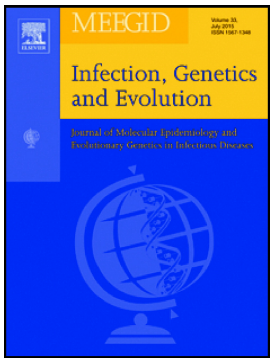

Occurrence and molecular characterization of Cryptosporidium spp., Giardia duodenalis, and Enterocytozoon bieneusi from Tibetan sheep in Gansu, China

Yayun Wu, Yankai Chang, Yuancai Chen, Xiangqian Zhang, Dongfang Li, Shuangjian Zheng, Lu Wang, Junqiang Li, Changshen Ning, Longxian Zhang

PII: S1567-1348(18)30379-4
DOI: doi:10.1016/j.meegid.2018.06.012
Reference: MEEGID 3551

To appear in: *Infection, Genetics and Evolution*

Received date: 18 December 2017
Revised date: 11 April 2018
Accepted date: 8 June 2018

Please cite this article as: Yayun Wu, Yankai Chang, Yuancai Chen, Xiangqian Zhang, Dongfang Li, Shuangjian Zheng, Lu Wang, Junqiang Li, Changshen Ning, Longxian Zhang , Occurrence and molecular characterization of Cryptosporidium spp., Giardia duodenalis, and Enterocytozoon bieneusi from Tibetan sheep in Gansu, China. Meegid (2017), doi:10.1016/j.meegid.2018.06.012

Occurrence and molecular characterization of *Cryptosporidium* spp., *Giardia duodenalis*, and *Enterocytozoon bieneusi* from Tibetan sheep in Gansu, China

Yayun Wu[a] 420090729@qq.com, Yankai Chang[a] 994296590@qq.com, Yuancai Chen[b] 2546070427@qq.com, Xiangqian Zhang[a] 845918018@qq.com, Dongfang Li[a] 337490611@qq.com, Shuangjian Zheng[a] 1123053667@qq.com, Lu Wang[a] 672012808@qq.com, Junqiang Li[a] 504645730@qq.com, Changshen Ning[a] nnl1986@163.com, Longxian Zhang[a,*] zhanglx8999@henau.edu.cn; zhanglx8999@gmail.com

[a]College of Animal Science and Veterinary Medicine, Henan Agricultural University, 15, University Park of Longzihu, Zhengzhou 450046, P.R. China

[b]College of Information and Management Science, Henan Agricultural University, 15, University Park of Longzihu, Zhengzhou 450046, P.R. China

[*]Corresponding author.

Abstract

Cryptosporidium spp., *Giardia duodenalis*, and *Enterocytozoon bieneusi* are globally ubiquitous pathogens. However, little is known about the occurrence and distribution of *Cryptosporidium* spp., *G. duodenalis*, and *E. bieneusi* in Tibetan sheep. In the present study, fecal specimens of 177 Tibetan sheep were examined by nested PCR. 4.5% (n=8), 1.7% (n=3) and 34.5% (n=61) of the Tibetan sheep were positive for *Cryptosporidium* spp., *G. duodenalis*, and *E. bieneusi*, respectively. *Cryptosporidium ubiquitum* was the only species found by small subunit (SSU) rRNA-based PCR, and subtyping of *C. ubiquitum* (n=6) by 60-kDa glycoprotein (gp60) revealed that all positive isolates belonged to zoonotic XIIa subtype 2. Multilocus genotyping at the