SCPline

Make single-cell analysis available to every investigator

SCPline:An interactive shiny framework for the study of single-cell proteomics data preprocessing

SCPline is an integrated one-stop single-cell proteomics data preprocessing analysis tool developed by Guohua Wang Laboratory, aiming to provide efficient data preprocessing analysis for laboratory researchers.

Moudle1：Flow Cytometry Workflow

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```
 class: SingleCellExperiment
dim: 50 1504420
metadata(2): experiment_info chs_by_fcs
assays(2): counts exprs
rownames(50): 75As 102Pd ... Live/Dead 208Pb
rowData names(3): channel_name marker_name marker_class
colnames: NULL
colData names(3): sample_id condition patient_id
reducedDimNames(0):
mainExpName: NULL
altExpNames(0):
```

Below, you can see the basic information about the data structure.

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Normalization

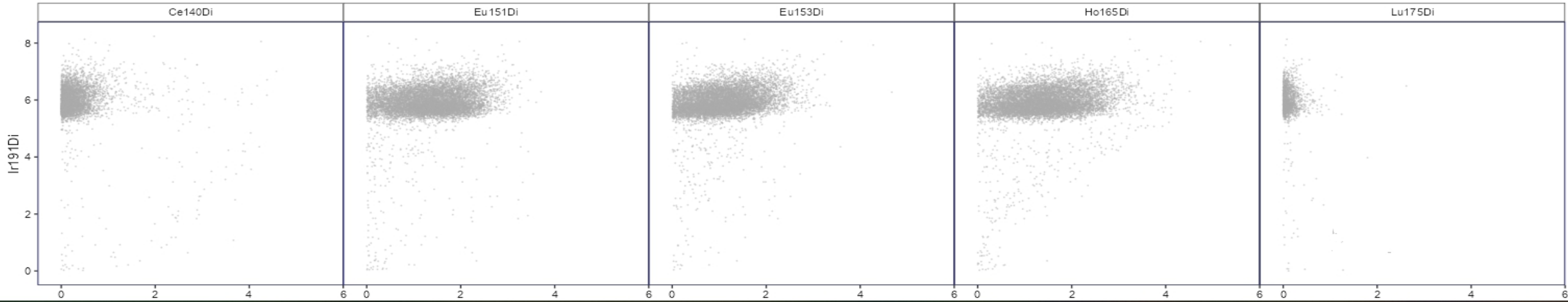This section provides normalization and feature selection.

Normalization

Event.Type	Count	Percentage....
Beads	10	0.00
Removed	2168	0.14

The table shows the standardized relevant data, and the graph shows the standardized scatter plot, which can help to understand the signal strength relationship between different elements in the data and whether they fit the expected distribution pattern.

Normalization Scatter Plot Normalization Line Plot
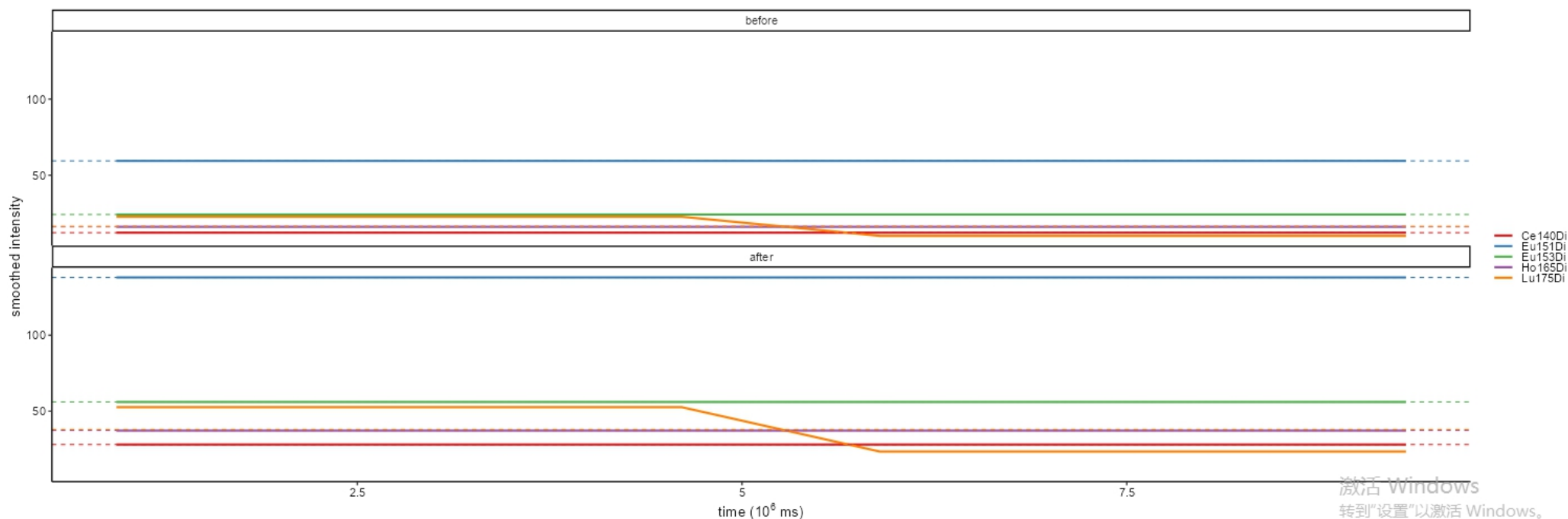
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Flow Cytometry

- Overview
- Upload Data
- Normalization
- Auto Gating
- Statistic
- Main Analysis
- Download Results

Auto Gating

Note: If you selected the example data in previous steps, you can proceed with auto-gating analysis by clicking the button below—no additional configuration needed. If you are using your own data, please upload your custom gating strategy file here to ensure the analysis aligns with your specific experimental setup.

Upload your auto gating strategy file

Browse...	No file selected

Auto Gating

sample	pop	percent
control-03	root	1.00
control-03	/Singlet1	0.97
control-03	/Singlet1/Singlet2	0.96
control-03	/Singlet1/Singlet2/Singlet2	1.00

⬇ Download Gating Results

In this section, please read the text instructions carefully, you can upload your own gating policy file. SCPline provides real-time visualization of the results form on the line, and you can download the form locally.

Moudle1：Flow Cytometry Workflow
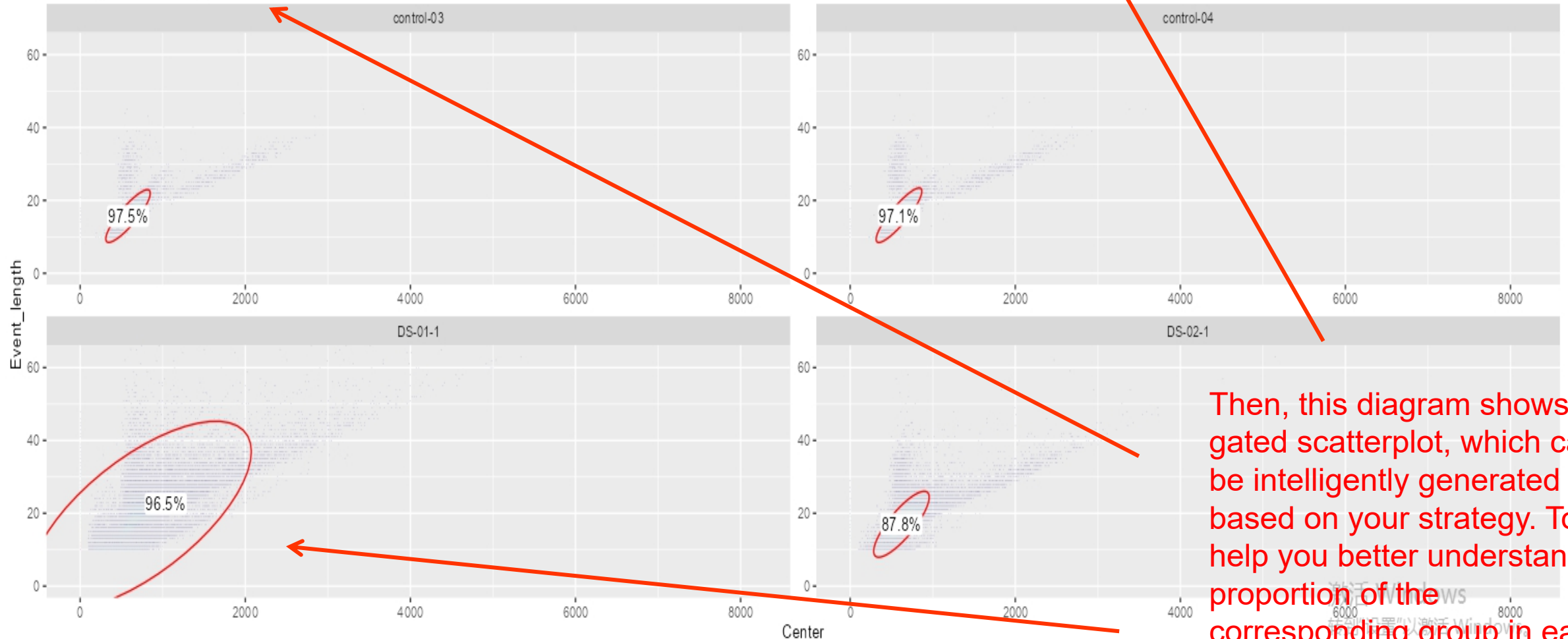
Auto Gating Singlet1　　Auto Gating Singlet2　　Auto Gating Singlet3　　Auto Gating Cells　　Auto Gating final

Gating Plot for: Singlet1

Then, this diagram shows the gated scatterplot, which can be intelligently generated based on your strategy. To help you better understand the proportion of the corresponding group in each sample.
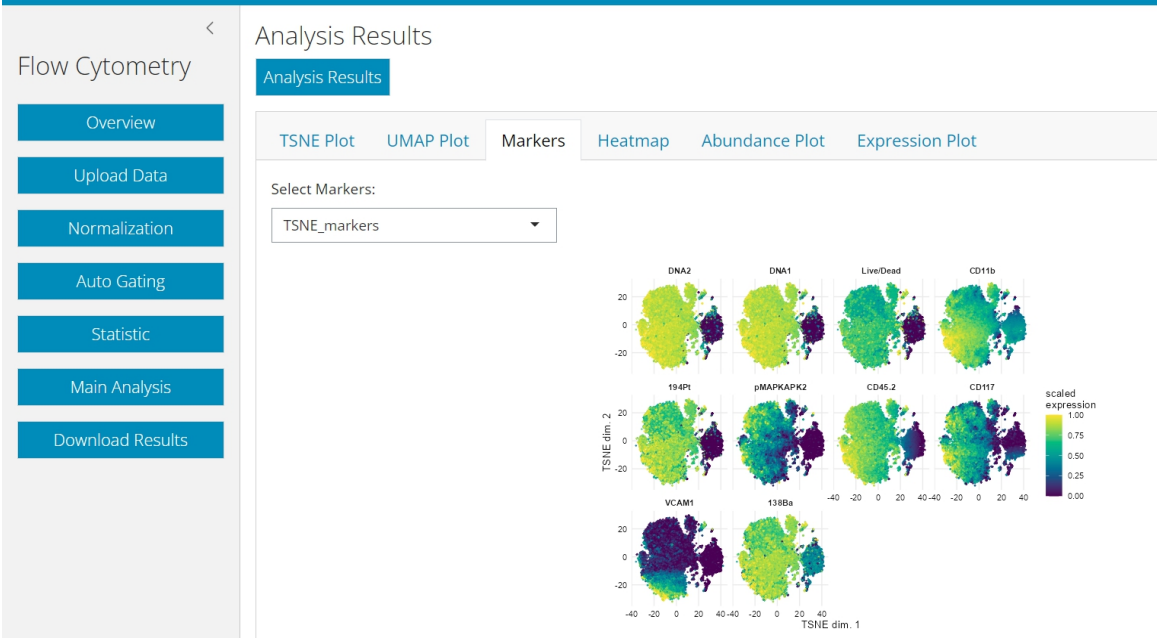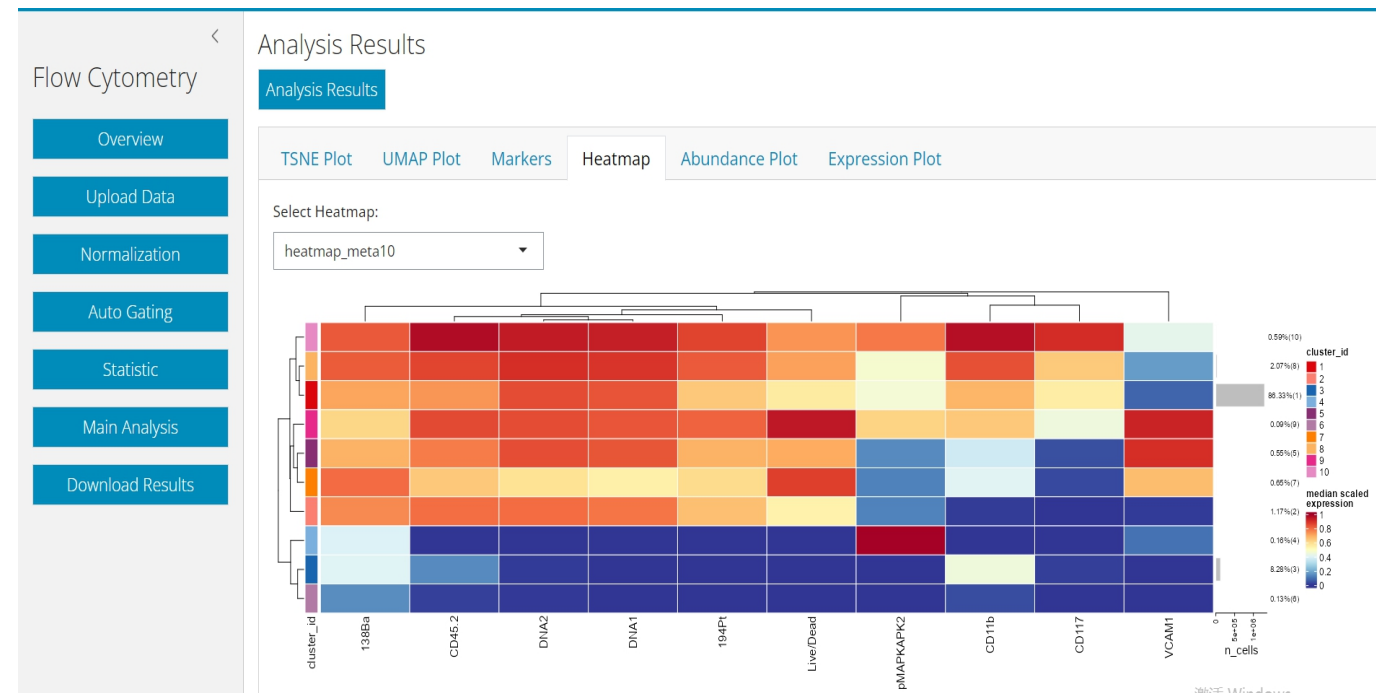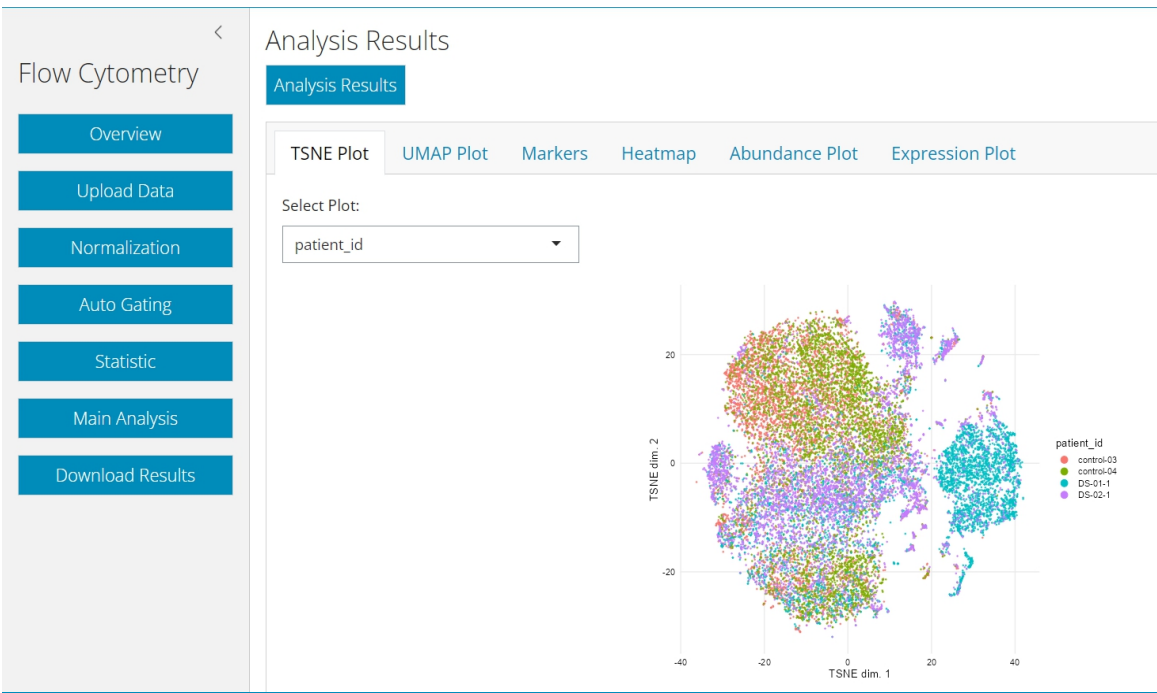
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SCPline provided a variety of visualizations of the processed data to evaluate the differences between samples and the effects of the treatment, and analyzed the flow cytometry data from different angles.
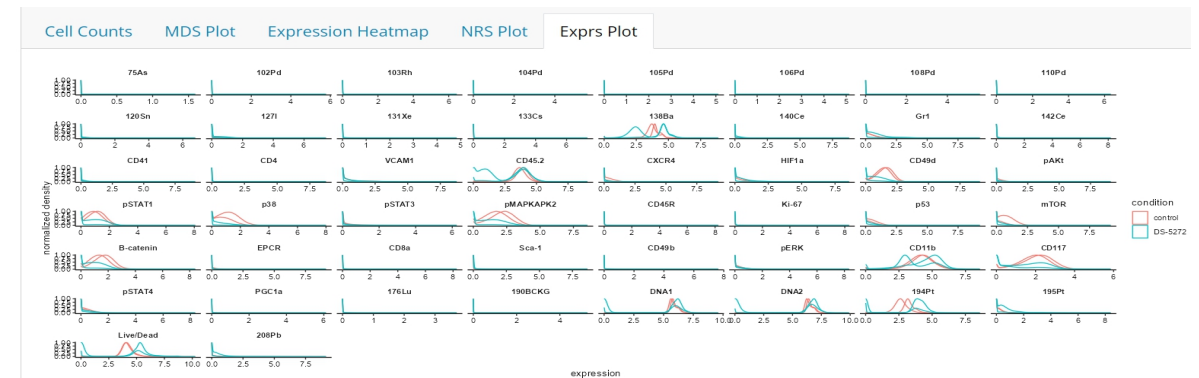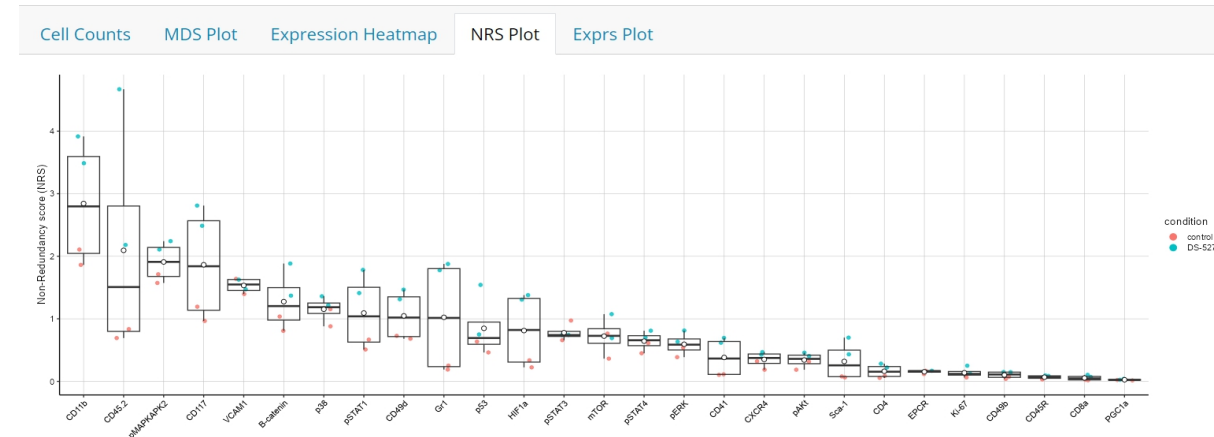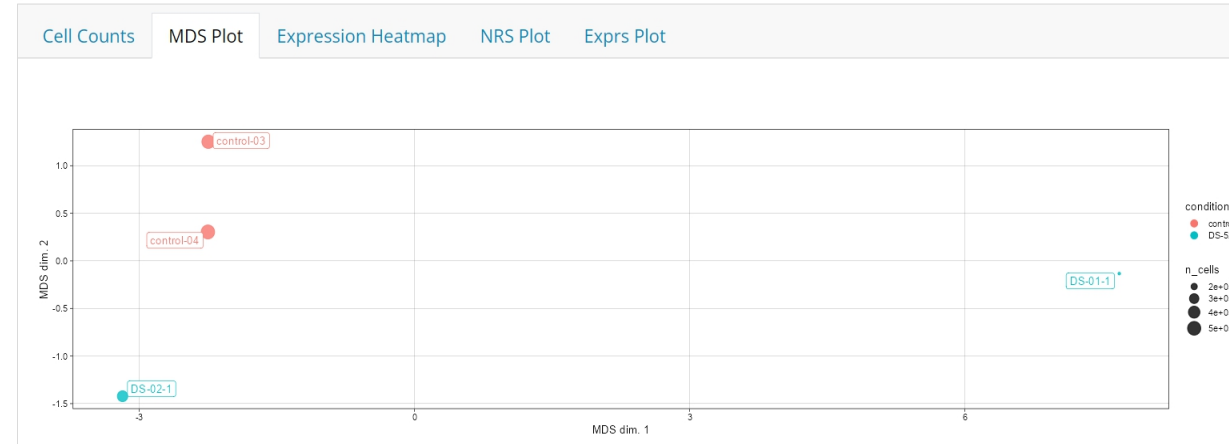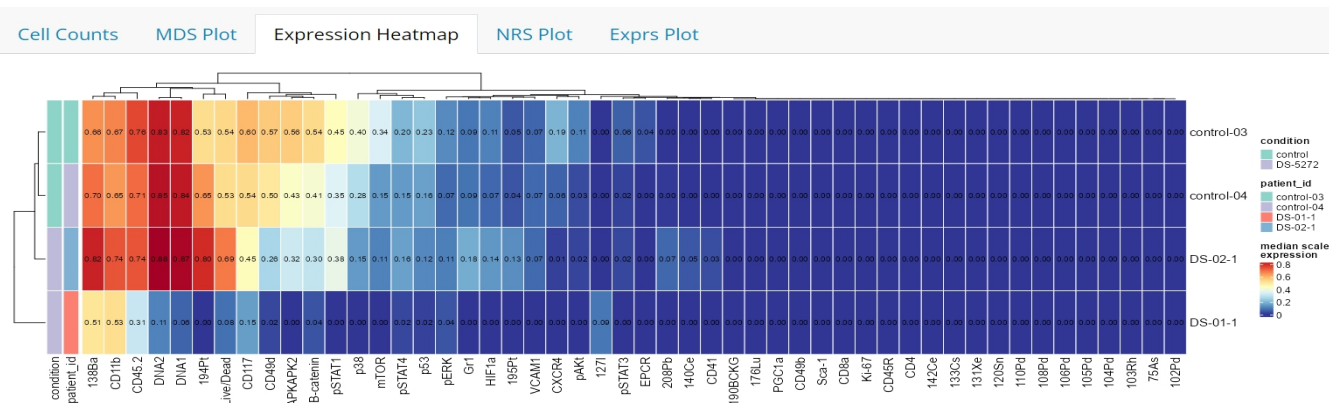
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SCPline provides two dimensionality reduction methods for cluster analysis, and continue to analyze and visualize the data after clustering, perhaps it can help you deeply analyze the characteristics of each group and the changes without experimental conditions.

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Download Results

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Finally,you can click the download button to get the data after the pre-processing process