issues of livestock breeding and management not related to disease are covered under the [sustainably enhancing agricultural production](https://www.ukri.org/our-work/browse-our-areas-of-investment-and-support/sustainably-enhancing-agricultural-production/) priority.

### Impact

Translational opportunities for the outputs to impact on policy (including implications for human health) of government departments and agencies or be taken up by industry (including vaccine development and breeding companies) should be explored, as should the potential for international partnerships. Impacts on training and the UK skills base should be considered.

### Requirements

For research aimed at developing strategies to combat disease – for example, through developing next generation vaccines – working with industrial partners is strongly recommended.

If your proposal addresses the One Health concept and involves other funders you must discuss it with the BBSRC Office before you submit it.

Diseases of non-farmed animals are usually excluded from this funding priority. But diseases in animals for which a strong case can be made for a significant contribution to the UK economy, or domesticated animals when disease poses a zoonotic threat might be eligible for this funding priority. If you are unclear about which animal species are included, contact the BBSRC Office.

Animal health is a key area that relates to our strategic priorities in [agriculture and food security](https://www.ukri.org/our-work/browse-our-areas-of-investment-and-support/bioscience-for-sustainable-agriculture-and-food/) and [bioscience for health](https://www.ukri.org/our-work/browse-our-areas-of-investment-and-support/bioscience-for-an-integrated-understanding-of-health/).

The focus of the animal health priority is to support fundamental and strategic research leading to the development of intervention strategies for combatting endemic and exotic infectious diseases (including vector borne and zoonotic disease) that reduce the health and welfare of:

* animals farmed for food production in the UK (and where appropriate, in the international context)
* other domesticated animals of importance to the UK economy.

### Outputs and impacts

Outputs from an increased understanding of the pathogen, host and host’s environment will lead to the generation of knowledge to control endemic, exotic and zoonotic diseases of farmed and other managed animals.

Impacts will include improvements to the health and welfare of managed animals, increased economic resilience to livestock diseases, and more sustainable food production.