



# OmicrionTMU single cell 使用教學

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# 登入OmicsTMU



1. OmicsTMU連結: omics.tmu.edu.tw
2. 請使用北醫或三院e-mail帳號登入OmicsTMU
3. 登入後會看到OmicsTMU OverView頁面

使用 Google 帳戶登入

登入  
繼續使用「omicstmu」

電子郵件地址或電話號碼

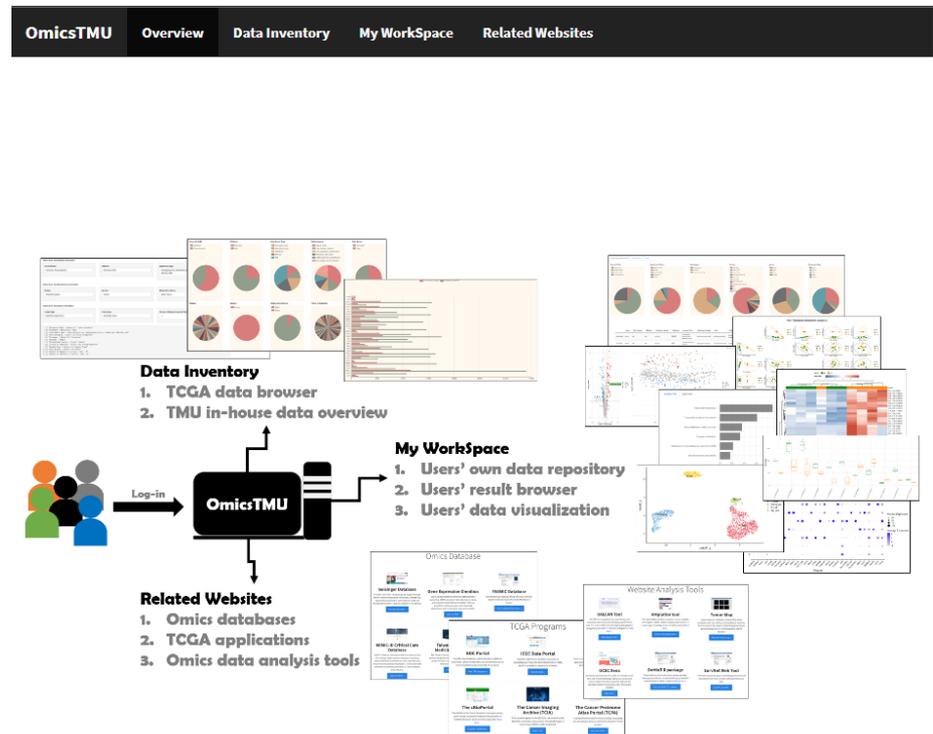
忘記電子郵件地址？

如要繼續進行，Google 會將您的姓名、電子郵件地址、語言偏好設定和個人資料相片提供給「omicstmu」。

建立帳戶 繼續

繁體中文

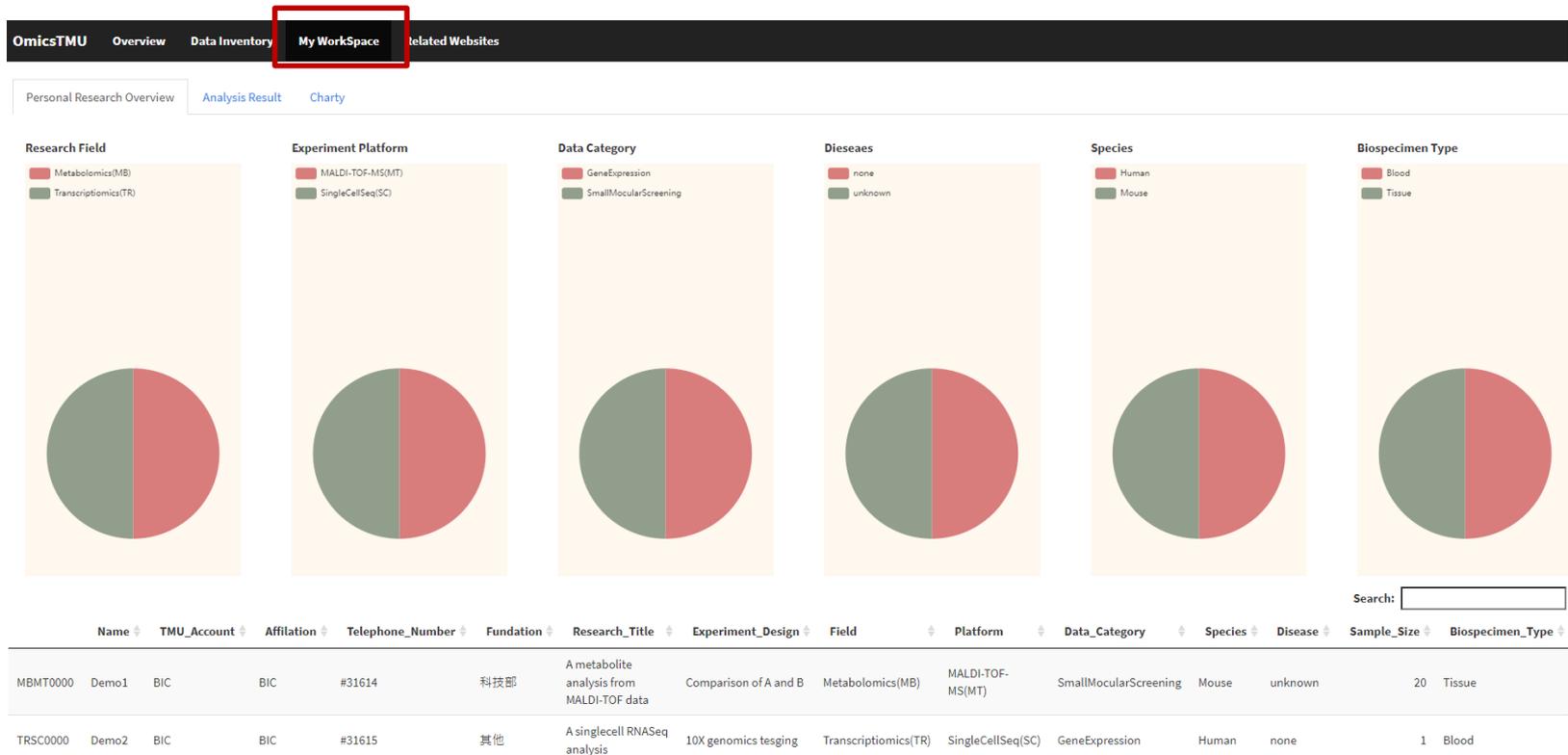
說明 隱私權 條款



# My WorkSpace



點選My WorkSpace，裡面會有老師做過的**研究總覽**及**兩個範例檔** (metabolomics及single cell RNA seq各一個)



# My WorkSpace



## 1. 點選想要查看的分析案

Search:

Name	TMU_Account	Affiliation	Telephone_Number	Fundation	Research_Title	Experiment_Design	Field	Platform	Data_Category
MBMT0000	Demo1	BIC	#31614	科技部	A metabolite analysis from MALDI-TOF data	Comparison of A and B	Metabolomics(MB)	MALDI-TOF-MS(MT)	SmallMocularSc
TRSC0000	Demo2	BIC	#31615	其他	A singlecell RNASeq analysis	10X genomics tesging	Transcriptomics(TR)	SingleCellSeq(SC)	GeneExpression

Show  entries

Previous  Next

[1] "The select project is : TRSC0000"

[Download selected project's data](#)

[Browse selected project's result](#)

## 2. 下載該分析案的結果檔案

## 3. 或於OmicsTMU內觀看分析結果

# Analysis Result

## browse data



在OmicsTMU內觀看分析結果，請進入結果呈現頁面：

### 1. 選取要查看的分析案



Personal Research Overview Analysis Result Charty

Choose a project to present the result

Choose a sub experiment or comparison

### 2. 選取要查看的樣本或比較組別

### 3. 按下browse data瀏覽資料

# Analysis Result

## work flow & data information



### -- Single Cell RNA Sequencing Analysis --

Show SR data analysis workflow

按下show查看single cell RNA seq分析流程

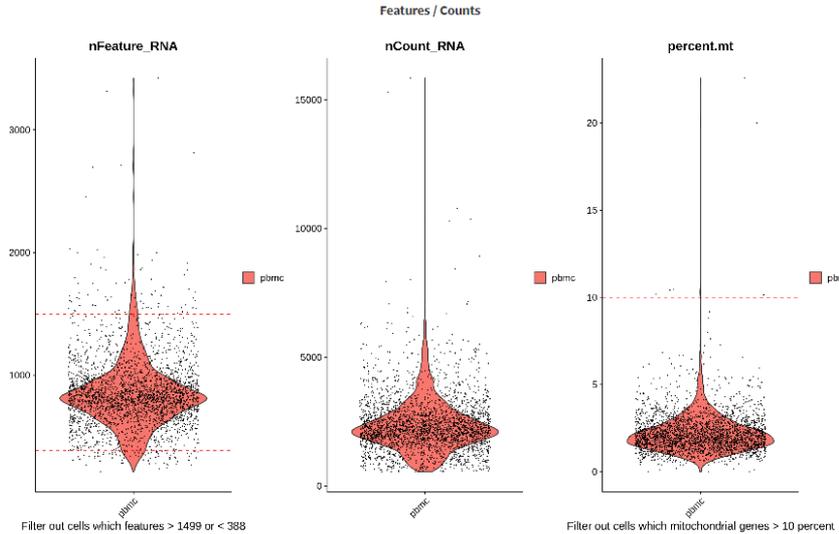
### -- Data Information --

	Number of Cells			
	total_cell_input	cell_filtered	doublet_cell	total_cell_analysed
pbmc	2700	171	40	2489

Data information紀錄QC時刪除的細胞數

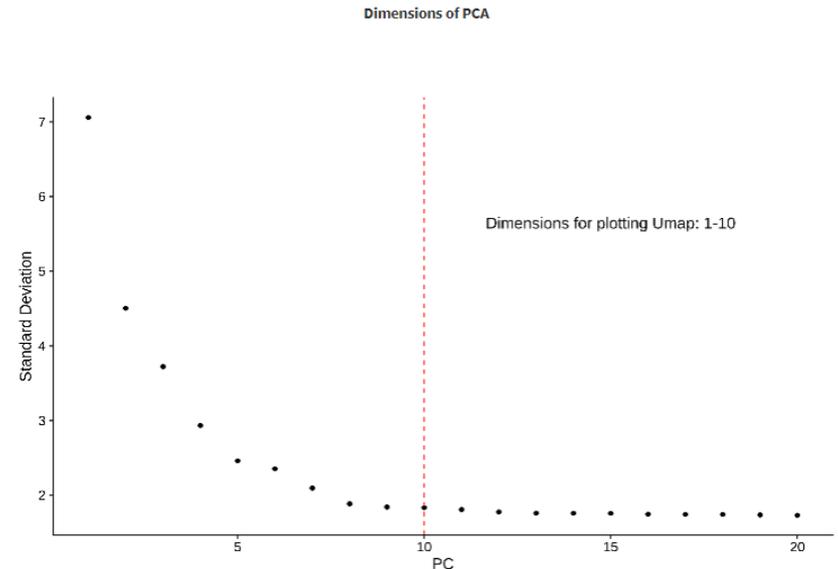
# Analysis Result

## vlnplot & elbowplot



vlnplot記錄每顆細胞的feature數、count數及粒線體比例

使用PCA降維後，elbowplot記錄後續畫umap使用的dimension數



# Analysis Result

## cluster & cell type annotation



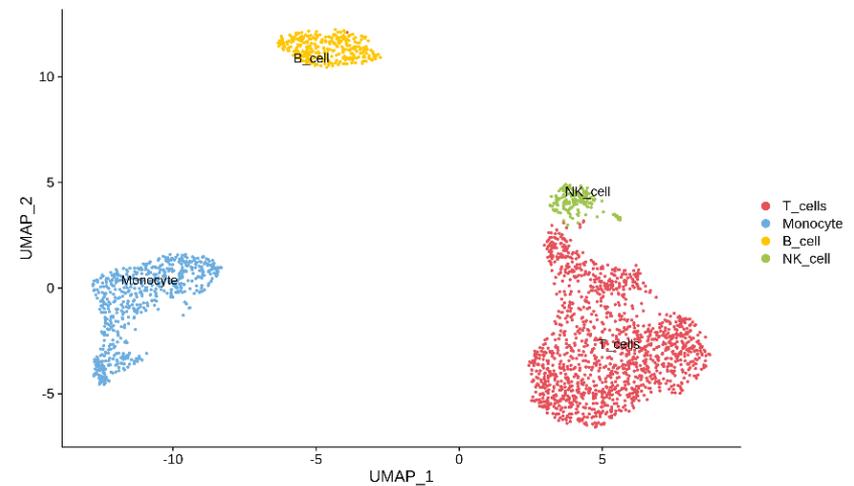
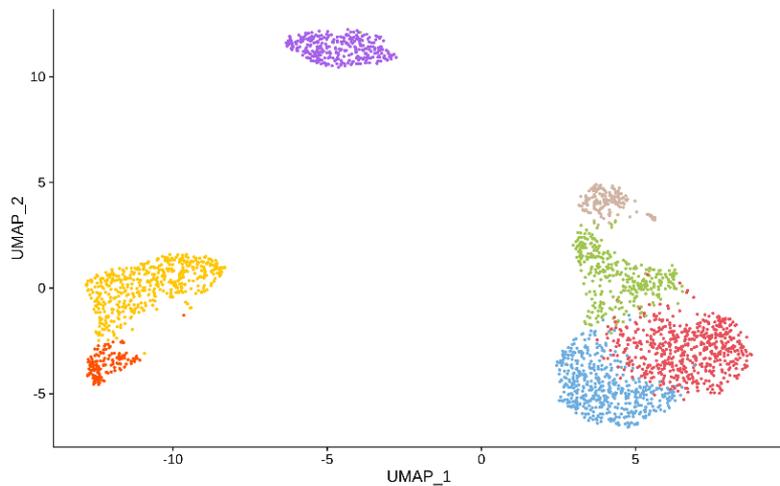
在分析步驟中，我們做了delete doublet cells，其中doublet cells是指在實驗中，一個油滴中包含了兩顆細胞，我們會將這樣的細胞刪除，刪除後剩下的細胞為singlet cell，即最後進入分析的細胞

-- Clustering Analysis and Cell Type Annotation with Umap / tSNE --

Plot Type  
 Total of Cells  Singlet Cells  Singlet and Doublet Cells

Umap  tSNE

可選擇Umap或t-SNE圖



# Analysis Result

## differential expression analysis (volcano plot)



differential expression analysis 計算一個gene在特定cluster對比於其他cluster的平均表現量的log2FoldChange及P-value

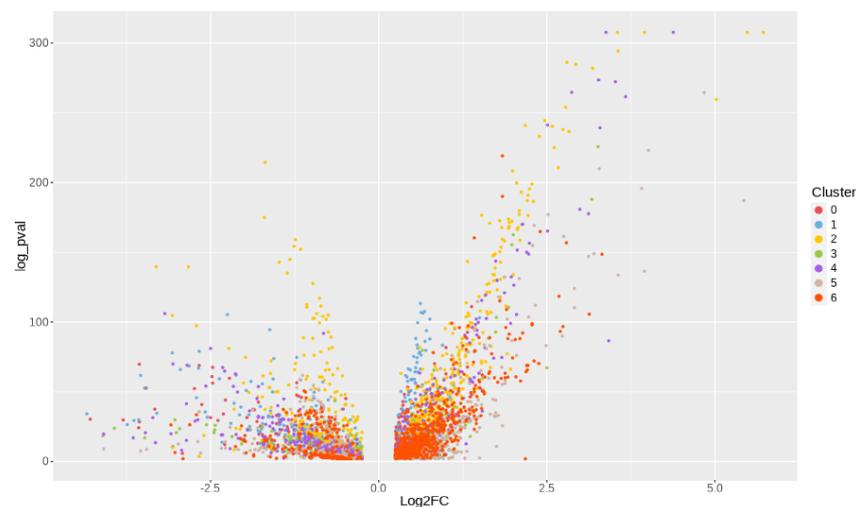
-- Volcano Plot of Differentially Expressed Gene --

Volcano plot with Clustering [with Cell Type Annotation](#)

\*\* only present significant gene

Select clusters

Select All of Clusters



Show 10 entries

Search:

Gene	Cluster	Log2FC	Pvalue
S100A9	0	-4.29	4.19e-31
S100A8	0	-3.8	1.53e-30
LYZ	0	-3.57	5.35e-25
HLA-DRA	0	-3.56	1.53e-70
NKG7	0	-3.56	2.75e-29
TYROBP	0	-3.46	2.18e-53
CST3	0	-3.33	2.72e-38
GNLY	0	-2.92	0.00000145
FCER1G	0	-2.74	4.7e-53
HLA-DRB1	0	-2.67	1.39e-69

Showing 1 to 10 of 6,509 entries

Previous **1** 2 3 4 5 ... 651 Next

# Analysis Result

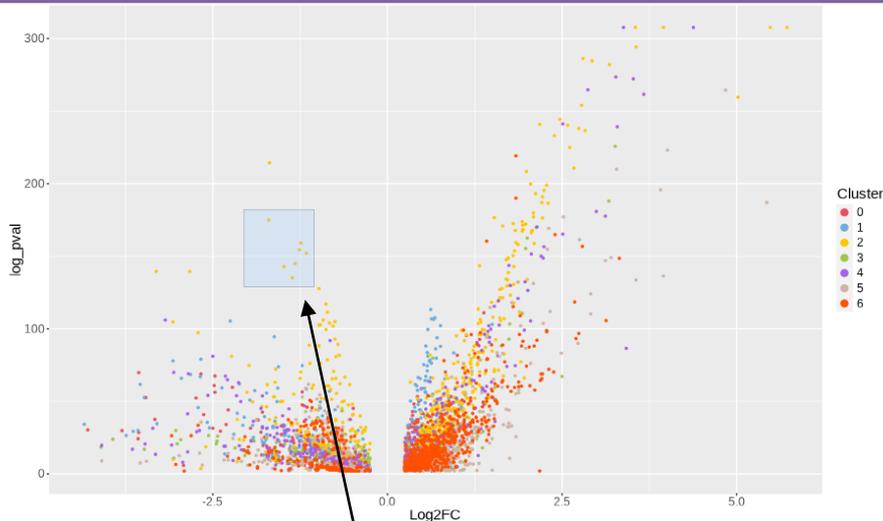
## differential expression analysis (volcano plot)



可以選擇特定的cluster做查看



Select clusters



Show 10 entries

Search:

Gene	Cluster	Log2FC	Pvalue
RPS27A	2	-1.7	1.05e-175
RPSA	2	-1.48	1.19e-143
RPS3A	2	-1.36	7.03e-136
RPL9	2	-1.32	1.06e-145
RPL21	2	-1.26	3.91e-155
RPS27	2	-1.24	9.09e-160
RPL23A	2	-1.16	7.54e-153

Showing 1 to 7 of 7 entries

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也可以用圈選的方式選擇要查看的gene

