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Food Reservoir for *Escherichia coli* Causing Urinary Tract Infections

To the Editor: We read with interest the article by Vincent et al. that compared *Escherichia coli* isolates from 3 sources (human urinary tract infections [UTIs], retail meat, and restaurant/ready-to-eat foods) by multiple molecular typing methods (1). This study has to be considered in the context of the larger debate about the possible animal origin of *E. coli* isolates that cause extraintestinal infections in humans (2–5), and the same authors (Vincent et al.) have declared, in the introduction, that their efforts were directed toward investigating the hypothesis that retail chicken is the main reservoir for extraintestinal *E. coli*.

We strongly appreciate the amount of the experimental data and some interesting findings, but we are not totally convinced of the authors' conclusions, particularly the assumption that the study strongly supports the preliminary hypothesis. First, the observation that only a low proportion (73/844, 8.6%) of the *E. coli* isolates analyzed belonged to clonal groups (defined as ≥ 2 *E. coli* isolates that had indistinguishable multilocus variable number tandem repeats and enterobacterial repetitive intergenic consensus 2 patterns), including members from >1 source, suggests an overall high degree of genetic heterogeneity among isolates from different sources. Second, looking at the single isolates within clonal groups reported in Table 2, twelve (2.9%) of the 417 isolates from retail meat shared multilocus variable number tandem repeats, enterobacterial repetitive intergenic consensus 2, and multilocus sequence types with some human UTI isolates; however, only 1 isolate (strain EC01DT06–1737–01) was also found to be indistinguishable from a human isolate (strain MSHS 161) by pulsed-

field gel electrophoresis, indicating that identical genotypes (between isolates from retail meat and human infections) were observed only once.

Although we agree that the finding of a partial overlap between multilocus sequence types of isolates from retail meat and from human UTI isolates is noteworthy (especially recovery of an ST131 isolate of avian origin), the emphasis posed for the role of food transmission in the dissemination of the *E. coli* strains that cause community-acquired UTIs, in our opinion, does not seem strongly supported by the experimental data. Nevertheless, the topic is relevant, and we would highlight the importance of further research on this issue.

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In Response: Giufrè et al. (1) responded to our recent article about the possibility of a food reservoir, specifically in retail chicken meat, for *Escherichia coli* causing human extraintestinal infections (2). They are not convinced by the data of “strong support” for the hypothesis that retail chicken meat could be a reservoir for these *E. coli* organisms and indicate that the observed proportion of total clonal group members (8.6%) is low and heterogeneity is significant among the isolates tested.

We assembled the 844 study isolates from 3 sources (human, retail meat, and restaurant-ready-to-eat foods) in 2 provinces during a 3-year period. Given the ecologic design

of the study, the fact that 72 isolates actually were related across these sources is surprising and compelling. Furthermore, we identified a retail chicken meat isolate and human urinary tract infection isolate that were indistinguishable by pulsed-field gel electrophoresis (PFGE), again a surprising result given the study design. PFGE remains the standard for *E. coli* genotyping because of its discriminatory power; these results were also confirmed by PFGE by using a second enzyme. This group was identified as containing *E. coli* O25:H4–ST131, a clonal group that appears to cause extraintestinal disease worldwide.

Our study is among the first to extensively genotype *E. coli* isolates from these sources. Hence, the amount of genetic diversity expected in these *E. coli* organisms is unclear. This diversity is the primary issue raised by Giufrè et al.: how much genetic relatedness would be expected in a comparison of *E. coli* isolates from these sources? Although our study was fairly modest in size and was limited by the study design, we observed evidence

supporting our primary hypothesis that retail chicken meat may be a reservoir for *E. coli* causing extraintestinal infections in humans. More studies certainly will help resolve the debate.

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etymologia

Lassa [lah sə] *virus*

This virus was named after the town of Lassa at the southern end of Lake Chad in northeastern Nigeria, where the first known patient, a nurse in a mission hospital, had lived and worked when she contracted this infection in 1969. The virus was discovered as part of a plan to identify unknown viruses from Africa by collecting serum specimens from patients with fevers of unknown origin. Lassa virus, transmitted by field rats, is endemic in West Africa, where it causes up to 300,000 infections and 5,000 deaths each year.

Source: Frame JD, Baldwin JM Jr, Gocke DJ, Troup JM. Lassa fever, a new virus disease of man from West Africa. I. Clinical description and pathological findings. *Am J Trop Med Hyg.* 1970;19:670–6; Mahy BW. The dictionary of virology, 4th ed. Burlington (MA): Elsevier; 2009.