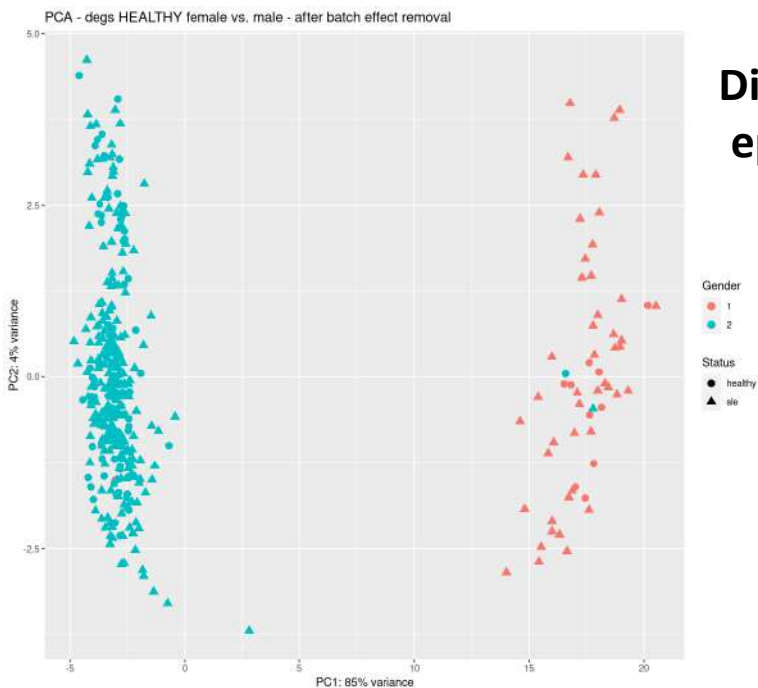




High Throughput Technologies in Rheumatic Diseases – SLE paradigm



Differential transcriptomics and epigenetics on SLE gender bias

Whole Genome Sequencing of SLE mouse model and parental strain (Gender Bias)



New Zealand Black
NZB
hemolytic anemia
anti-dsDNA



New Zealand White
NZW
anti-dsDNA
nephritis

X



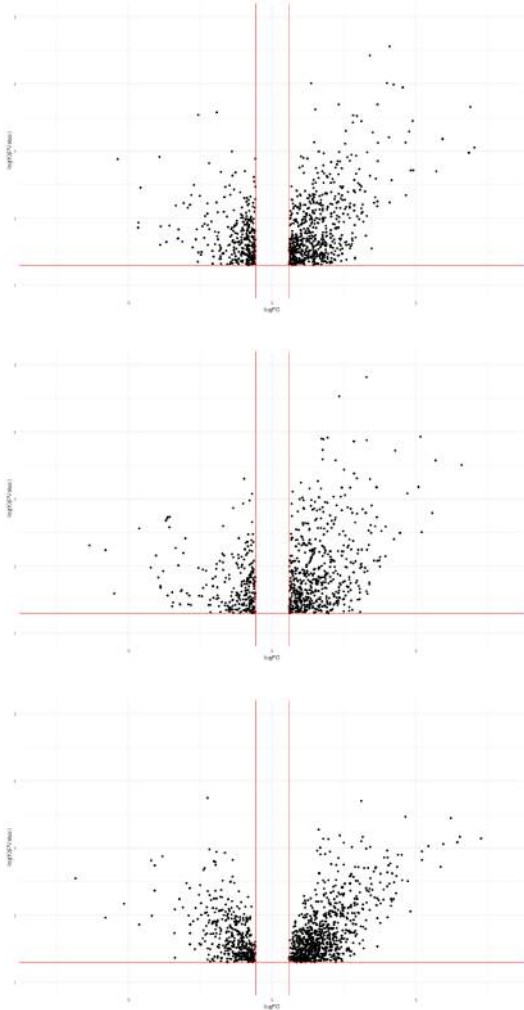
NZB/W F1

Autoimmunity and Inflammation Laboratory
 Boumpas Lab - BRFAA



Aggelos Banos – Maria Grigoriou

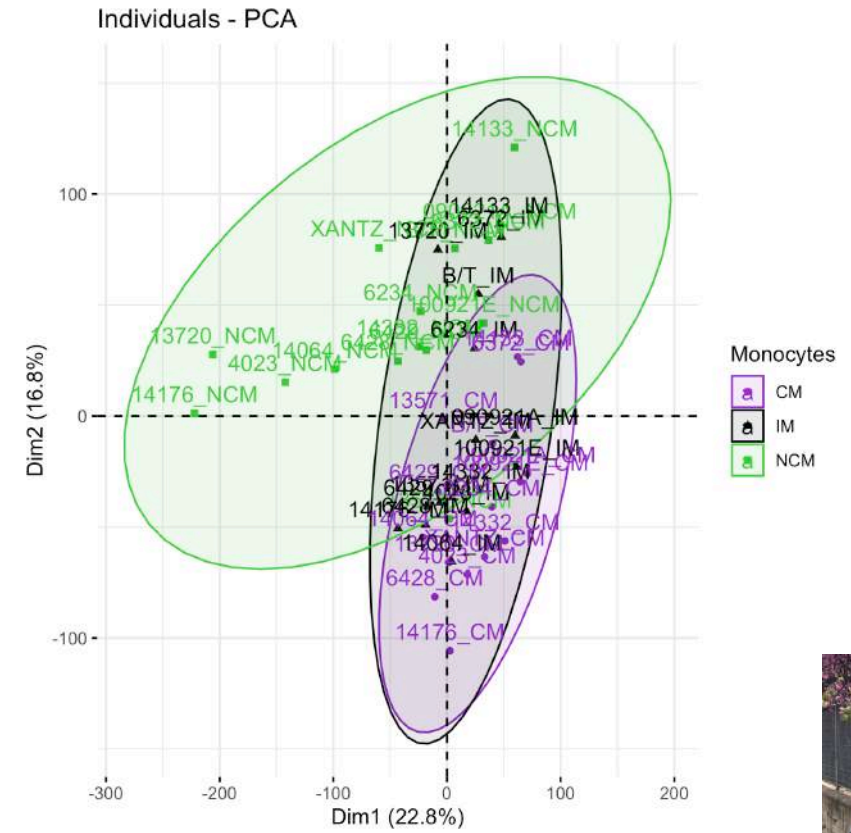
Non-classical monocytes are more susceptible to transcriptome changes within the SLE milieu



Classical monocytes
931 genes are differentially expressed in SLE CMs

Intermediate monocytes
811 genes are differentially expressed in SLE IMs

Non-classical monocytes
1240 genes are differentially expressed in SLE NCMs



Eirini Stergioti

Single Cell Transcriptomics in Bone Marrow derived of SLE patients

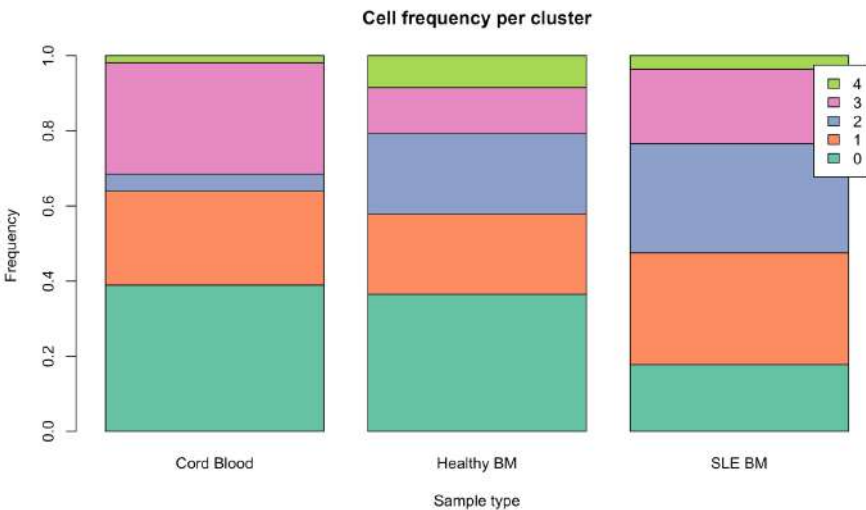
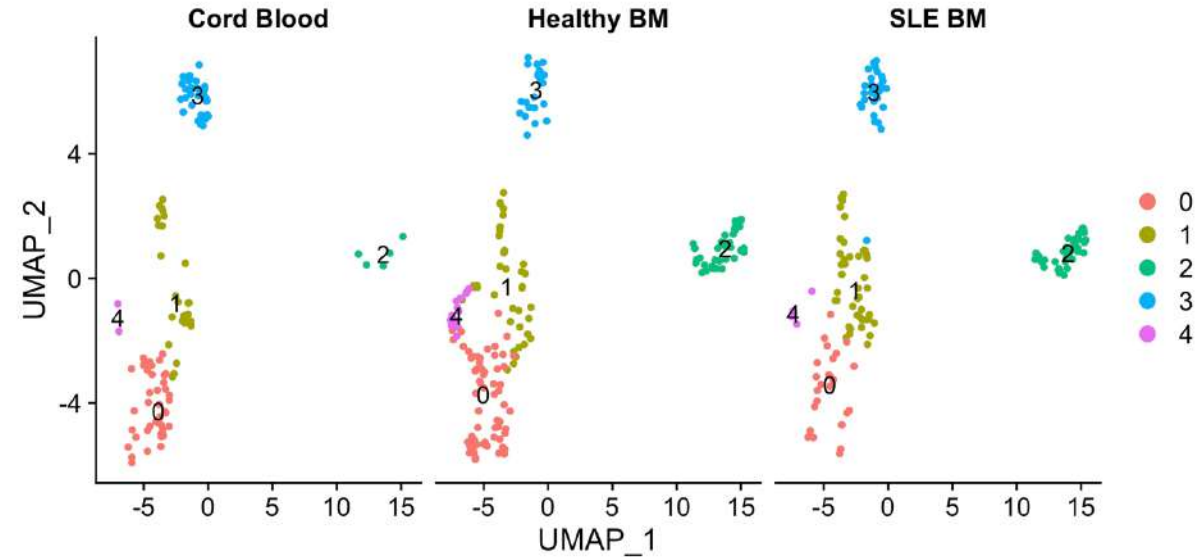
Single-cell RNA sequencing workflow



Trimming using cutadapt
Alignment using Star
Quantification using htseq

Data analysis using
Seurat pkg in R

Quality control
Normalisation
Clustering
Differential expression



0 HSPCs-LMPPs

1 HSPCs

2 Myeloid progenitors

3 T-like progenitors

4 B-like progenitors

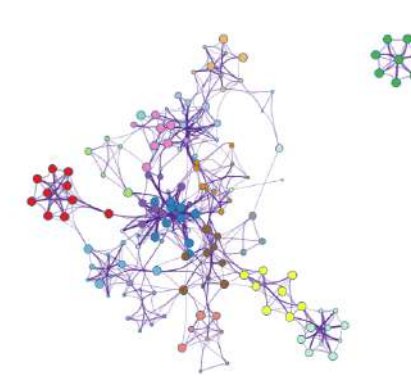
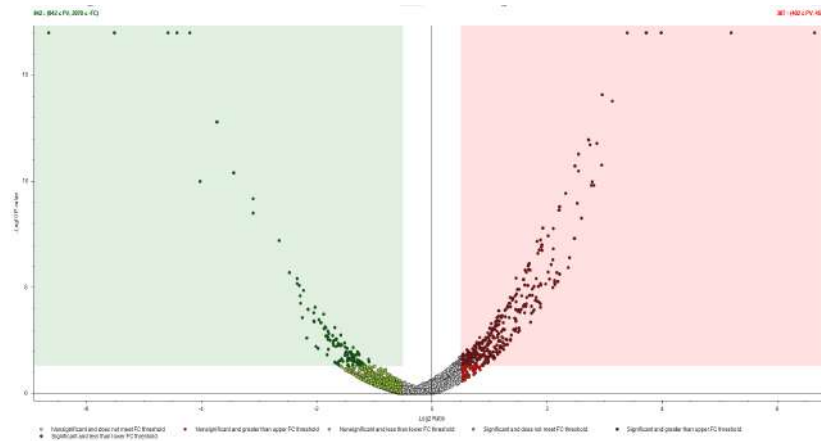
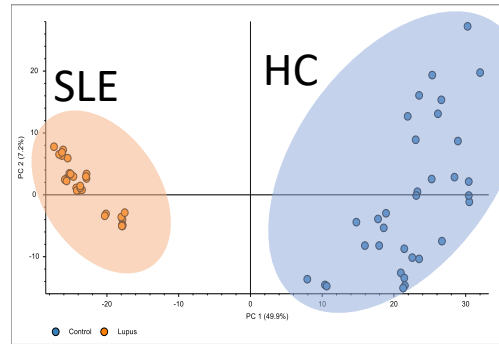


Anastasia Filia – Giannis Kokkinopoulos

Proteomics in peripheral blood immune cell populations (human)

Tandem Mass Spectrometry (MS/MS)

Target: SLE B cells vs. HC B cells

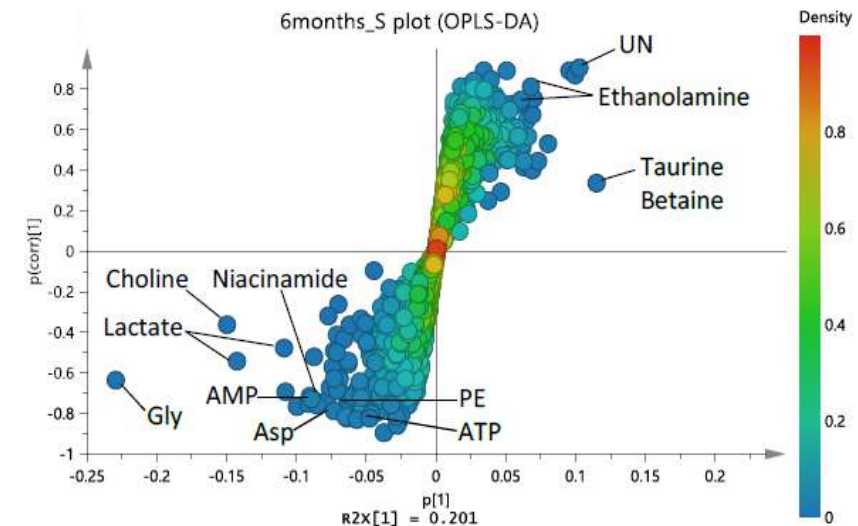
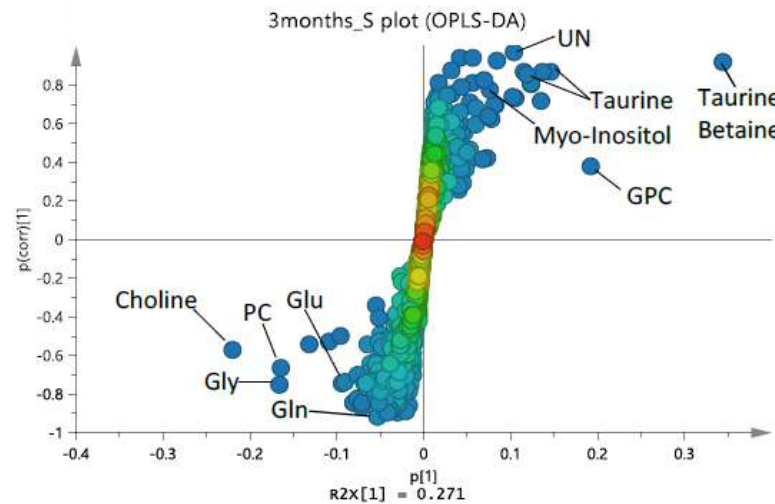


- regulated exocytosis
- Platelet activation, signaling and aggregation
- cornification
- regulation of blood coagulation
- Formation of Fibrin Clot (Clotting Cascade)
- NABA ECM REGULATORS
- Complement and coagulation cascades
- Extracellular matrix organization
- Regulation of Insulin-like Growth Factor (IGF) transpo
- leukocyte migration
- Common Pathway of Fibrin Clot Formation
- Focal adhesion
- regulation of vesicle-mediated transport
- humoral immune response
- supramolecular fiber organization
- regulation of cell activation
- positive regulation of blood coagulation
- maintenance of location
- cell killing
- positive regulation of proteolysis

Metabolomics in SLE-affected tissues (mice)

¹H-NMR spectroscopy

Kidneys from female NZB/NZW-F1 lupus mice (F1) at the pre-nephritic (3-month-old) and nephritic (6-month-old exhibiting ≥ 100 ng/dL of urine protein) stage of lupus. Age-matched female C57BL/6 mice as healthy controls (HC).



Dora Manolakou