



UPPSALA
UNIVERSITET

Molecular Biotechnology Programme

Uppsala University School of Engineering

UPTEC X 07 064		Date of issue 2007-12
Author Jon Jerlström-Hultqvist		
Title (English) Development of proteomic tools in the intestinal parasite <i>Giardia lamblia</i>		
Title (Swedish)		
Abstract Proteomic analysis has in recent years come of age with the development of efficient tools for purification, identification and characterization of gene products predicted by genome projects. The intestinal protozoan parasite <i>Giardia lamblia</i> can be transfected but there are only a few vectors available and they are not user-friendly. This work delineates the construction of a suite of cassette based expression vectors for use in <i>Giardia</i>. Taken together, the vectors should be capable of providing protein localization, anti-sense based gene knockdown and production of recombinant proteins with efficient purification by a novel affinity tag combination, SBP-GST. Anti-sense knockdown of alpha-1 and alpha-11 giardin by the new vector system failed to produce stable transfectants. Arginine deiminase (ADI), a potential drug candidate, was purified to homogeneity from stably transfected trophozoites. This is the first report of production of recombinant proteins in <i>Giardia</i> and protein complexes can now be studied in <i>Giardia</i> with this new system.		
Keywords <i>Giardia lamblia</i> , vector construction, gene synthesis, transfection, affinity purification, SBP, GST, ADI		
Supervisors Dr. Staffan Svärd Department of Cell and Molecular Biology, Uppsala University		
Scientific reviewer Prof. Anders Virtanen Department of Cell and Molecular Biology, Uppsala University		
Project name	Sponsors	
Language English	Security	
ISSN 1401-2138	Classification	
Supplementary bibliographical information	Pages 38	
Biology Education Centre Box 592 S-75124 Uppsala	Biomedical Center Tel +46 (0)18 4710000	Husargatan 3 Uppsala Fax +46 (0)18 555217