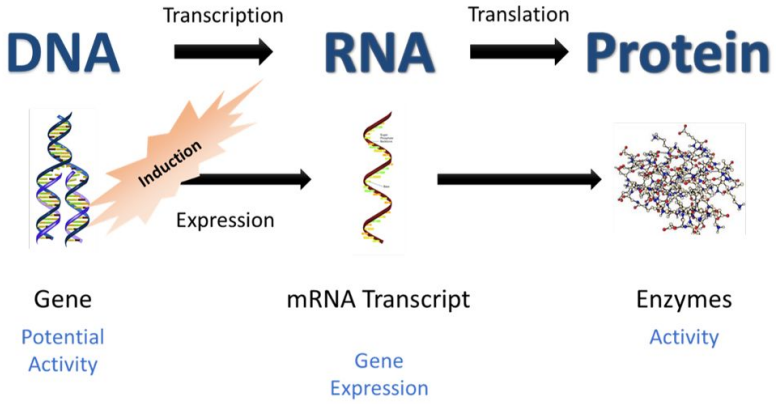
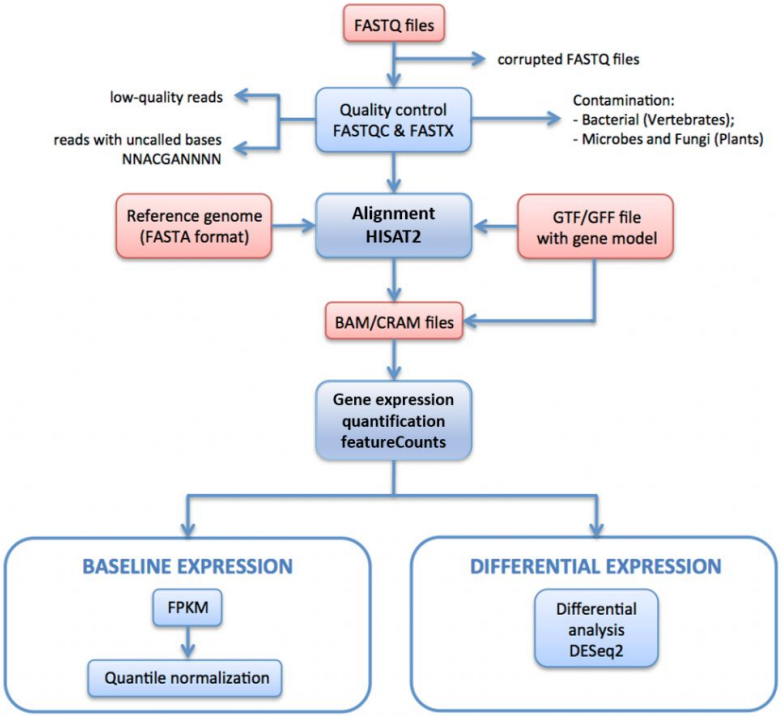
Bora Öden
Past Works and Abroad Experience

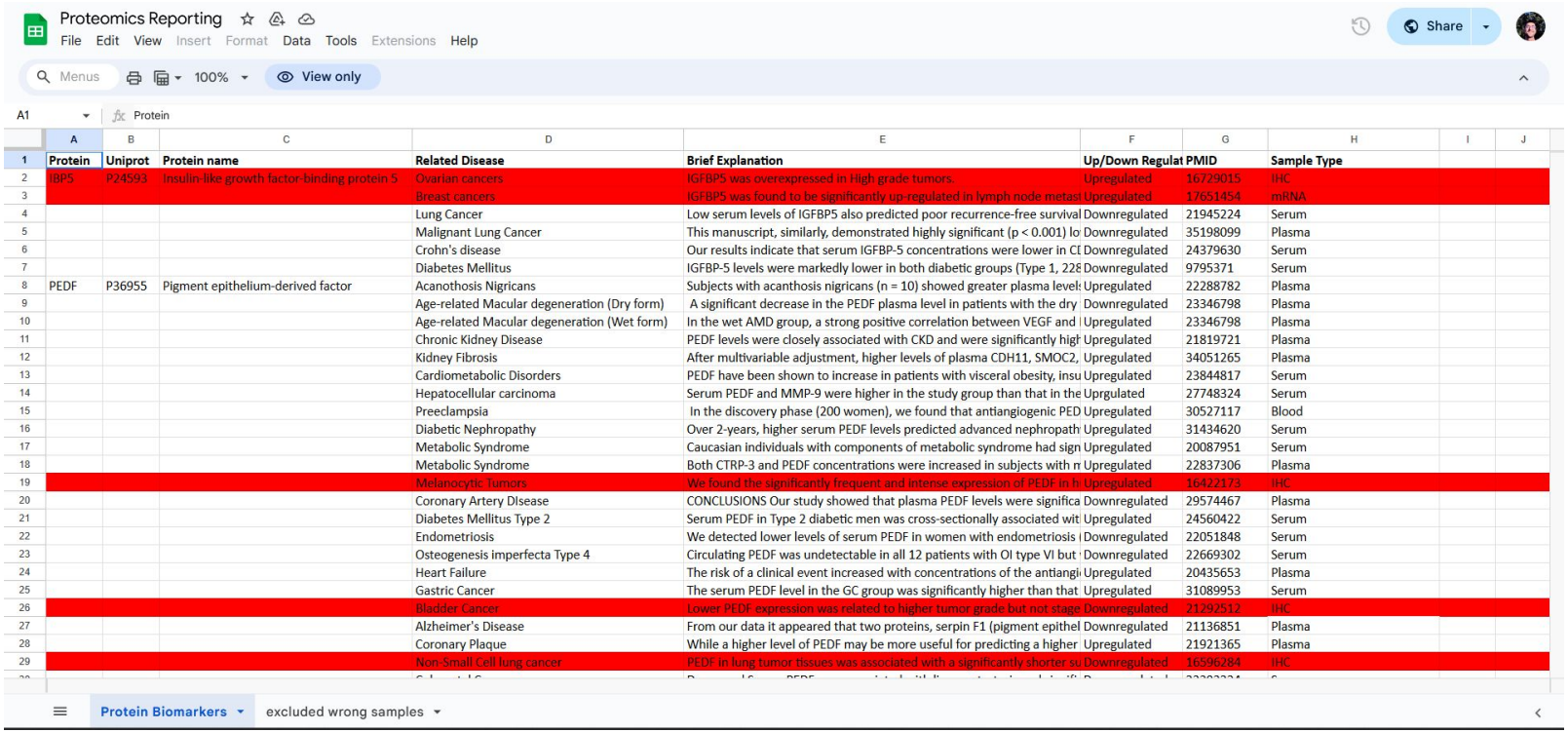
Mersin University - Faculty of Medicine

Summer 2022: SciLifeLab - Mardinoğlu Group / Stockholm


DNA
Transcription
RNA
Translation
Protein
Induction
Expression
Gene
Potential Activity
mRNA Transcript
Gene Expression
Enzymes
Activity


FASTQ files
corrupted FASTQ files
low-quality reads
reads with uncalled bases NNACGANNNN
Quality control FASTQC & FASTX
Contamination:
- Bacterial (Vertebrates);
- Microbes and Fungi (Plants)
Reference genome (FASTA format)
Alignment HISAT2
GTF/GFF file with gene model
BAM/CRAM files
Gene expression quantification featureCounts
BASELINE EXPRESSION
FPKM
Quantile normalization
DIFFERENTIAL EXPRESSION
Differential analysis DESeq2

July 2022 - Proteomics Literature Review and Analysis



Proteomics Reporting

File Edit View Insert Format Data Tools Extensions Help

Share

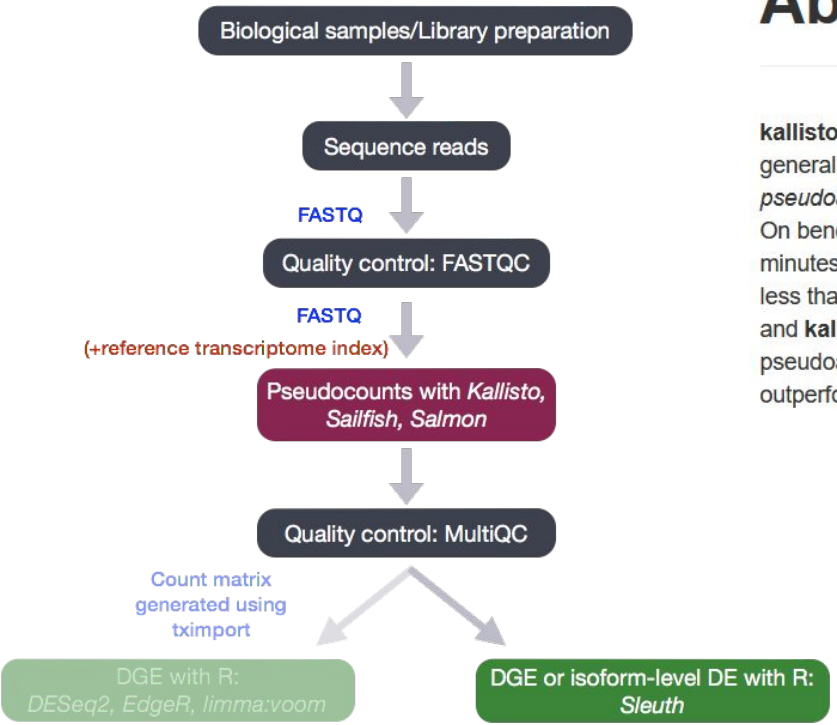
Menus 100% View only

A1 Protein

	A	B	C	D	E	F	G	H	I	J
1	Protein	Uniprot	Protein name	Related Disease	Brief Explanation	Up/Down Regulat	PMID	Sample Type		
2	IBP5	P24593	Insulin-like growth factor-binding protein 5	Ovarian cancers	IGFBP5 was overexpressed in High grade tumors.	Upregulated	16729015	IHC		
3				Breast cancers	IGFBP5 was found to be significantly up-regulated in lymph node metast	Upregulated	17651454	mRNA		
4				Lung Cancer	Low serum levels of IGFBP5 also predicted poor recurrence-free survival	Downregulated	21945224	Serum		
5				Malignant Lung Cancer	This manuscript, similarly, demonstrated highly significant (p < 0.001) lo	Downregulated	35198099	Plasma		
6				Crohn's disease	Our results indicate that serum IGFBP-5 concentrations were lower in CI	Downregulated	24379630	Serum		
7				Diabetes Mellitus	IGFBP-5 levels were markedly lower in both diabetic groups (Type 1, 228	Downregulated	9795371	Serum		
8	PEDF	P36955	Pigment epithelium-derived factor	Acanothosis Nigricans	Subjects with acanthosis nigricans (n = 10) showed greater plasma level	Upregulated	22288782	Plasma		
9				Age-related Macular degeneration (Dry form)	A significant decrease in the PEDF plasma level in patients with the dry	Downregulated	23346798	Plasma		
10				Age-related Macular degeneration (Wet form)	In the wet AMD group, a strong positive correlation between VEGF and	Upregulated	23346798	Plasma		
11				Chronic Kidney Disease	PEDF levels were closely associated with CKD and were significantly high	Upregulated	21819721	Plasma		
12				Kidney Fibrosis	After multivariable adjustment, higher levels of plasma CDH11, SMOC2,	Upregulated	34051265	Plasma		
13				Cardiometabolic Disorders	PEDF have been shown to increase in patients with visceral obesity, insu	Upregulated	23844817	Serum		
14				Hepatocellular carcinoma	Serum PEDF and MMP-9 were higher in the study group than that in the	Upregulated	27748324	Serum		
15				Preeclampsia	In the discovery phase (200 women), we found that antiangiogenic PED	Upregulated	30527117	Blood		
16				Diabetic Nephropathy	Over 2-years, higher serum PEDF levels predicted advanced nephropath	Upregulated	31434620	Serum		
17				Metabolic Syndrome	Caucasian individuals with components of metabolic syndrome had sign	Upregulated	20087951	Serum		
18				Metabolic Syndrome	Both CTRP-3 and PEDF concentrations were increased in subjects with n	Upregulated	22837306	Plasma		
19				Melanocytic Tumors	We found the significantly frequent and intense expression of PEDF in h	Upregulated	16422173	IHC		
20				Coronary Artery DIsease	CONCLUSIONS Our study showed that plasma PEDF levels were significa	Downregulated	29574467	Plasma		
21				Diabetes Mellitus Type 2	Serum PEDF in Type 2 diabetic men was cross-sectionally associated wit	Upregulated	24560422	Serum		
22				Endometriosis	We detected lower levels of serum PEDF in women with endometriosis	Downregulated	22051848	Serum		
23				Osteogenesis imperfecta Type 4	Circulating PEDF was undetectable in all 12 patients with OI type VI but	Downregulated	22669302	Serum		
24				Heart Failure	The risk of a clinical event increased with concentrations of the antiangi	Upregulated	20435653	Plasma		
25				Gastric Cancer	The serum PEDF level in the GC group was significantly higher than that	Upregulated	31089953	Serum		
26				Bladder Cancer	Lower PEDF expression was related to higher tumor grade but not stage	Downregulated	21292512	IHC		
27				Alzheimer's Disease	From our data it appeared that two proteins, serpin F1 (pigment epithel	Downregulated	21136851	Plasma		
28				Coronary Plaque	While a higher level of PEDF may be more useful for predicting a higher	Upregulated	21921365	Plasma		
29				Non-Small Cell lung cancer	PEDF in lung tumor tissues was associated with a significantly shorter su	Downregulated	16596284	IHC		

Protein Biomarkers | excluded wrong samples

August 2022: RStudio, DeSeq2, Kallisto Analysis



About

kallisto is a program for quantifying abundances of transcripts from bulk and single-cell RNA-Seq data, or more generally of target sequences using high-throughput sequencing reads. It is based on the novel idea of *pseudoalignment* for rapidly determining the compatibility of reads with targets, without the need for alignment. On benchmarks with standard RNA-Seq data, **kallisto** can quantify 30 million human reads in less than 3 minutes on a Mac desktop computer using only the read sequences and a transcriptome index that itself takes less than 10 minutes to build. Pseudoalignment of reads preserves the key information needed for quantification, and **kallisto** is therefore not only fast, but also as accurate as existing quantification tools. In fact, because the pseudoalignment procedure is robust to errors in the reads, in many benchmarks **kallisto** significantly outperforms existing tools. **kallisto** is described in detail in:

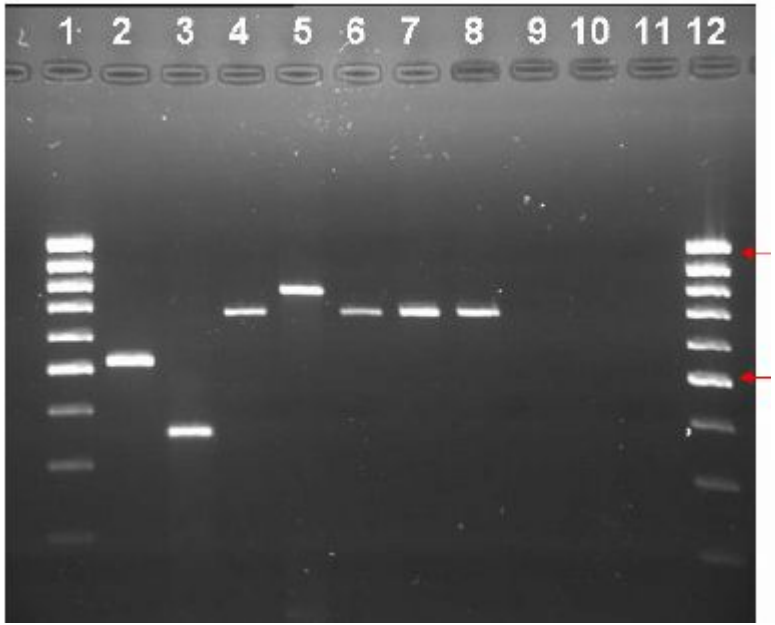
RStudio®

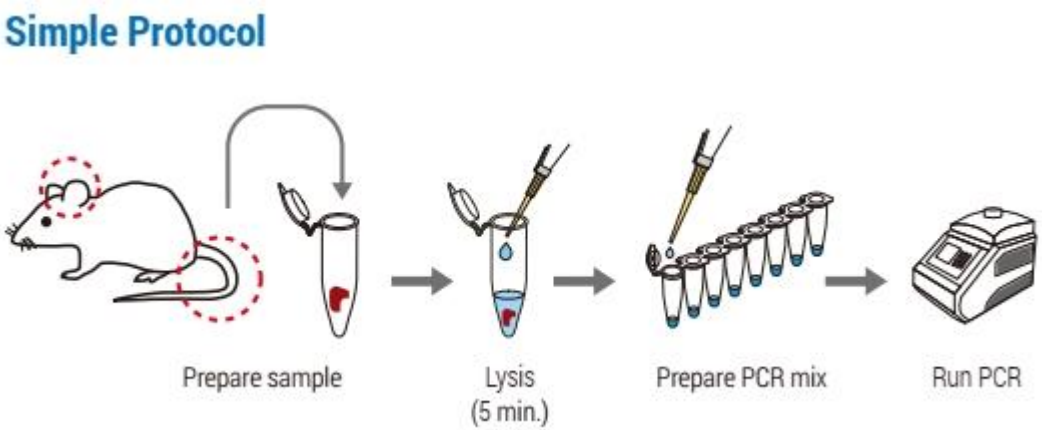
Spring 2023 / Erasmus at University of Pisa Faculty of Medicine

Summer 2023: Universitätsklinikum Ulm

UNIVERSITÄTS
KLINIKUM
ulm

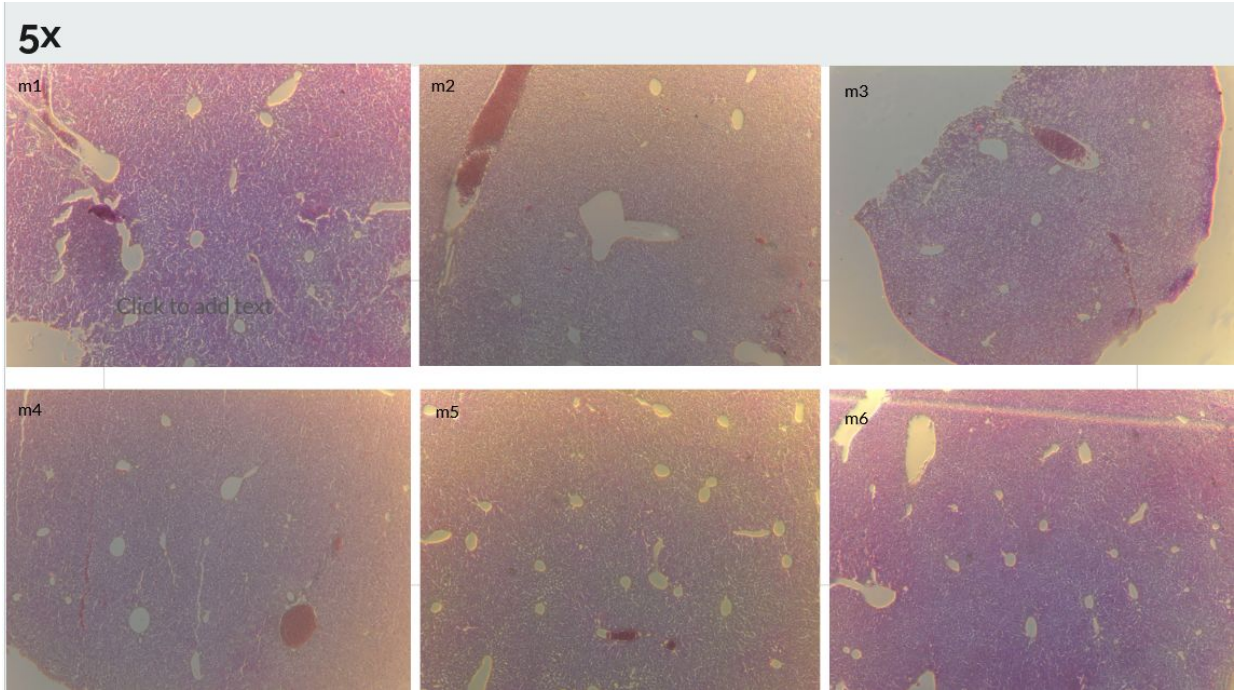
Regenotyping with PCR





Cell culture of mice macrophages

Mice Livers Histological Examination and Presentation



link to my presentation

Summer 2024: Universitätsklinikum Carl Gustav Carus Dresden

Attended outpatient clinical sessions and inpatient ward visits

the end.

thank you for your attention.