

## ESBL/pAmpC-producing Enterobacteriaceae from healthy bearded dragons (*Pogona Vitticeps*): Preliminary results

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**Objectives:** With the increasing trend of keeping bearded dragons (*Pogona vitticeps*) as pets, there is a higher risk of transmitting multidrug-resistant (MDR) bacteria to humans. This study aimed to evaluate the presence of ESBL/pAmpC-producing Enterobacteriaceae and *Salmonella* spp. from healthy bearded dragons.

**Material and methods:** From March to April 2023, oral cavity and cloacal swab samples from healthy bearded dragons (n=20) were collected from different breeders/owners from the Lisbon area, Portugal. 3GC-resistance Enterobacteriaceae were screened MacConkey agar supplemented with 1.0 µg/mL of cefotaxime and *Salmonella* spp. isolates on IRIS Salmonella® (Biokar) agar. *Salmonella* spp. serotyping was performed according to White-Kauffmann-Le Minor scheme. Antimicrobial susceptibility testing was performed by disc diffusion method following the EUCAST and CLSI guidelines. β-lactamase genes were confirmed by PCR.

**Results:** In this study, 10% (n=2/20) animals were colonized with 3GC-resistant Enterobacteriales, specifically *Klebsiella aerogenes* (n=2) and *Escherichia coli* (n=1). 3GC-resistant *E. coli* was identified in the cloaca and the following β-lactamase genes were detected: *bla*<sub>OXA-1</sub>, *bla*<sub>TEM</sub>, *bla*<sub>CTX-M-grupo 1</sub>. *K. aerogenes* isolates were detected in both cavities of the same animal. *K. aerogenes* isolates were positive for *bla*<sub>TEM</sub> and *bla*<sub>DHA</sub> genes. These isolates were MDR. Also, in this study, 25% (n=5/20) of the animals were found to be colonized with *Salmonella* spp. Additionally, three distinct *S. enterica* serovars were detected: *S. subsp. enterica enterica* ser. pomona (n=1), *S. subsp. enterica diarizonae* ser. 53:k:e,n,x,z15 (n=1) e *S. subsp. enterica* ser. kentucky (n=2). All *Salmonella* spp. isolates were susceptible to all the classes of antimicrobials studied.

**Conclusion:** This study has provided crucial information about the presence of potentially zoonotic bacteria, with particular attention to *salmonella* spp. and ESBL/pAmpC-producing Enterobacteriaceae. The close interaction with bearded dragons may pose a risk to human health, particularly considering antimicrobial resistance, which is a growing concern in public health.

**Keywords:** Bearded dragons, ESBL/pAmpC-producing Enterobacteriaceae, *Salmonella* spp..

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