

Step-by-step Guide to Perform Consensus Clustering using FlexStatv1 Pipeline



This feature enables consensus clustering of a expression profile by customizing the clustering algorithm, distance measurements, and linkages

1

Navigate to <https://jglab.shinyapps.io/flexstatv1-pipeline-only/>

2

Go to "Consensus Clustering" tab.

3

Click "Use Sample Data"

FlexStat 1.0

Differential Expression

Automated Differential Expression

Consensus Clustering

Help

Perform Consensus Clustering

Select CSV File

Browse...

No file selected

☒ Use Sample Data

Maximum No. of Clusters

2

6

15

Clust Algorithm

Hierachical Clustering

Distance Measurement

pearson

Sample Data

X	S1	S2	S3
P1	-2.35	-1.22	-0.55
P2	-0.52	-0.42	1.20
P3	1.31	0.25	0.93
P4	-2.01	-1.95	-0.75
P5	0.00	0.00	0.00
P6	-0.33	0.07	0.63
P7	0.00	0.00	0.00
P8	-0.74	-0.46	0.88

- 4 Select maximum number of clusters to generate the consensus clustering matrix.

Perform Consensus Clustering

Select CSV File

Browse...

No file selected

☒ Use Sample Data

Maximum No. of Clusters

2

2

4

6

8

10

12

14

15

Clust Algorithm

Hierarchical Clustering

Distance Measurement

pearson

Inner Linkage

Sample Data

X	S1	S2	S3
P1	-2.35	-1.22	-0.55
P2	-0.52	-0.42	1.20
P3	1.31	0.25	0.93
P4	-2.01	-1.95	-0.75
P5	0.00	0.00	0.00
P6	-0.33	0.07	0.63
P7	0.00	0.00	0.00
P8	-0.74	-0.46	0.88
P9	0.00	0.00	0.00
P10	-1.00	0.37	0.72

- 5 Select clustering algorithm.

Select CSV File

Browse...

No file selected

☒ Use Sample Data

Maximum No. of Clusters

2

4

6

8

10

12

14

15

Clust Algorithm

Hierarchical Clustering

Hierarchical Clustering

Partition Around Medoids Clustering

K-means Clustering

Inner Linkage

ward.D2

Final Linkage

ward.D2

Sample Data

X	S1	S2	S3	S4
P1	-2.35	-1.22	-0.55	0.2
P2	-0.52	-0.42	1.20	1.6
P3	1.31	0.25	0.93	2.1
P4	-2.01	-1.95	-0.75	-2.1
P5	0.00	0.00	0.00	0.0
P6	-0.33	0.07	0.63	2.0
P7	0.00	0.00	0.00	0.0
P8	-0.74	-0.46	0.88	0.1
P9	0.00	0.00	0.00	0.0
P10	-1.00	0.37	0.72	2.7
P11	-0.71	-1.28	-0.23	0.4
P12	0.00	0.00	0.00	0.0
P13	0.00	0.00	0.00	0.0

6 Select distance measurement to define clusters.

Maximum No. of Clusters

2 6 15

Clust Algorithm

Hierarchical Clustering

Distance Measurement

pearson

pearson

spearman

kendall

Final Linkage

ward.D2

Perform Clustering

P1	-2.35	-1.22	-0.55
P2	-0.52	-0.42	1.20
P3	1.31	0.25	0.93
P4	-2.01	-1.95	-0.75
P5	0.00	0.00	0.00
P6	-0.33	0.07	0.63
P7	0.00	0.00	0.00
P8	-0.74	-0.46	0.88
P9	0.00	0.00	0.00
P10	-1.00	0.37	0.72
P11	-0.71	-1.28	-0.23
P12	0.00	0.00	0.00
P13	0.00	0.00	0.00
P14	-0.77	-0.89	0.06
P15	-2.34	0.52	0.49
P16	-0.56	-0.70	0.59

7 Select distance measurement to be used in iterative agglomerative clustering.

2 6 15

Clust Algorithm

Hierarchical Clustering

Distance Measurement

pearson

Inner Linkage

ward.D2

ward.D2

ward.D

single

complete

average

mcquitty

median

centroid

P4	-2.01	-1.95	-0.75
P5	0.00	0.00	0.00
P6	-0.33	0.07	0.63
P7	0.00	0.00	0.00
P8	-0.74	-0.46	0.88
P9	0.00	0.00	0.00
P10	-1.00	0.37	0.72
P11	-0.71	-1.28	-0.23
P12	0.00	0.00	0.00
P13	0.00	0.00	0.00
P14	-0.77	-0.89	0.06
P15	-2.34	0.52	0.49
P16	-0.56	-0.70	0.59
P17	-0.15	-0.02	0.41
P18	0.00	0.00	0.00

8 Select distance measurement to be used in the final agglomerative clustering.

Hierarchical Clustering

Distance Measurement

pearson

Inner Linkage

ward.D2

Final Linkage

ward.D2

ward.D2

ward.D

single

complete

average

mcquitty

median

centroid

P6	-0.33	0.07	0.63
P7	0.00	0.00	0.00
P8	-0.74	-0.46	0.88
P9	0.00	0.00	0.00
P10	-1.00	0.37	0.72
P11	-0.71	-1.28	-0.23
P12	0.00	0.00	0.00
P13	0.00	0.00	0.00
P14	-0.77	-0.89	0.06
P15	-2.34	0.52	0.49
P16	-0.56	-0.70	0.59
P17	-0.15	-0.02	0.41
P18	0.00	0.00	0.00
P19	0.00	0.00	0.00
P20	0.00	0.00	0.00

9 Click "Perform Clustering"

Distance Measurement

pearson

Inner Linkage

ward.D2

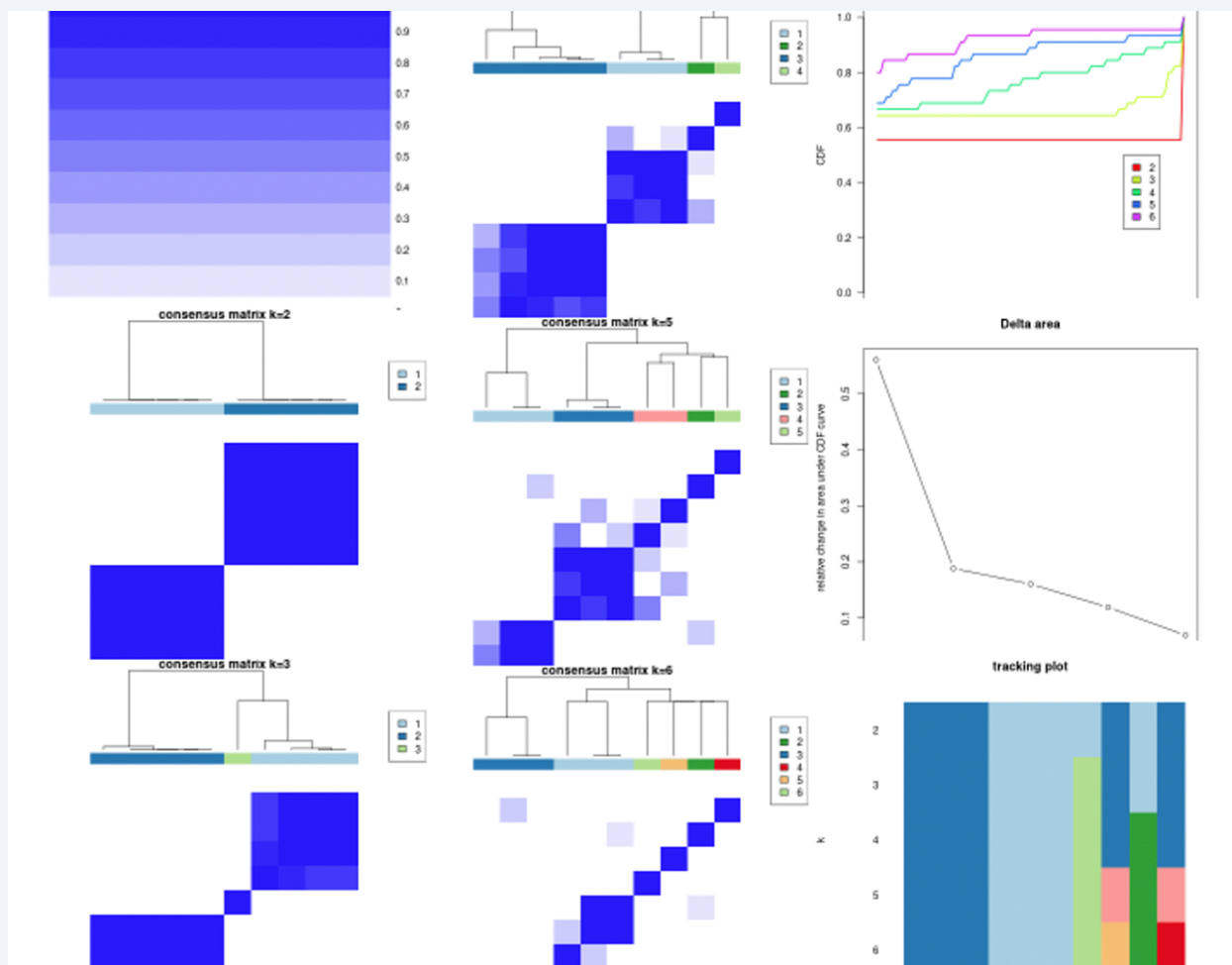
Final Linkage

ward.D2

Perform Clustering

P8	-0.74	-0.46	0.88
P9	0.00	0.00	0.00
P10	-1.00	0.37	0.72
P11	-0.71	-1.28	-0.23
P12	0.00	0.00	0.00
P13	0.00	0.00	0.00
P14	-0.77	-0.89	0.06
P15	-2.34	0.52	0.49
P16	-0.56	-0.70	0.59
P17	-0.15	-0.02	0.41
P18	0.00	0.00	0.00
P19	0.00	0.00	0.00
P20	0.00	0.00	0.00

10 Explore the clustering results.



- 11 Click "download icon" to download the clustering results as a zip file.

pression Automated Differential Expression Consensus Clustering Help

Consensus Clustering

Download Results

consensus matrix legend

- 12 The zip file consists of clustering outcome images and an excel with excel file with cluster assignments.

Search ConsensusClusterResults_2024-01-04 (3)

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The cluster assignments matrix represents samples in rows and cluster number (i.e.1,2,3...) as columns.

	A	B	C	D	E	F	G	H
1		k2	k3	k4	k5	k6		
2	S1	1	1	1	1	1		
3	S2	1	1	2	2	2		
4	S3	2	2	3	3	3		
5	S4	2	2	3	3	4		
6	S5	2	2	3	3	3		
7	S6	1	1	1	1	1		
8	S7	2	2	3	3	3		
9	S8	2	2	3	4	5		
10	S9	1	1	1	1	1		
11	S10	1	3	4	5	6		
12								

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Clusters_k2-k62024-01-04

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