

Effects of *Blastocystis* sp. ST4 on Colon Cancer Cell Viability

Vinoth Kumarasamy^{1*}

¹Department of Parasitology & Medical Entomology, Faculty of Medicine, National University of Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia

*Correspondence author: vinoth@ukm.edu.my

ABSTRACT

Blastocystis sp. is a common enteric protozoan with an unclear role in human disease and is highly prevalent worldwide, particularly in tropical and subtropical regions. Although multiple subtypes exist, their individual biological effects on the intestinal epithelium and their potential involvement in colorectal cancer (CRC) progression remain poorly understood.

In this study, solubilised antigen from *Blastocystis* sp. Subtype 4 (ST4) was investigated for its effects on primary colon epithelial cells and colon cancer cell lines representing different stages of CRC. ST4 antigen was applied to these cell models, and cell viability was assessed using proliferation assays to determine stage-specific responses.

Our findings show that ST4 consistently reduced cell viability, with the strongest cytotoxic effect observed in advanced-stage HCT116 colon cancer cells. This suggests that ST4 may exert a more pronounced cytotoxic influence as CRC progresses.

Overall, these results indicate that *Blastocystis* ST4 can differentially affect colon epithelial and cancer cells depending on disease stage, supporting a potential role for this subtype in CRC-related cellular responses. Further molecular studies are needed to identify the pathways underlying these effects.

Keywords: *Blastocystis* sp.; Subtype 4; colon cancer; colorectal cancer (CRC)