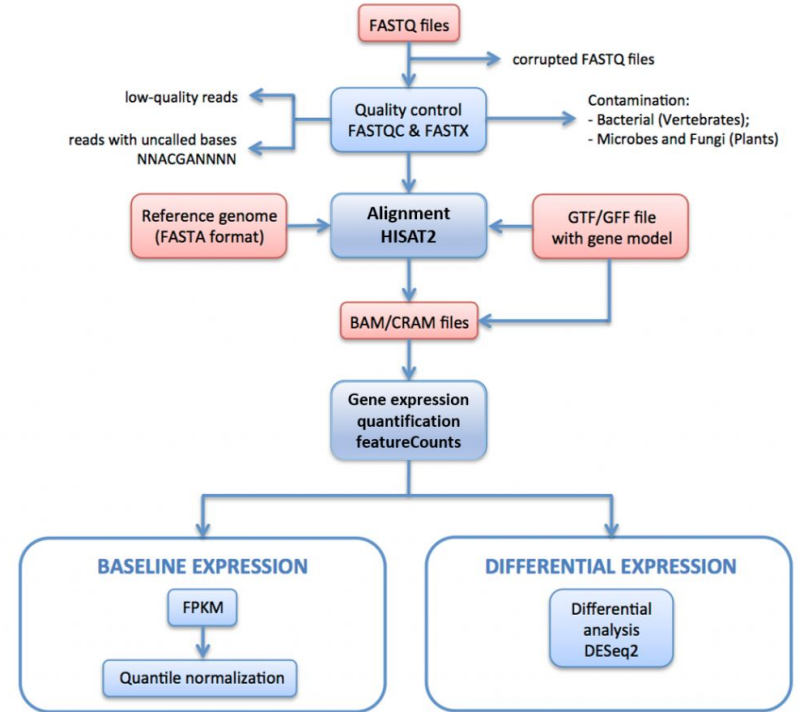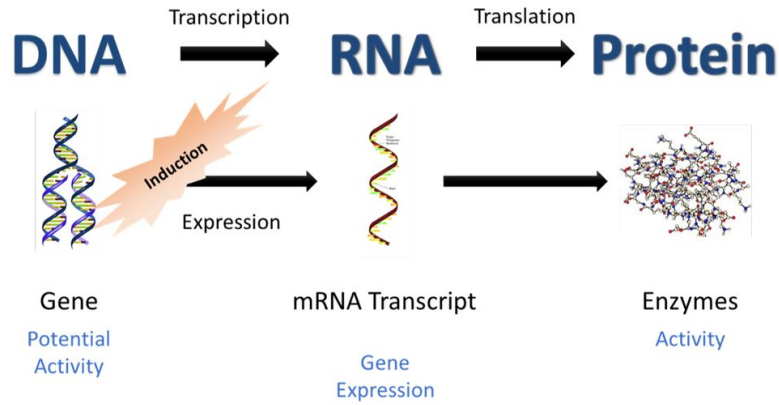# Bora Öden
Past Works and Abroad Experience

Mersin University - Faculty of Medicine

Summer 2022: SciLifeLab - Mardinoğlu Group / Stockholm

July 2022 - Proteomics Literature Review and Analysis

Proteomics Reporting

File Edit View Insert Format Data Tools Extensions Help

Menus · 100% · View only

A1 · Protein

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

Biological samples/Library preparation
↓
Sequence reads
↓ FASTQ
Quality control: FASTQC
↓ FASTQ
(+reference transcriptome index)
Pseudocounts with *Kallisto, Sailfish, Salmon*
↓
Quality control: MultiQC

Count matrix generated using tximport

DGE with R: *DESeq2, EdgeR, limma:voom*

DGE or isoform-level DE with R: *Sleuth*

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®
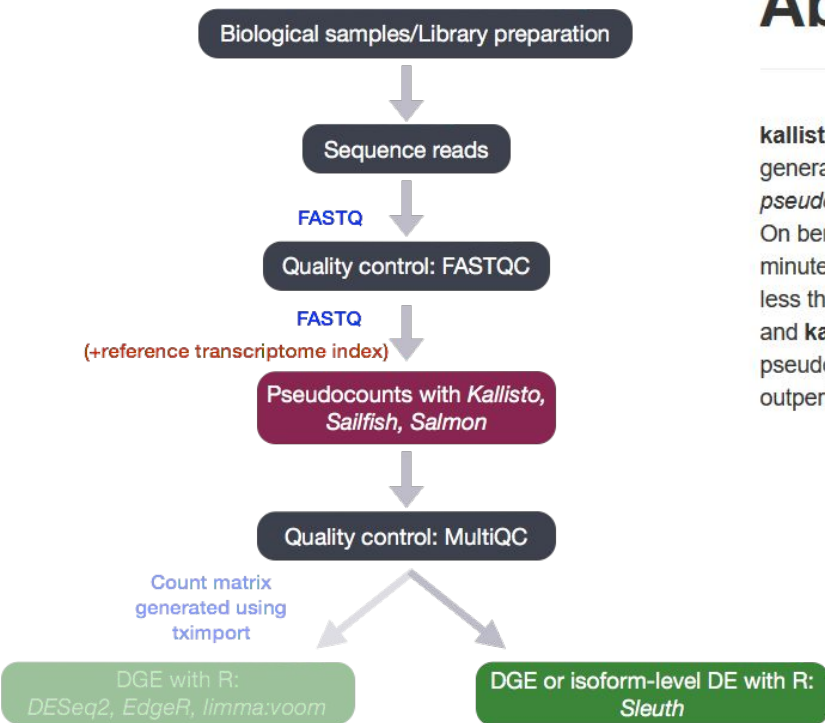
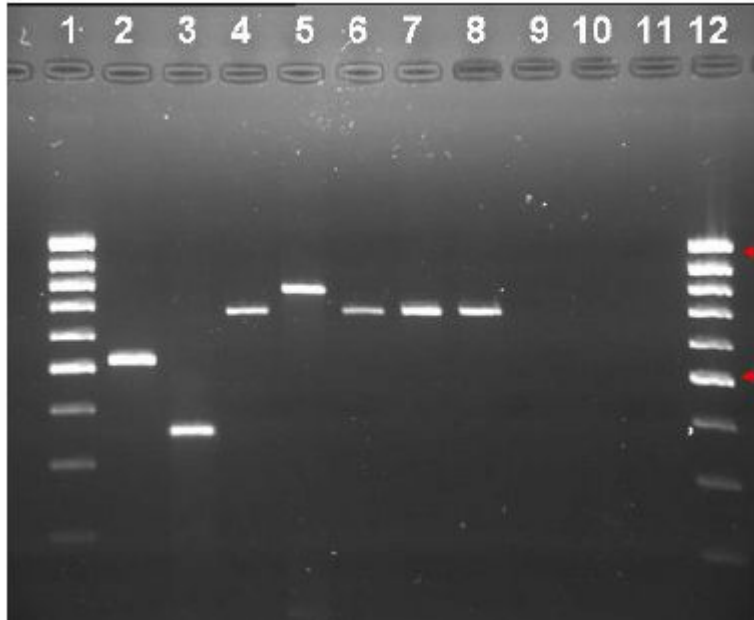**Spring 2023 / Erasmus at University of Pisa Faculty of Medicine**
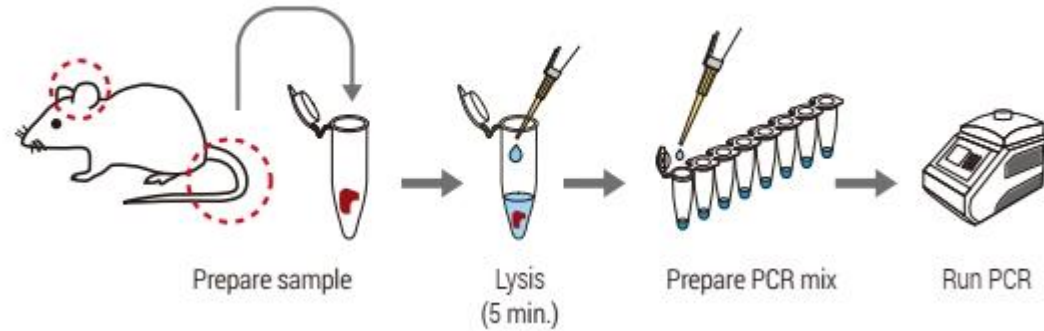
Summer 2023: Universitätsklinikum Ulm

Regenotyping with PCR

Simple Protocol

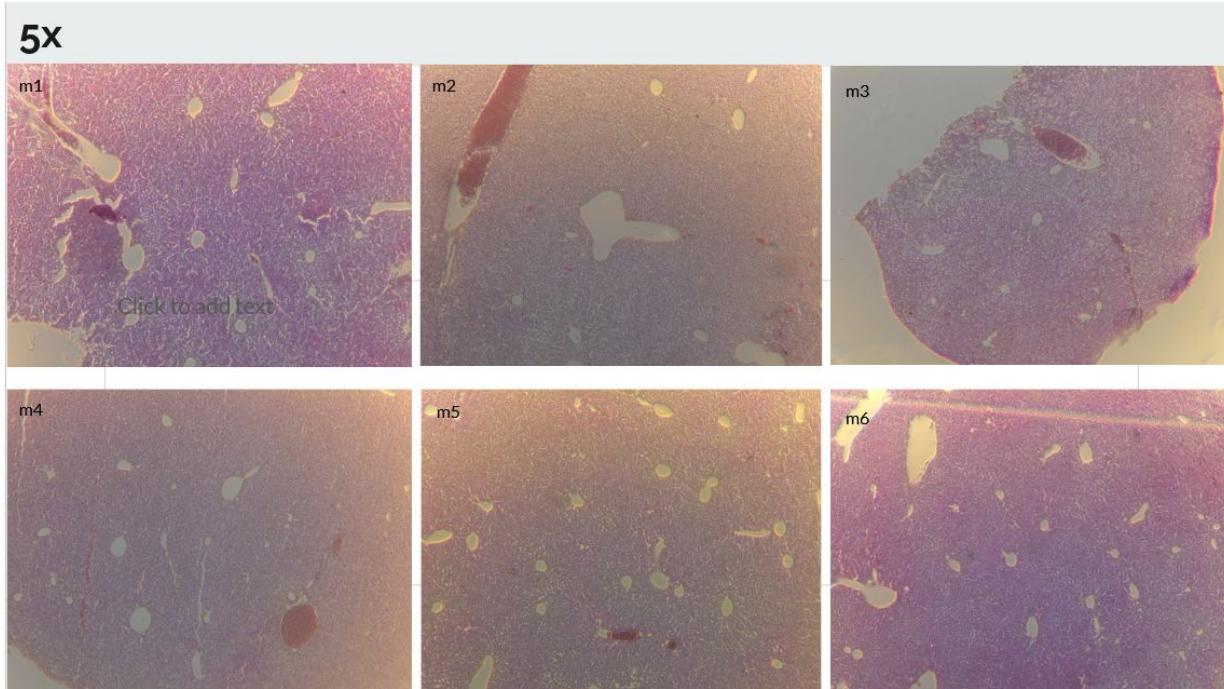Prepare sample   Lysis (5 min.)   Prepare PCR mix   Run PCR

Cell culture of mice macrophages

Mice Livers Histological Examination and Presentation

link to my presentation

the end.

thank you for your attention.