Molecular characterization of *Blastocystis* sp. isolates from free-range production poultry and evidence of zoonotic potential

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Blastocystis is a parasite that infects a wide variety of vertebrate hosts, including humans and domestic and wild animals. Whereas human infections have occasionally been associated with gastrointestinal illness and/or urticaria, animal infections are generally not associated with disease. However, from the standpoint of public health, most subtypes isolated from humans have also been isolated from animals, emphasizing the relevance of animal hosts in the epidemiology of this parasitic protist. Stool samples from free-range poultry were collected on farms located in rural areas of the state of Rio de Janeiro, Brazil. The poultry were usually kept in the domiciles for subsistence purposes, such as meat and egg production as well as for the sale of live and slaughtered adult animals, under an extensive breeding system where they were taken to shelters at dusk. All animals were 35 days old at most at the time of sample collection, which was conducted randomly inside the shelters. Of the 147 birds investigated, 43.5% (64/147) tested positive for *Blastocystis*: 21 ducklings (*Anas platyrhynchos domesticus*) (n=48), 23 chicks (*Gallus gallus domesticus*) (n=52), and 20 quail chicks(*Coturnix coturnix japonica*) (n=47). After microscopic diagnosis, the positive samples underwent molecular characterization and were subsequently sequenced. In the samples where good quality sequencing was obtained, subtype 7 (STs7) was diagnosed. This is the subtype with the greatest occurrence in the class of birds and thus presents a zoonotic potential. STs7 plays an important role in the transmission between wild animals, cattle, and humans. Moreover, the conditions in which the poultry were raised favor this type of infection because of environmental contamination. These data are useful for understanding the epidemiology, zoonotic potential, and public health importance of *Blastocystis*.