Levels of AMR E. coli in UK retail meat remain low

Year 3 of the survey was carried out between January and December 2017 during which 314 beef and 310 pork samples were purchased from retail premises in England, Scotland, Wales and Northern Ireland and tested for specific types of AMR E. coli.

The survey generates baseline data on certain types of AMR E. coli found on retail meat in the UK, which will subsequently inform our assessment of the risks and our next steps to reducing exposure to AMR.

What the results show

Overall, results showed that less than 1% of the samples were positive for ESBL or AmpC E. coli, which are specific types of AMR. These results are similar to what was found in Year 1 of the survey. However, one beef sample was found to be contaminated with an E. coli containing the mcr-1 gene which confers resistance to the antibiotic colistin.

FSA's Head of Microbiological Risk Assessment, Paul Cook said:

> 'This is thought to be the first discovery of an mcr-1 positive E. coli from retail beef in the UK. Although the meat came from outside the UK, further testing indicated no contamination with this E.coli on other samples and at this stage we have not been able to pinpoint the source of the contamination. However, a risk assessment has been carried out and we want to make it clear that the risk to public health is very low.
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> 'Tackling AMR is a significant priority for the FSA and across UK Government. This survey allows us to monitor certain AMR E. coli trends over time, but also compares the UK situation with that of other EU Member States. In the recently published 2015 EU report, the UK compared favourably to results from other European countries.'

These findings have been collected on behalf of the European Commission as part of an EU-wide seven-year surveillance study. The data is fed back to the European Commission on a yearly basis and reported in the EU Summary Report on Antimicrobial Resistance.

How to reduce the risk of AMR

The risk of acquiring AMR related infections through the handling and eating of contaminated meat is very low if you follow good hygiene and cooking practices. We advise that cooking, chilling, cleaning and avoiding cross-contamination when handling raw meat will help minimise the risk and spread of AMR.

Plasmids and colistin

The mcr-1 gene is found on a piece of DNA called a plasmid. Plasmids are naturally able to pass from one bacterial cell to another, even if they are of different species. This enables AMR to spread more easily. The mcr-1 gene can also make bacteria resistant to colistin.

Colistin is an antibiotic from the 50s which fell out of favour due to its side-effects. However, it remains one of the antibiotics of last resort for people with multi-resistant infections caused by certain species of bacteria.

From 2016, testing for colistin resistance has been included in the EU harmonised AMR survey.

Find out more about AMR.