ELISA TEST FOR DETECTION OF *BLASTOCYSTIS* SPP. IN HUMAN FAECES: COMPARISON OF THREE METHODS

I. Kucsera, M. Molnár, E. Gályász, J. Danka, E. Orosz
National Center for Epidemiology, Department of Parasitology, Budapest, Hungary

**Objectives:** *Blastocystis* is an enteric protozoan parasite highly prevalent in humans and animals. It is associated worldwide with aspecific symptoms, like diarrhoea, abdominal pain, anal itching, excess gas, and irritable bowel disease. Therefore the *Blastocystis* infected patients often remained non-diagnosed. Detection of *Blastocystis* is routinely performed by microscopy, culture, and sedimentation concentration technique. These methods are time consuming, laborious and require special skilled personnel. Microscopy is difficult since *Blastocystis* has several morphological forms (vacuolar, cyst, amoeboid, granular, multivacuolar, and avacuolar). Concentration technics destroy some of the forms during stool processing, therefore are unreliable. Culture requires 2-4 days for diagnosis and may allow preferential growth of specific strains while eliminating others. ELISA-based test for detection of *Blastocystis* antigens in stool could be a proper alternative to currently used methods, especially the microscopy. This work compares results of stool examination by microscopy, cultivation and antigen detection test (CoproELISA *Blastocystis*, Savyon, Israel).

**Material and Methods:** 74 stool samples routinely sent to the laboratory have been tested microscopically and by CoproELISA *Blastocystis*. 63 samples were tested with cultivation. 6 human *Blastocystis* strains isolated and maintained in the laboratory have been initiated to testing. For microscopic examination direct wet mount and Modified Merthiolate-Iodine -Formalin (MIF) preparation, for cultivation modified Boeck and Drbohlav’s diphasic medium and for *Blastocystis* antigen detection CoproELISA *Blastocystis* (Savyon, Israel) have been used.

**Results:** Microscopically in 16,2% (12/74) of samples *Blastocystis* was detected, by cultivation in 40,6% (28/69) and by ELISA 38,7% (31/80). Comparing cultivation and ELISA: 28 by cultivation positive samples (strains included) were positive in 96.4% (27/28) by ELISA. Testing 41 culture-negative samples by ELISA further 4 positives have been detected (9.7%, 4/41). Based on this comparison the calculated parameters of the ELISA test are: Sensitivity: 96.4% and Specificity: 90.2%.

**Conclusions:** The ELISA results showed high correlation with results obtained by cultivation, as a standard method. ELISA is expeditious in providing reliable results. Considering this, the ELISA is expected to be the method of choice for diagnosis of *Blastocystis* in the common laboratory.