

RNAseq Workshop

Monash Genomics and Bioinformatics Platform (MGBP)

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Chapter 1

Getting started

Instructors:

1.1 Summary

Important links:

Chapter 2

Introduction

Chapter 3

Experimental design

3.1 Sequencing methods

3.2 Cost optimisation approaches

3.3 Sequencing

3.4 Batches and replicates (technical/biological)

Chapter 4

Library Preparation

4.1 Read length/type, paired/single

4.2 Enrichment/depletion

4.3 cDNA synthesis

Chapter 5

Pipeline Overview

5.1 Sequencing

5.2 (fastq)QC

5.3 multiQC interpretation

5.4 Mapping

5.5 Proper references and annotated genome
references

5.6 multiQC interpretation

5.7 Counting

5.8 Feature counts

5.9 UMIs

5.10 Show them where they may run it

Chapter 6

Differential Expression

6.1 Normalisation

6.2 analysis ie DEG

(should we go into more details on design matrices, contrast matrices, fitting linear models etc.?) ## QC of results ### MDA/PCA plots and running additional adjustments such as RUVseq or adding covariates in DGE

Chapter 7

Post Analysis

7.1 Discuss additional plots and variations

7.2 Discuss Network analysis

7.3 Discuss Multivariate integration

7.4 Discuss Single Cell