Blastocystis hominis
is one of the most common single-celled intestinal parasites found in human stool.
samples and a wide variety of domestic animals and wildlife. To date, 17 different subtypes
arguably separate species previously recognized as a single species under the name
Blastocystis hominis
have been identified using molecular techniques. Eight subtypes
ST1–ST8 are shared by human and non-human hosts, suggesting potential zoonotic and
anthroponotic transmission. Prevalence in humans may amount to 100%, with higher records
reported in areas where sanitation standards and personal hygiene are relatively poor.
Following its discovery in 1911,
Blastocystis
remains enigmatic in several respects, including
taxonomy, life cycle, pathogenicity, and transmission. Numerous studies incriminate it as being
pathogenic, although the parasite is frequently seen in healthy individuals, and no tools are
available to distinguish infection from colonisation. Symptoms attributed to
often non-specific and overlap with other infections involving bacteria, viruses, or other
parasitic protists.
Blastocystis
is highly polymorphic, existing in multiple forms, including a cyst stage, which
measures 3–6 µm.
Blastocystis
may be easily missed on microscopy due to its small size and
irregular shape, sometimes being misidentified as yeast, oil globule, or even an artefact.
Reagents are available commercially that greatly facilitate identification of
immunofluorescence microscopy. Meanwhile, PCR-based detection is currently state-of-the-art,
and analysis of
Ribosomal DNA enables subtype identification.
Susceptible hosts acquire colonisation/infection via the fecal-oral route, i.e., through accidental...
ingestion of cyst-contaminated food or water.
has been recovered from drinking
suggesting that water can serve as a source of
human infection. Information on the removal and/or inactivation of
by water and...
wastewater treatment processes is limited, and little is known regarding sensitivity to
disinfection; however, as for (oo)cysts of protozoa, the cyst form may to some extent retain
infectivity following disinfection processes. Prevention of source water contamination by human
or animal waste may prove critical to reducing transmission of this parasite.