



UPPSALA
UNIVERSITET

Molecular Biotechnology Programme

Uppsala University School of Engineering

UPTEC X 06 021		Date of issue 2006-05
Author Gustav Karlberg		
Title (English) Interaction study between cMyBP-C and FHL1		
Title (Swedish)		
Abstract Hypertrophic Cardiomyopathy (HCM) is a disease that affects the structure of the sarcomere in muscles. It has been related to mutations in the cardiac Myosin Binding Protein-C (cMyBP-C). The Four and a Half LIM domain 1 protein (FHL1) has several different tasks in the cell. Recent studies have shown that these proteins interact with each other indicating their importance in the development of the heart. Overexpression of FHL1 in transgenic mice have shown the formation of myosacs, while in the mice where the gene was inactivated using RNAi, there were long and thin sarcomeres. The cells lack the ability to develop myosin thick filaments. This study aimed to further characterize the interaction between cMyBP-C and FHL1. Optimisation of overexpression in <i>E. coli</i> cells was performed for both cMyBP-C and FHL1. Further proof of the interaction was found by co-expression of the two proteins. A truncated version of FHL1 was purified and characterized for protein size and folding. First attempts in finding the minimal binding domain was performed using yeast two hybrid screening.		
Keywords cMyBP-C, FHL, protein interaction, overexpression optimisation		
Supervisors Jacqui Matthews University of Sydney		
Scientific reviewer Gunnar Johansson Uppsala university		
Project name	Sponsors	
Language English	Security	
ISSN 1401-2138	Classification	
Supplementary bibliographical information	Pages 43	
Biology Education Centre Box 592 S-75124 Uppsala	Biomedical Center Tel +46 (0)18 4710000	Husargatan 3 Uppsala Fax +46 (0)18 555217