

# Response to Comment on "The role of wildlife (wild birds) in the global transmission of antimicrobial resistance genes"

## DEAR EDITOR,

Since our first identification of plasmid-mediated colistin resistance gene *mcr-1* in 2015 (Liu et al., 2016), it has been described in human clinics, domestic animals, foods, and the environment worldwide (Schwarz & Johnson, 2016). Although it is still rare, the emergence of *mcr-1* in wild animals is of great concern. We summarized two previous reports on *mcr-1* in wild birds from Lithuania and Argentina to describe its emergence and characteristics in wildlife and highlight the potentially important role of wild animals, particularly birds, in its global transmission (Wang et al., 2017). The first detection of *mcr-1* in wildlife in Asia was identified in an extended-spectrum  $\beta$ -lactamase-producing *Escherichia coli* strain isolated from Eurasian coot (*Fulica atra*), which was located on a ~63 kb IncI2 plasmid, frequently associated with the global transmission of *mcr-1* (Mohsin et al., 2016). The description of *mcr-1* in wild birds in Asia is very important to better understand the role that wild birds may play in the global spread of *mcr-1*, and should have been summarized in our recent review. However, our review only summarized articles published up to December 2016, and as such the then unpublished report on CTX-M-15-producing *Klebsiella pneumoniae* in wild birds in Pakistan (Raza et al., 2017) was not included.

Jing Wang, Zhen-Bao Ma, Zhen-Ling Zeng, Xue-Wen Yang, Ying Huang, Jian-Hua Liu<sup>\*</sup>  
College of Veterinary Medicine, South China Agricultural University, Guangzhou Guangdong 510642, China

<sup>\*</sup>Corresponding author, E-mail: jhliu@scau.edu.cn

## REFERENCES

- Liu YY, Wang Y, Walsh TR, Yi LX, Zhang R, Spencer J, Doi Y, Tian GB, Dong BL, Huang XH, Yu LF, Gu DX, Ren HW, Chen XJ, Lv LC, He DD, Zhou HW, Liang ZS, Liu JH, Shen JZ. 2016. Emergence of plasmid-mediated colistin resistance mechanism MCR-1 in animals and human beings in China: a microbiological and molecular biological study. *The Lancet Infectious Diseases*, **16**(2): 161-168.
- Mohsin M, Raza S, Roschanski N, Schaeffer K, Guenther S. 2016. First description of plasmid-mediated colistin-resistant extended-spectrum  $\beta$ -lactamase-producing *Escherichia coli* in a wild migratory bird from Asia. *International Journal of Antimicrobial Agents*, **48**(4): 463-464.
- Raza S, Mohsin M, Madni WA, Sarwar F, Saqib M, Aslam B. 2017. First report of bla<sub>CTX-M-15</sub>-type ESBL producing *Klebsiella pneumoniae* in wild migratory birds in Pakistan. *EcoHealth*, **14**(1): 182-186.
- Schwarz S, Johnson AP. 2016. Transferable resistance to colistin: a new but old threat. *Journal of Antimicrobial Chemotherapy*, **71**(8): 2066-2070.
- Wang J, Ma ZB, Zeng ZL, Yang XW, Huang Y, Liu JH. 2017. The role of wildlife (wild birds) in the global transmission of antimicrobial resistance genes. *Zoological Research*, **38**(2): 55-80.

Received: 18 May 2017; Accepted: 26 June 2017

Foundation items: This study was partially supported by grants from the National Key Basic Research Program of China (2013CB127200) and the National Natural Science Foundation of China (81661138002)

DOI: 10.24272/j.issn.2095-8137.2017.024