Extraintestinal pathogenic Escherichia coli (ExPEC) strains are a versatile group of bacteria revealing a complex phylogeny and considerable genomic plasticity. ExPEC strains cause a variety of disease syndromes, ranging from uncomplicated urinary tract infections to life-threatening bloodstream infections in humans and septicemia, peritonitis, and yolk sac infections in poultry (1,2). Certain subpopulations of avian ExPEC have been suggested to be zoonotic agents (3,4), which is of great concern, because they also have been associated with multidrug resistant clonal lineages, such as sequence type 131 (ST131) (2,5).

We report the genome sequence of colistin-resistant avian ExPEC strain IHIT25637 carrying the plasmid-mediated mcr-1 gene, which was described first in human and food animal samples in China in 2015 (6). IHIT25637 was isolated in Germany in October 2010 from the liver of a broiler chicken that had died of septicemia. Whole-genome sequencing was performed on a MiSeq sequencer using a MiSeq reagent kit v3 (Illumina, USA) resulting in 300 bp paired-end reads and an average coverage of 100× using SPAdes v3.7.1 (7) into scaffolds, and corresponding 90-fold coverage longing to the epidemiological successful clonal lineage ST131 (ST131-subgroup (9)). Genome data revealed the presence of colistin resistance gene mcr-1 which most likely conferred phenotypic resistance to the “last resort” antibiotics colistin and polymyxin B (MIC: 8 mg/L). Mcr-1 was located on an IncH1 plasmid (>200 kbp) of plasmid sequence type ST4 (10), which are major carriers of mcr-1 in E. coli isolates from livestock and food and also from humans (11–13). In addition to mcr-1, the genome of IHIT25637 carried several resistance genes, such as aph(3’)-Ic, aac(3)-IIa, adaA1, adaA2, strA and strB, blaTEM, cmlA1, catA1 sul1/2/3, dfrA1, and tet(A), but lacked genes for known extended-spectrum β-lactamases and carbapenemases. Only two ST131 E. coli strains carrying mcr-1 have yet been described, namely, from chicken meat of European origin imported to Denmark in 2012 and from the urine of a human patient in Taiwan in 2014 (14,15). However, the appearance of mcr-1-harboring, colistin resistant ExPEC belonging to the epidemiological successful clonal lineage ST131 poses a serious public health threat.

Accession number(s). This whole-genome shotgun project has been deposited at DDBJ/EMBL/GenBank under the accession number MAIV00000000. The version described in this paper is version MAIV0000000.1.

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