



**Molecular Biotechnology Programme**  
**Uppsala University School of Engineering**

<b>UPTEC X 03 010</b>		<b>Date of issue 2003-02</b>	
Author		<b>Anna Svensson</b>	
Title (English)		<b>Hybridisation procedure and data analysis of a custom made microarray including 500 genes: a quality affirmation</b>	
Title (Swedish)			
Abstract		<p>Microarrays are powerful tools enabling the study of the expression level of a great number of genes simultaneously. The custom made microarray Myochip 1.0 provides a validated tool for the study of gene expression in human muscle biopsy material. To assure quality of raw data, dye-label concentration should be measured (i.e. in the Nanodrop spectrophotometer), minimal 10 pmol CyDye incorporation per sample is recommended. Normalisation of raw data is necessary to correct for systematic variation of ratios, print-tip group lowess normalisation appearing as a good choice. After normalisation, two well-working statistical methods to determine differentially expressed genes are SAM and Bayes, both showing high concordance with our own alternative "Eva". The data procedure has been tested and works well on biological data, predicting significant gene expression profile changes in response to strength training.</p>	
Keywords		cDNA microarray, differential gene expression, dye label quantity, normalisation, strength training	
Supervisors		<b>Prof. Eva Jansson</b> Institution of Medical Laboratory Sciences and Technology	
Examiner		<b>Ass. prof. Carl-Johan Sundberg</b> Institution of Medical Laboratory Sciences and Technology	
Project name	Sponsors		
Language	<b>English</b>	Security	
<b>ISSN 1401-2138</b>	Classification		
Supplementary bibliographical information	Pages <b>29</b>		
<b>Biology Education Centre</b> Box 592 S-75124 Uppsala	Biomedical Center Tel +46 (0)18 4710000	Husargatan 3 Uppsala Fax +46 (0)18 555217	

