

## **Supplementary Data**

### **High prevalence of *Klebsiella pneumoniae* in European food products: a multicentric study comparing culture and molecular detection methods**

Carla Rodrigues<sup>1\*</sup>, Kathrin Hauser<sup>2</sup>, Niamh Cahill<sup>3</sup>, Małgorzata Ligowska-Marzeta<sup>4</sup>, Gabriella Centorotola<sup>5</sup>, Alessandra Cornacchia<sup>5</sup>, Raquel Garcia Fierro<sup>6</sup>, Marisa Haenni<sup>6</sup>, Eva Møller Nielsen<sup>4</sup>, Pascal Piveteau<sup>7</sup>, Elodie Barbier<sup>8</sup>, Dearbháile Morris<sup>3</sup>, Francesco Pomilio<sup>5</sup>, Sylvain Brisse<sup>1\*</sup>

<sup>1</sup> Institut Pasteur, Université de Paris, Biodiversity and Epidemiology of Bacterial Pathogens, Paris, France;

<sup>2</sup> Institute for Medical Microbiology and Hygiene, Austrian Agency for Health and Food Safety, Vienna/Graz, Austria;

<sup>3</sup> Antimicrobial Resistance and Microbial Ecology Group, School of Medicine, National University of Ireland Galway, Ireland;

<sup>4</sup> Statens Serum Institut, Copenhagen, Denmark;

<sup>5</sup> Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale", Teramo, Italy;

<sup>6</sup> Unité Antibiorésistance et Virulence Bactériennes, Université Claude Bernard Lyon 1 - ANSES, Lyon, France;

<sup>7</sup> INRAE, UR OPPALE, Rennes, France;

<sup>8</sup> Agroécologie, AgroSup Dijon, INRAE, Université Bourgogne Franche-Comté, Dijon, France

#### **\*Corresponding authors:**

##### **Sylvain Brisse**

Institut Pasteur,  
Biodiversity and Epidemiology of Bacterial Pathogens,  
28 rue du Docteur Roux, F-75724 Paris, France.

E-mail: [sylvain.brisse@pasteur.fr](mailto:sylvain.brisse@pasteur.fr)

##### **Carla Rodrigues**

Institut Pasteur,  
Biodiversity and Epidemiology of Bacterial Pathogens,  
28 rue du Docteur Roux, F-75724 Paris, France.

E-mail: [carla.parada-rodrigues@pasteur.fr](mailto:carla.parada-rodrigues@pasteur.fr)

## **Contents**

**Figure S1.** Productivity ( $P_R$ ) results for the three media considered using a reference panel of 50 *Klebsiella* spp. and closely related species.

Some strains (n=5, #22; #26, #35, #46 and #50) showed the same results at least for two media, resulting in only two visible points instead of three.

**Figure S2.** Evaluation of different protocols for recovery of *Klebsiella* spp. from food matrices.

**Figure S3.** Protocol to define the optimal temperature of incubation of SCAI medium plates for the recovery of *Klebsiella* spp. from food matrices.

**Figure S4.** Antibiotic resistance of the *K. pneumoniae* species complex isolates recovered by sample type and by country.

Upper panel: The x-axis represents the number of KpSC resistant isolates for each of the antimicrobials tested and percentages (%) displayed on the graph were calculated based on the total number of isolates.

Lower panel: The x-axis represents the number of KpSC resistant isolates for each of the antimicrobials tested and percentages (%) displayed on the graph were calculated based on the total number of isolates in each country.

**Figure S5.** Geographic distribution of the common genotypes found among *K. pneumoniae* species complex recovered from food products.

**Table S1.** Selectivity results for the two media considered using a reference panel of 7 non-*Klebsiella* spp. species.

**Table S2.** Comparison between the recovery rates of *K. pneumoniae* species complex using two different incubation temperatures of SCAI medium.

**Table S3.** Chicken meat and salad samples analyzed in the different European countries for the presence of *K. pneumoniae* species complex and its epidemiologic characteristics.

**Table S4.** Number of *K. pneumoniae* species complex resistant isolates for each of the antimicrobials tested distributed by sampling source and by country.

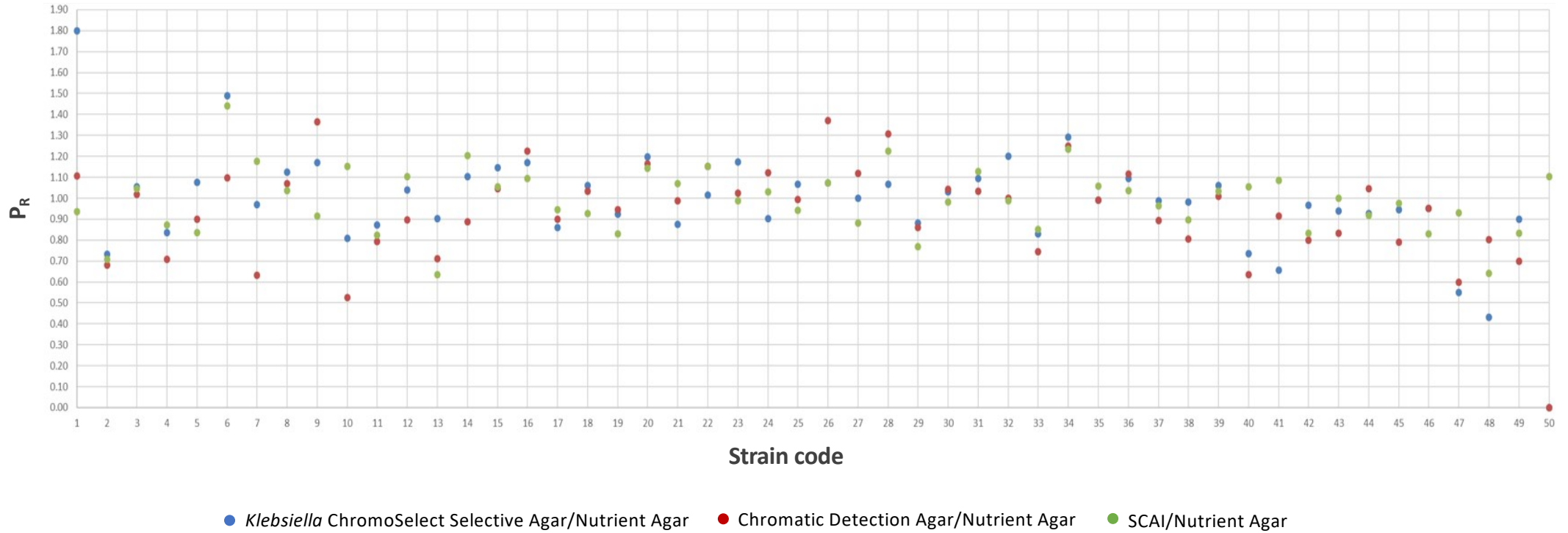
**Table S5.** Multidrug resistant strains from chicken meat and salads, sequence-type (ST), phenotypic resistance and identified AMR genes based on WGS.

**Table S6.** Characteristics of the 131 *K. pneumoniae* species complex isolates recovered: population structure, surface polysaccharides, antimicrobial susceptibility, antimicrobial resistance genes, virulence genes, metal tolerance gene clusters and plasmid replicons.

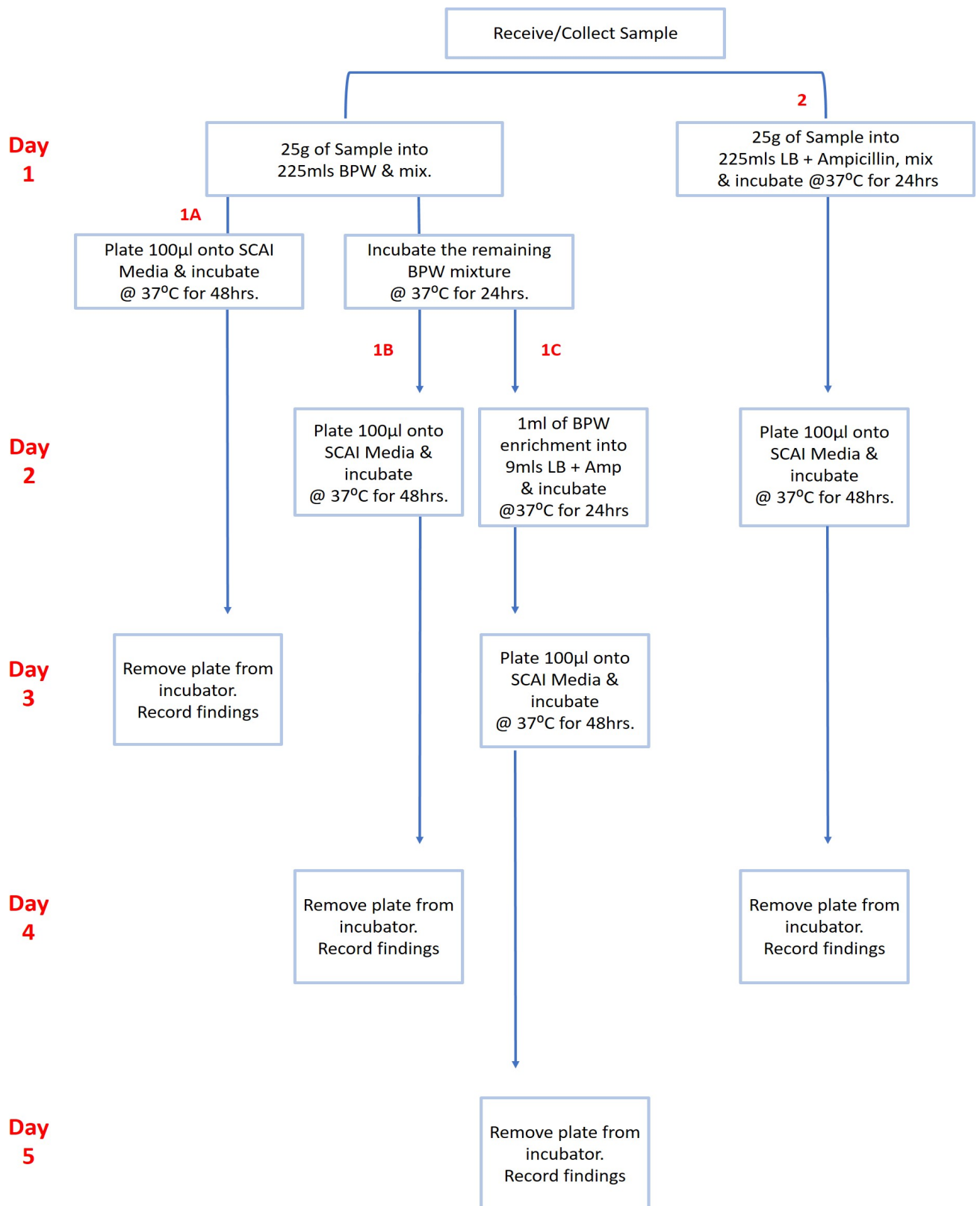
**Table S7.** Bacterial reference strains used for agar media performance comparison. Strains used for the different evaluation criteria are indicated. The correspondent strain code for productivity results in Figure S1 is indicated.

*Please see the separate Excel file for access to the supplementary tables.*

**Figure S1.** Productivity ( $P_R$ ) results for the three media considered using a reference panel of 50 *Klebsiella* spp. and closely related species.



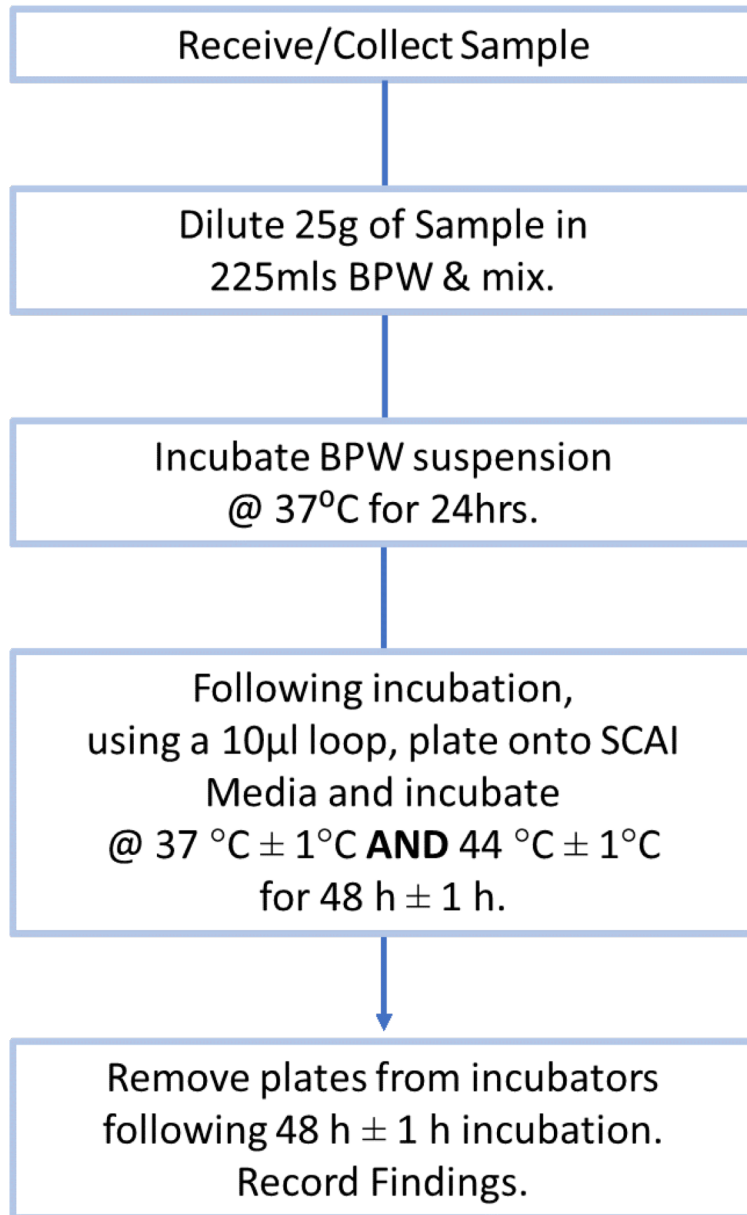
**Figure S2** – Evaluation of different protocols for recovery of *Klebsiella* spp. from food matrices.



**Purify and Identify all suspected *Klebsiella* spp. colonies**

BPW, Buffered Peptone Water  
 SCAI, Simmons Citrate Agar with Inositol  
 LB, Lysogeny broth  
 Amp, Ampicillin  
 @, at

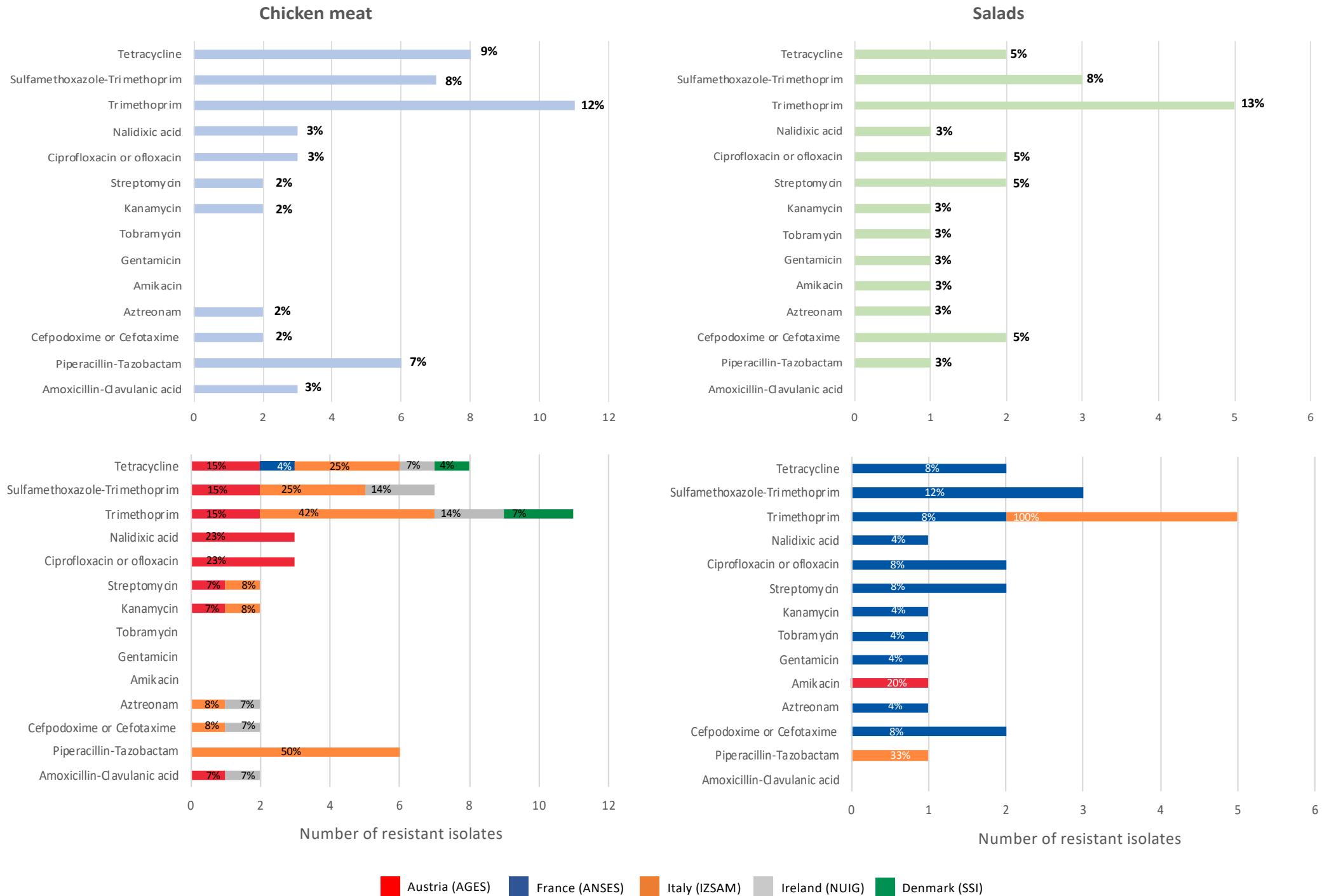
**Figure S3** - Protocol to define the optimal temperature of incubation of SCAI medium plates for the recovery of *Klebsiella* spp. from food matrices.



**Purify and Identify all suspected *Klebsiella* spp. colonies**

BPW, Buffered Peptone Water  
SCAI, Simmons Citrate Agar with Inositol  
, at

**Figure S4.** Antibiotic resistance of the *K. pneumoniae* species complex isolates recovered by sample type and by partner.



**Figure S5.** Geographic distribution of the common genotypes found among *K. pneumoniae* species complex recovered from food products.

