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Livestock associated MRSA found at a farm in East Anglia

The Animal Health and Veterinary Laboratories Agency (AHVLA) have identified the presence of Livestock-Associated Methicillin Resistant *Staphylococcus aureus* (LA-MRSA) in poultry on a farm in East Anglia.

Steve Wearne, Director of Policy at the Food Standards Agency said:

Any risk of contracting MRSA through meat from animals with these bacteria is very low when usual good hygiene and thorough cooking practices are observed. All poultry should be handled hygienically and cooked thoroughly to destroy any bacteria that may be present.

Professor Angela Kearns, Head of the Staphylococcus Reference service at Public Health England said:

There are many different strains of MRSA that cause illness in people but this is not one of the strains that we are overly concerned about given the very low number of clinical infections that have been seen in people.

This strain of bacteria is relatively widespread in livestock in Europe, including countries from which meat is regularly sourced by the UK. There are no known cases of people contracting MRSA from eating meat.

How bacteria survive antibacterial treatment

The mechanism by which some bacteria are able to survive antibacterial treatment has been revealed for the first time by Hebrew University of Jerusalem researchers. Their work could pave the way for new ways to control such bacteria.

In addition to the known phenomenon by which some bacteria achieve resistance to antibiotics through mutation, there are other types of bacteria, known as "persistent bacteria," which are not resistant to the antibiotics but simply continue to exist in a dormant or inactive state while exposed to antibacterial treatment. These bacteria later "awaken" when that treatment is over, resuming their detrimental tasks, presenting a dilemma as to how to deal with them. .

Until now, it had been known that there is a connection between these kind of bacteria and the naturally occurring toxin HipA in the bacteria, but scientists did not know the cellular target of this toxin and how its activity triggers dormancy of the bacteria.

Now, the Hebrew University researchers, led by Prof. Gadi Glaser of the Faculty of Medicine and Prof. Nathalie Balaban of the Racah Institute of Physics, have been able to demonstrate how this comes about. Their research showed that when antibiotics attack these bacteria, the HipA toxin

disrupts the chemical "messaging" process necessary for nutrients to build proteins. This is interpreted by the bacteria as a "hunger signal" and sends them into an inactive state, (dormancy) in which they are able to survive until the antibacterial treatment is over and they can resume their harmful activity.

The research on persistent bacteria has been conducted in Prof. Balaban's lab for several years, focusing on the development of a biophysical understanding of the phenomenon. It will be combined with other work being done in Prof. Glaser's laboratory focusing on combating persistent bacteria, in the hope of leading to more effective treatment for bacterial infections.

Research into Mechanically separated meat

The Food Standards Agency is inviting tenders to carry out a microbial evaluation of poultry and pork Mechanically Separated Meat (MSM) compared with fresh cuts of meat, meat preparations and minced meat products.

Background

Current European Union legislation (Regulation (EC) No. 853/2004) describes two types of MSM. Techniques that do not alter the structure of the bones produce a product informally known as 'Type 1 MSM', where the calcium content is not significantly higher than that of minced meat. All other processes produce a product informally known as 'Type 2 MSM'.

Depending on the precise nature of the raw material used, low pressure processes may produce products classified as 'Type 1 MSM' or as meat preparations. Meat preparations are defined in the legislation as 'fresh meat, including meat that has been reduced to fragments, which has had foodstuffs, seasonings or additives added to it or which has undergone processes

insufficient to modify the internal muscle fibre structure of the meat and thus to eliminate the characteristics of fresh meat'.

About the project

It is important to perform microbial studies to determine the safety of MSM compared with other meat products. This will aid in the assessment of whether current restrictions on the use of MSM are appropriate and proportionate for the protection of public health.

This project will expand on work already carried out for the FSA and will involve microbial data collection to identify the types and abundance of microbes present in MSM. This will enable the factors affecting microbiological quality to be evaluated. This should include a range of microorganisms, including *Campylobacter* and *Salmonella*. Samples will be tested at every stage of the production, chilling, freezing and storage process, enabling the identification of microbiological changes that occur during processing, which will affect final meat safety. This process will be repeated for fresh cuts of meat, meat preparations and minced meat products so that a comparison with MSM can be achieved.

Are Women's handbags dirtier than toilets?

In a study carried out by Maulori Cabral, Professor at the Institute of Microbiology, Federal University of Rio de Janeiro (UFRJ), it has been revealed that hand cream, lipstick and make-up kits are the dirtiest items that women carry in their handbags.

Despite the eye catching headline, it is acknowledged that the bacteria are predominantly harmless skin flora as opposed to the potentially pathogenic bacteria of faecal origin which can be isolated from toilets.