

First molecular evidence links live poultry markets to human H5N1 infection in China

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Sequences of H5N1 virus from live bird markets in China matched sequences from patients who had recently visited the live bird markets, according to a paper in the December 2011 [Journal of Virology](#). Live poultry markets have long been suspected of providing the reservoir of H5N1 responsible for human cases, but this is the first molecular evidence linking H5N1 in humans to these markets, the authors say.

“We collected 69 environmental samples—basically swabs from ditches, cages, floors, water, and so on—from the live bird markets, which six individual patients visited before disease onset,” during the 2008-2009 flu season, says corresponding author Yuelong Shu. “Among these 69 samples, we isolated a total of 12 highly pathogenic H5N1 avian influenza viruses from four of the six live bird markets.” In those cases, “the genetic sequence of the environmental and corresponding human isolates was similar [with a sequence identity of greater than 99 percent], demonstrating a solid link between human infection and live [poultry](#) markets,” says Shu.

The investigators also analyzed 31 H5N1 highly pathogenic avian influenza viruses isolated from the 38 human H5N1 cases identified in China during the past five years, revealing “diverse genotypes... that were consistent with those identified in poultry outbreaks or in live poultry markets,” according to the report.

The results of this investigation have important policy implications, says Shu. “Enhanced infection control measures are warranted in these

markets, not only to reduce human H5N1 infection, but also to minimize the likelihood of coinfection with H5N1 and 2009 H1N1 viruses,” the researchers write. “The sporadic cases of human H5N1 highly pathogenic avian influenza infection, the [H5N1](#) outbreaks in birds, and the simultaneous circulation of the 2009 H1N1 pandemic [virus](#) raise concern that a deadly reassortment virus may emerge.”

More information: X.-F. Wan, et al. Indications that live poultry markets are a major source of human H5N1 influenza virus infection in *China. J. Virol.* 85:13432-13438

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