



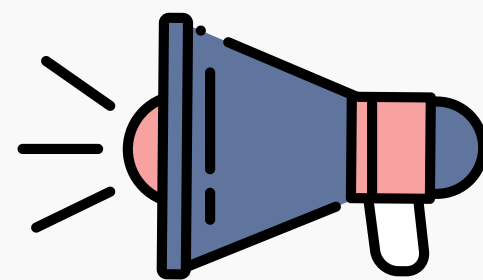
Pilot Study on Antibiotic Residues in Poultry: Relation to Bacterial Resistance and Impact on Human Health

Carolina Rocha(1), Helena Barroso(2)

(1) Instituto Universitário Egas Moniz; Egas Moniz School of Health & Science

(2) Egas Moniz Center for Interdisciplinary Research (CiiEM); Egas Moniz School of Health & Science

1. Introduction



- Antimicrobial resistance (AMR) is a global health threat, causing over 35,000 deaths per year in the European Union and European Economic Area (EU/EEA) and placing major pressure on healthcare systems.
- Antibiotic use in animal production contributes to this problem, especially when withdrawal periods are not respected, leading to residues in meat and the spread of resistant bacteria. In Portugal, available data on antibiotic residues in poultry meat remains scarce.



Did you know that....

The use of antibiotics as growth promoters in animal production has been **banned** in the European Union since 2006 due to public health concerns but controlling their use and monitoring food residues remains a **challenge**?

2. Aims



- Determine the presence of antibiotic residues in 20 poultry meat samples sold in the Greater Lisbon area using a microbiological screening test (Premi@Test Starter Kit).

4. Results & Conclusions

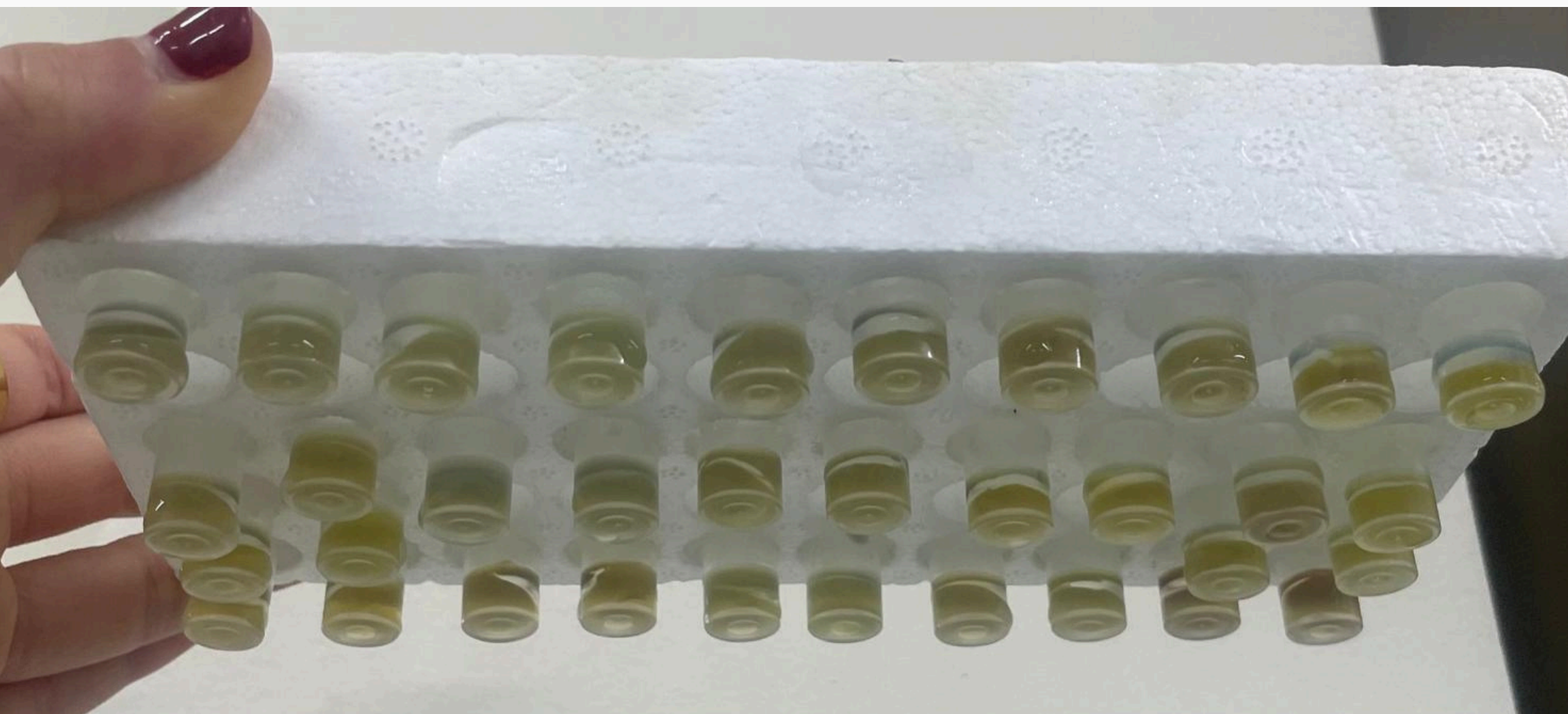


Figure B. Results obtained with the Premi@Test screening for antibiotic residues in poultry meat samples

The Premi@Test is a quick and reliable screening tool but does not identify or quantify specific antibiotics



Future studies with **larger samples** and **quantitative methods** are needed to better assess this issue and improve **food safety**

5. References

<https://pmc.ncbi.nlm.nih.gov/articles/PMC11018410/>
<https://www.mdpi.com/2079-6382/8/2/69>
<https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>
<https://www.efsa.europa.eu/en/news/multi-agency-report-highlights-importance-reducing-antibiotic-use>

3. Materials & Methods

Sample Collection

Twenty free-range chicken meat samples were collected from 10 supermarkets and 10 butcher shops in the Greater Lisbon area. A negative control sample from a chicken raised in a domestic environment without known antibiotic exposure was included.

Sample Preparation

Different parts of the same chicken (breast, thigh, wing, liver, heart, and gizzard) were combined to form a composite sample. Samples were macerated, frozen, and thawed to obtain exudate for analysis.

Microbial Inhibition Test using Premi@Test Starter Kit

Exudate was added to culture tubes containing agar medium inoculated with spores of *Geobacillus Stearothermophilus*. Tubes were washed with demineralized water and incubated at 64 °C for approximately 4 hours.

✓ Quality Control

All samples were tested in duplicate to ensure reliability.

✓ Negative Control

A negative control was included to validate the test by confirming bacterial growth in the absence of antibiotic residues.

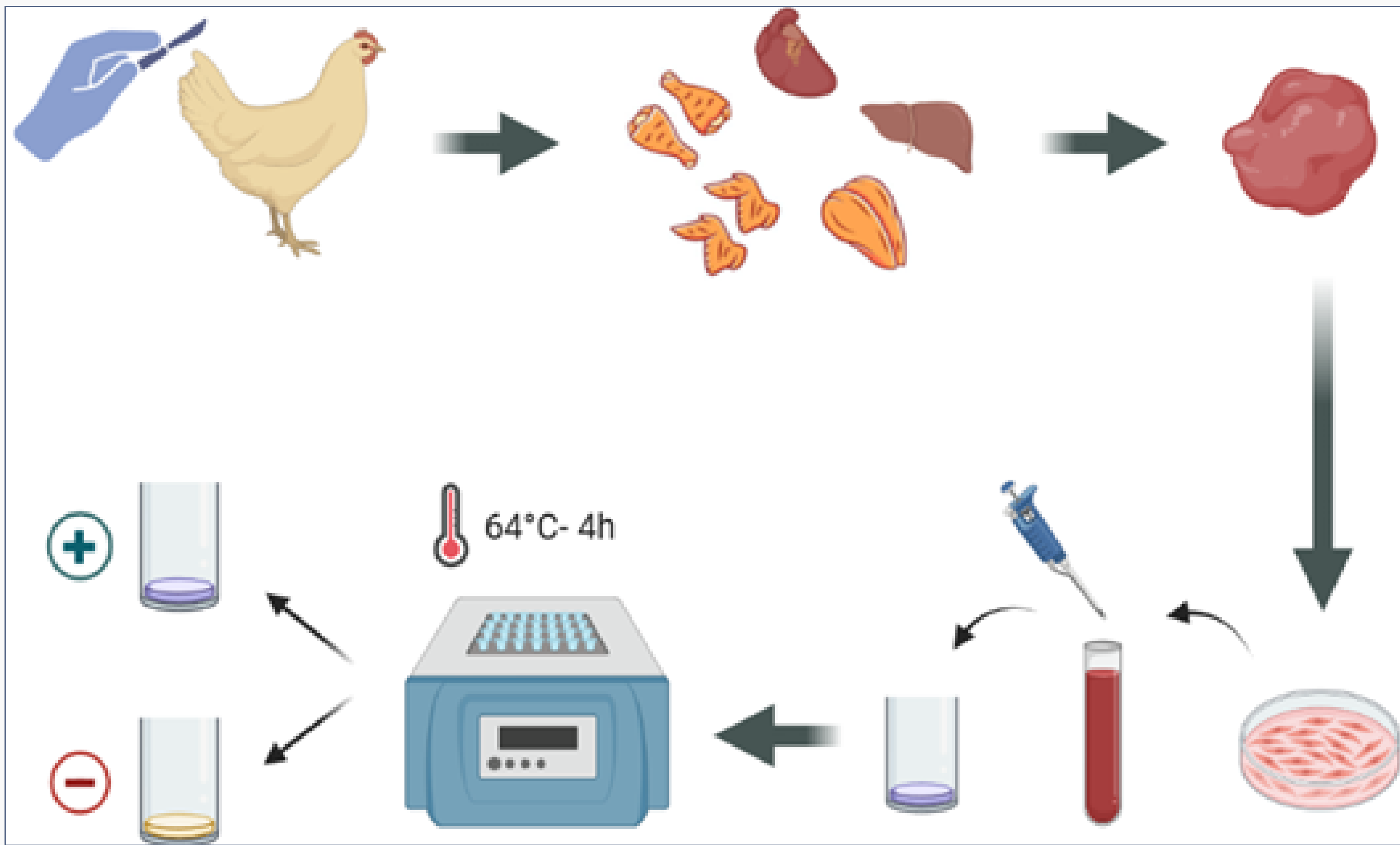


Figure A. Schematic representation of the procedure performed (Created with BioRender.com)

6. Acknowledgements

A special acknowledgment to Egas Moniz School of Health & Science for their essential support in making this project possible, not only by providing access to laboratory facilities and materials, but also by acquiring the Premi@Test Starter Kit, which was fundamental for carrying out this research.