In contrast to significantly high rate of fluoroquinolone resistance, Japan has reported a low and stable rate of macrolide resistance in *C. jejuni* and *C. coli* isolated from humans. However, the Japanese Veterinary Antimicrobial Resistance Monitoring System (JVARM) has revealed a general trend of rising erythromycin resistance in *Campylobacter*.

Our final goal is to show the correlation among erythromycin-resistant *Campylobacter* isolates from patients with enteritis, food-producing animals and foods (such as chicken meats) in the same geographic area in Japan. As the first step in the project, the aim of this study is to develop a selective medium for the isolation of erythromycin-resistant *Campylobacter* from materials.

Methods & Materials: The medium contains erythromycin as the selective agent in Preston Agar with 5% defibrinated sheep blood. Seventeen *Campylobacter* strains with erythromycin MICs (Minimum Inhibitory Concentrations) of 0.25 to 512 μg/ml were used as erythromycin-resistant or erythromycin-susceptible reference strains to examine the selectivity of this medium in this study. MICs were determined by Etest (bioMérieux). The strains were grown on the agar plates at 37 or 42 °C under microaerobic conditions.

Results: Among the reference strains, all the erythromycin-resistant *Campylobacter* strains grew well on the medium but the growth of the erythromycin-susceptible strains were significantly inhibited. Seventy two clinical isolates were examined and five strains were grew on the medium. Erythromycin MICs of the three of them were more than 256 μg/ml.

Conclusion: The results suggested that the medium allow the successful selection of erythromycin-resistant *Campylobacter* strains. The medium will useful efficient isolation of erythromycin-resistant *Campylobacter*.

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Antimicrobial resistance against critical antibiotics in the environment of intensive and organic Turkey farms

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Purpose: The high levels of antimicrobial resistance (AMR) against critical antibiotics in poultry environment are a cause for public health concern for the impact on human health. Intensive rearing conditions for turkeys seem to be associated with increased need for antimicrobial use. As antimicrobial treatments are mostly administered to turkeys via drinking water, we aim to quantify and compare AMR levels in indicator bacteria from turkeys' litter/faeces and drinking water.

Methods & Materials: AMR levels in indicator bacteria (*E. coli*) isolated from litter and from the drinking water pipeline were measured in 28 intensive turkey farms and in 4 organic turkey farms where antimicrobial use is restricted. Subsequently, a selection of 10 farms was categorized in 3 AMR groups: farms with 1) <50% (n = 3), 2) 50–60% (n = 5), or 3) >60% (n = 2) resistance to antibiotics. In all farms, 20 animals were bled for quantification of natural immunity parameters like serum bactericidal activity and lysozyme.

Results: AMR for a panel of 14 antibiotics was high both in turkey faeces and drinking water, particularly for critical antibiotics, e.g. 80% of isolates was resistant to Ampicillin, Ciprofloxacin and/or Streptomycin. Observed agreement between AMR in water and in litter ranged between 36% and 100% depending on the antibiotics in question. In organic farms, AMR prevalence was lower, but turkeys' immune response was significantly higher ($P < 0.001$) than in intensive farms. No significant associations were found between immunity and AMR groups.

Conclusion: AMR in intensive turkey production is higher than in organic production, but organic turkeys have higher levels of natural immunity. Moreover, an association between AMR in drinking water and litter exists for some antibiotics.

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Transport infectious substances category a as a high consequence dangerous goods with the potential for misuse in a terrorist event

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Purpose: The aim of this work is to analyze and compare the requirements for the transport Infectious Substances Category A in the ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road) and the norm CWA 15793:2011 Laboratory Biorisk Management with the objective of identifying the differences and limitations that may create a risk in the transport of infectious substances's transportation.

Methods & Materials: The international Dangerous Goods Regulations (ADR, IATA-DGR) Laboratory biosecurity guidance WHO and the CWA 15793:2011 were analyzed and compared.

Results: Dangerous Goods Regulation is, in general, not well known. The laboratories, companies or centers must have an internal control system to monitor and control the risk. However, most of the laboratories do not have a good control over their own infectious substances category A, during shipment. The main reason is for not considering the protection plan or safety provisions written and agreed among the participants for the transportation.

Companies and laboratories have to include among their personnel a Security Advisor to supervise the manipulation, packaging and transportation of infectious substances Moreover, the centers or facilities must develop a security plan with the, among others, the following elements:

a) Specific allocation of responsibilities on security to qualified personnel.
b) Supervise all the operations involving infectious substances and assess the security risks, including transportation, stops in the road, the intermediates temporary storages.
c) Identify the measures to reduce security risks, considering the responsibilities and duties of all the participants in any operating involving infectious substances.