Whole genome sequencing shows promise in fight against AMR

The use of whole genome sequencing can improve the way antimicrobial resistance (AMR) is monitored in food and animals, EFSA says in a new report published today. Ahead of the revised legislation on AMR monitoring that is due to come into force in 2021, EFSA suggests that these methods could gradually be introduced into Member State monitoring activities.

Using whole genome sequencing, experts can identify resistant genes in bacteria as opposed to current phenotypical methods which test bacteria for resistance to specific antibiotics. This not only has the potential to predict AMR more efficiently but also generates a large amount of data which can be used for other epidemiological studies and analysis.

EFSA’s report also highlights the need to monitor AMR in seafood, about which little is known. This is linked to the recent expansion of aquaculture production and the increase in imported products to the EU.

Experts stress the importance of understanding how AMR emerges and spreads in the environment where food is produced or processed – an area that requires more investigation and upon which EFSA will soon start working.

Finally, the report gives recommendations on sample sizes and suggests monitoring of resistance to antibiotics that have become relevant for public health and that are not currently monitored. This will allow better detection of possible new mechanisms of resistance. Monitoring is a critical component of the response to AMR and is one of the priorities of the EU action plan on AMR.

EFSA reviewed the way monitoring of AMR is currently done in the EU taking into account the latest scientific and technological developments.