

UNIVERSITI TEKNOLOGI MARA

**MOLECULAR SUBTYPING OF
BLASTOCYSTIS SP. ISOLATES FROM
HUMANS AND ANIMALS IN THE
SENOI AND PROTO-MALAY TRIBES
OF ORANG ASLI, PAHANG**

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Thesis submitted in fulfillment
of the requirements for the degree of
Master of Science

Faculty of Health Sciences

April 2017

ABSTRACT

Infection by the parasite with unsettled clinical significance; *Blastocystis* is a common health problem in developing countries. The genetically diverse parasite currently classified into 17 subtypes (STs) with human isolates categorised into ST1 to ST9. Infections with genotypic homologous animal isolates are demonstrated in all of these nine subtypes. Hence, this study was undertaken to comprehensively determine the subtype distributions, zoonotic potential and pathogenicity of the parasite in 359 stool samples obtained from the Senoi and Proto-Malay tribes and animals from Sungai Lembing, Pahang. Samples were examined for the presence of *Blastocystis* using microscopic techniques (Wheatley's trichrome stain and *in-vitro* culture) and PCR assay. Demographic and socioeconomic data were collected using standardised questionnaire. Amplicons of 550 to 585-bp of the SSU rRNA gene were purified, sequenced and phylogenetic tree was constructed using maximum likelihood method in MEGA6. Among Orang Asli isolates, ST3 (9.5%) was the predominant subtype, followed by ST1 (5.5%), and ST2 (2.8%). ST2 (1.0%) and ST10 (11.3%) were detected in macaque and deer, respectively. ST3 was commonly found in symptomatic (6) and asymptomatic (18) individuals, thus, its pathogenic potential remains controversial. These findings deduced that *Blastocystis* is still prevalent among Orang Asli and animals. It also highlights the possible zoonotic risks as ST2 was found in both hosts. In addition, combination of both microscopic techniques are more superior ($K = 0.353$) than individual technique. Nevertheless, these informations may be beneficial to reassess the existing intervention strategies. It is hoped to prevent future expansion of the parasite hence significantly improve the quality of life and health of Orang Asli.

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful

Alhamdulillah. Thanks to Allah The Almighty for providing me with good health, *rahmah*, blessing and strength in completing my Master's project. I am blessed with all the courage and love given by Him. A thousand of sincere gratitudes goes to my supervisor, Y.M. Dr. Tengku Shahrul Anuar bin Tengku Ahmad Basri, whom I am deeply indebted to. His never ending supports, advices and critical assessments from the beginning until the completion of the study have contributed to this success. Thanks also to my supportive co-supervisor Professor Datin Dr. Norhayati Moktar. Not forgotten, this study would have been impossible without the support of Research Acculturation Grant Scheme: (600-RMI/RAGS 5/3 [52/2014]) from the Universiti Teknologi MARA and Ministry of Education, Malaysia.

My most heartfelt gratitude goes to the Department of Orang Asli Development (JAKOA), Ministry of Rural and Regional Development Malaysia for granting the permission to conduct this study. I am also eternally grateful to all participants from Sungai Mas and Sungai Jin villages for their endless commitments and contributions in providing their own and domestic animals stool samples. My sincerest thanks extended to Mr. Mohd. Akhbar Chiraghadin, the owner of Ladang Rusa Sungai Jin and his animal handlers for their invaluable assistance and advices during the sampling process. I am personally thankful to Miss Fatmah Md Salleh, Juwairiyah Mohd Nor, Azah Ashikin Azhari, Munirah Mokhtar and Nurul Azmiera Zamri for their assistance and kind supports during the field work. I am also thankful to Associate Professor Dr. Hesham M. Al-Mekhlafi (Department of Parasitology, Faculty of Medicine, University of Malaya) for providing positive control of *Blastocystis* ST1, ST2 and ST3.

Special appreciation dedicated to my beloved parents, Mohammad Jalani and Asiah Ismail, for their sincere prayers. Their endless prayers kept me sustained and driven me throughout this study. I am sincerely grateful to my siblings, Nur Natasha Adilla and Amirul Ikhwan Shah for their continuous moral supports and motivations that they have given me through thick-and-thin. I am also would like to dedicate my appreciation to Assistant Science Officers of Postgraduate Department, Mdm. Nurajulie Mat Jamin and Mdm. Nornazihah Jamil, as well as my postgraduate friends for their kind help and encouragements. For those who are not mentioned but had directly and indirectly involved in this study, I am truly appreciate your efforts and may Allah will bless and reward all of you for your generosity. Thank you.

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