

Score Genes

Gene scoring based on statistics of their expression profiles or information content about cell types.

Inputs

- Data: input dataset
- Scorer: (multiple) prediction model(s)

Outputs

- Reduced Data: expression data containing selected genes
- Scores: gene scores

The **Score Genes** widget considers gene expression data with genes in columns and single cell expression profiles in rows. It scores the genes based on statistics of gene expression. For examples, it can sort the genes by their mean expression. The widget supports selection of best scored genes and performs gene filtering.

	#	Mean	Variance
N Sept2		9773.115	2400404...
N Gnb2l1		7337.495	1654663...
N Trp53		5446.165	13566214...
N Sept11		4763.962	7082922....
N Usp22		4130.934	5139034....
N Calm2		4110.522	5941462....
N Rif1		3549.121	4793452....
N Ccnb1		3542.698	7254845....
N Ran		2834.198	2081746....
N Nasp		2409.170	1471250....
N Tbrg1		2130.780	1555169....
N Mcm3		2007.176	1664228....
N Uhrf1		1960.912	1456632....
N Mcm7		1677.621	1482770....
N Cdc5l		1551.396	879810.4...
N Zwint		1535.626	1287226....

1. Scoring method. Those selected will be shown in the scoring table.
2. Table with gene scores. Click on the column header to sort by specific score.
3. Gene scoring method. If set to *Manual* than gene selection includes those whose rows in gene scored table are selected (click on rows and use modifier keys). *Best ranked* will include top-ranked genes under selected gene sorting.
4. If *Send Automatically* is ticked, the widget automatically outputs the data according to chosen selection method. This option should be used to automatically update the output of the widget upon any change of the input data set.

Scoring methods

1. Mean: **arithmetic mean** gene expression, computed across all the cells in the input data.
2. Variance: **squared deviation from gene expression mean**
3. Dispersion: the deviation of gene expression variance from the mean, see also **negative binomial distribution**
4. Coefficient of variation: **relative standard deviation** of a gene expression. Measures relative variability of gene expression, and is the ratio of the standard deviation to the mean.