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LIST OF ABBREVIATIONS

Ab	Ambulatory bud
Ap	Apical papillae
AT	Anterior testis
Bp	Birth pore
C	Caeca
Cc	Cytogenous cell
Ce	Cercaria
Ci	Cilia
Cr	Cirrus
CrS	Cirrus sac
CP	Cirrus pouch
DR	Daughter redia
E	Esophagus
EB	Excretory bladder
ED	Excretory duct
Eg	Egg
EP	Excretory pore
Es	Eye spots
F	Fin fold
G	Gut
Gc	Germ ball cell
GP	Genital primordia
Gp	Genital pore
HC	Head crown
LAMP	Loop Mediated Isothermal Amplification
MG	Melishs' gland
O	Ovary
OS	Oral sucker

LIST OF ABBREVIATIONS (CONTINUED)

P	Pharynx
PCR	Polymerase Chain Reaction
PP	Prepharynx
PT	Posterior testis
R	Redia
S	Sperm
SV	Seminal vesicle
TE	Triangular loop of excretory duct
U	Uterus
VF	Vitellaria follicle
VS	Ventral sucker

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ข้อความแห่งการริเริ่ม

- 1) รายงานการพบระยะเมตาเซอร์คาเรียของ *Echinostoma revolutum* ในหอย *Clea helena* เป็นครั้งแรก และยืนยันโฮสต์กึ่งกลางตัวที่สองตามธรรมชาติของ *E. revolutum* คือหอย *Filopaludina* spp., *Eyriesia eryresi* และ *Bithynia* spp. ซึ่งมีการกระจายตัวโดยทั่วไปในจังหวัดเชียงใหม่
- 2) วงชีวิตทั้งหมดของ *E. revolutum* ได้อธิบายและแสดงไว้
- 3) พัฒนา loop-mediated isothermal amplification (LAMP) assay ในการตรวจ *E. revolutum* รวมทั้งใช้ LAMP assay ในการตรวจสอบเมตาเซอร์คาเรียของ *E. revolutum* ในหอยที่มีการติดเชื้อได้
- 4) เป็นรายงานแรกในการใช้ข้อมูลลำดับนิวคลีโอไทด์ของ internal transcribed spacer subunit 2 และยีน nicotinamide adenine dinucleotide dehydrogenase subunit 1 ในการศึกษาความสัมพันธ์เชิงวิวัฒนาการของ *E. revolutum* ในเอเชียตะวันออกเฉียงใต้

STATEMENT OF ORIGINALITY

1. This is the first report for metacercariae of *Echinostoma revolutum* in the snail host, *Clea helena*, and also confirmed that *Filopaludina* spp., *Eyriesia eryresi*, and *Bithynia* spp. act as the second intermediate hosts of *E. revolutum* under natural conditions, which are indigenously distributed in Chiang Mai province.
2. The whole life cycle of *E. revolutum* are described and illustrated.
3. *E. revolutum* specific loop-mediated isothermal amplification (LAMP) assay was successfully developed and also to apply the LAMP assay to detect metacercariae of *E. revolutum* in infected snails.
4. This is the first study that has used sequence data of the internal transcribed spacer subunit 2 and nicotinamide adenine dinucleotide dehydrogenase subunit 1 gene to investigate phylogenetic relationship of *E. revolutum* in Southeast Asia.