Kruskal-Wallis

The Kruskal-Wallis and Dunn's tests (Non-parametric ANOVA) task is used to identify deferentially expressed genes among two or more groups. Note that such rank-based tests are generally advised for use with larger sample sizes.

Running the task

To invoke the Kruskal-Wallis test, select any count-based data nodes, these include:

- Gene counts
- Transcript counts
- Normalized counts

Select *Statistics > Differential analysis* in the context-sensitive menu, then select *Kruskal-Wallis* (Figure 1).

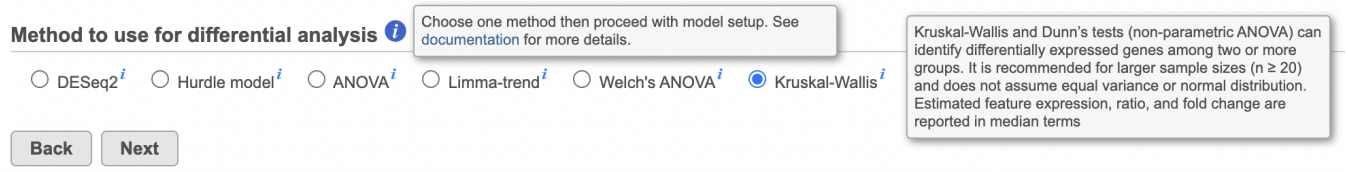


Figure 6. Select any count node to invoke the Non-parametric ANOVA task

Select a specific factor for analysis and click the **Next** button (Figure 2). Note that this task can only take into account one factor at a time.

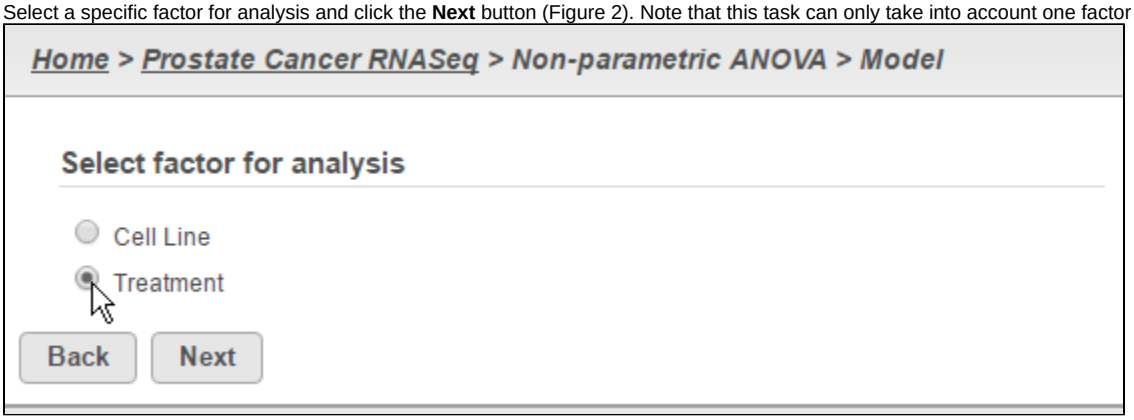


Figure 7. Select one factor for analysis

For more complicated experimental designs, go back to the original count data that will be used as input and perform **Rank normalization** at the *Features* level (Figure 3). The resulting *Normalized counts* data node can then be analyzed using the **Detect differential expression (ANOVA)** task, which can take into account multiple factors as well as interactions.

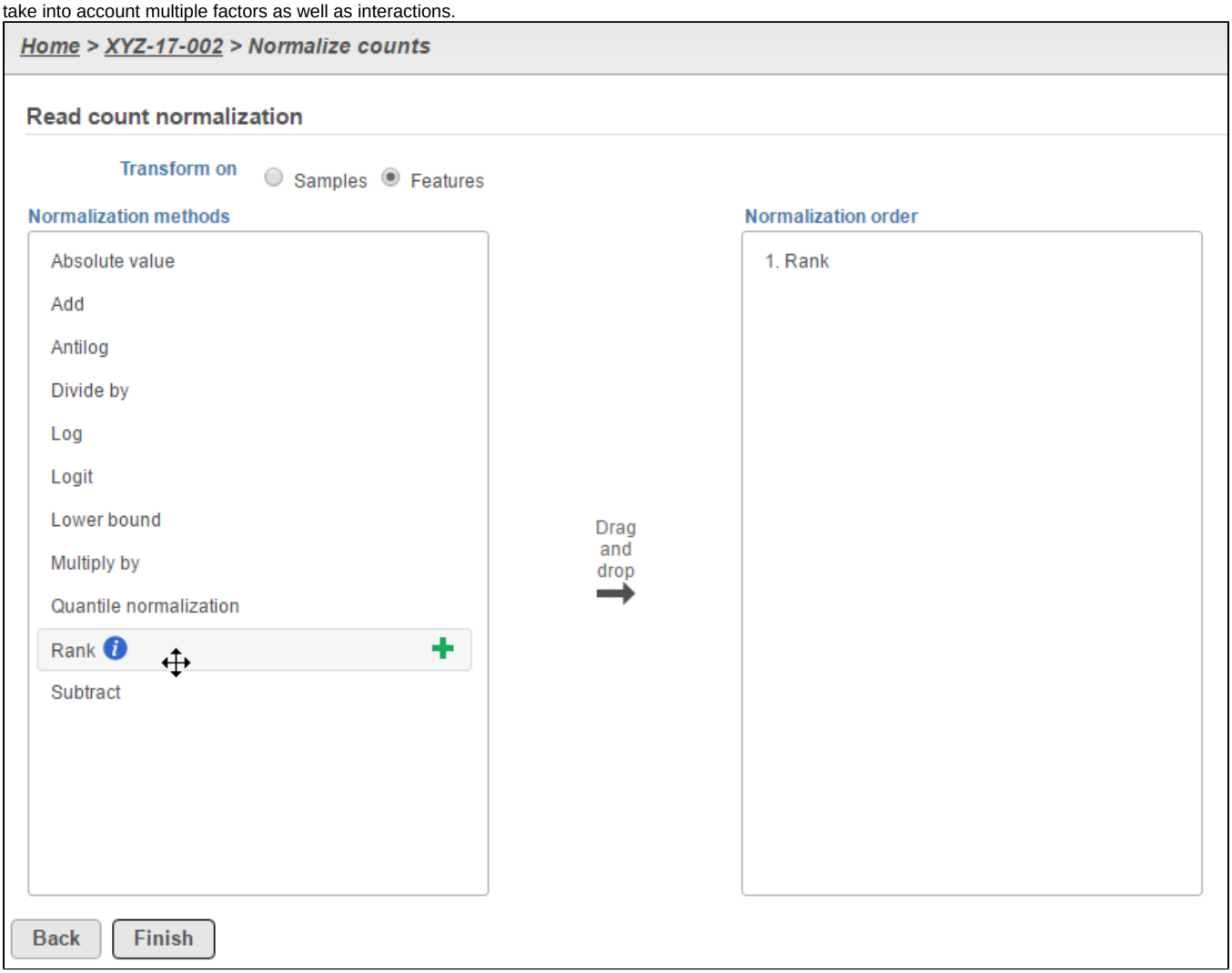


Figure 8. Normalize your count data by rank to do non-parametric testing on more complicated experimental designs

Define the desired comparisons between groups and click the **Finish** button (Figure 4). Note that comparisons can only be added between single group (i. e. one group per box).

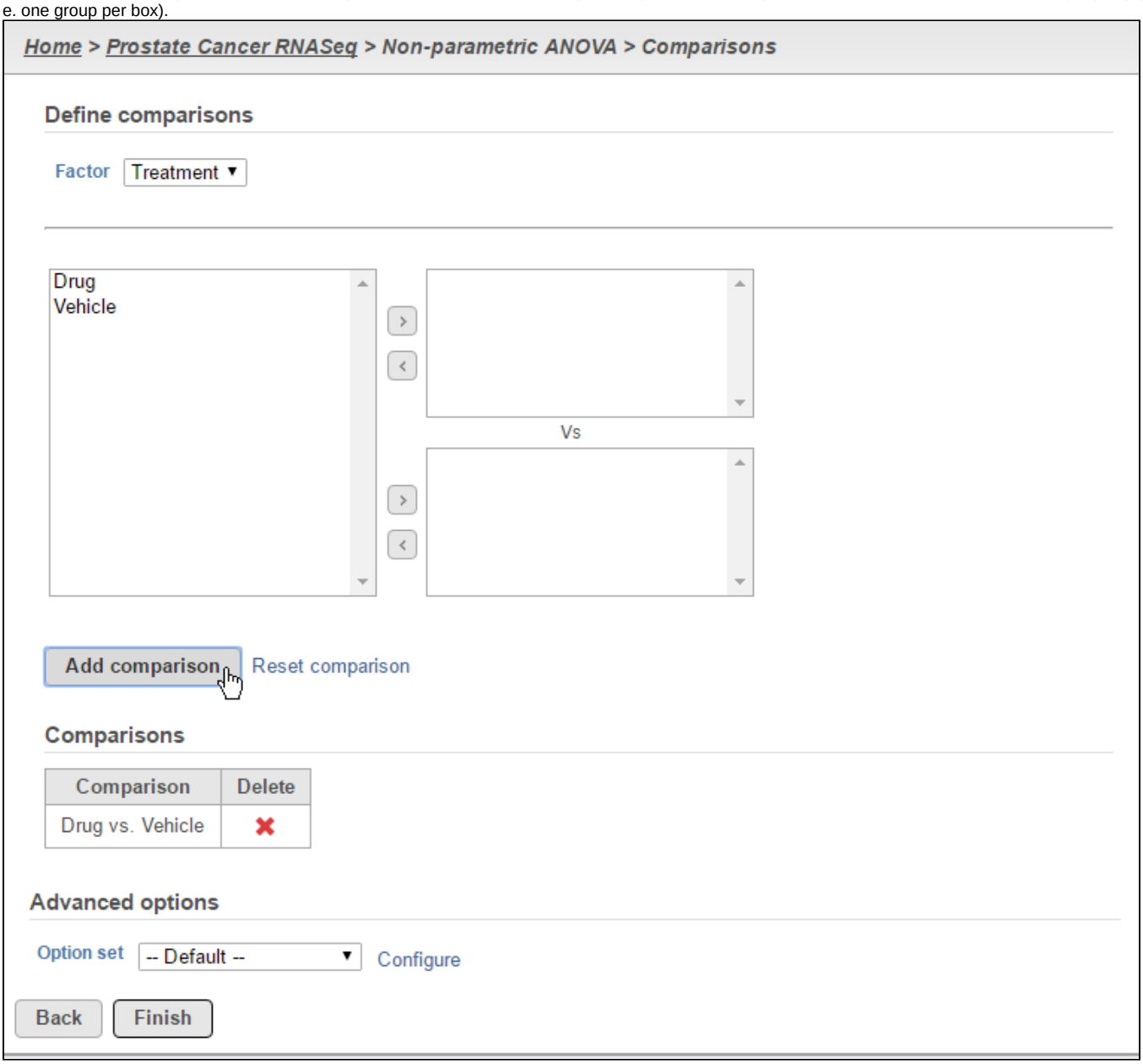
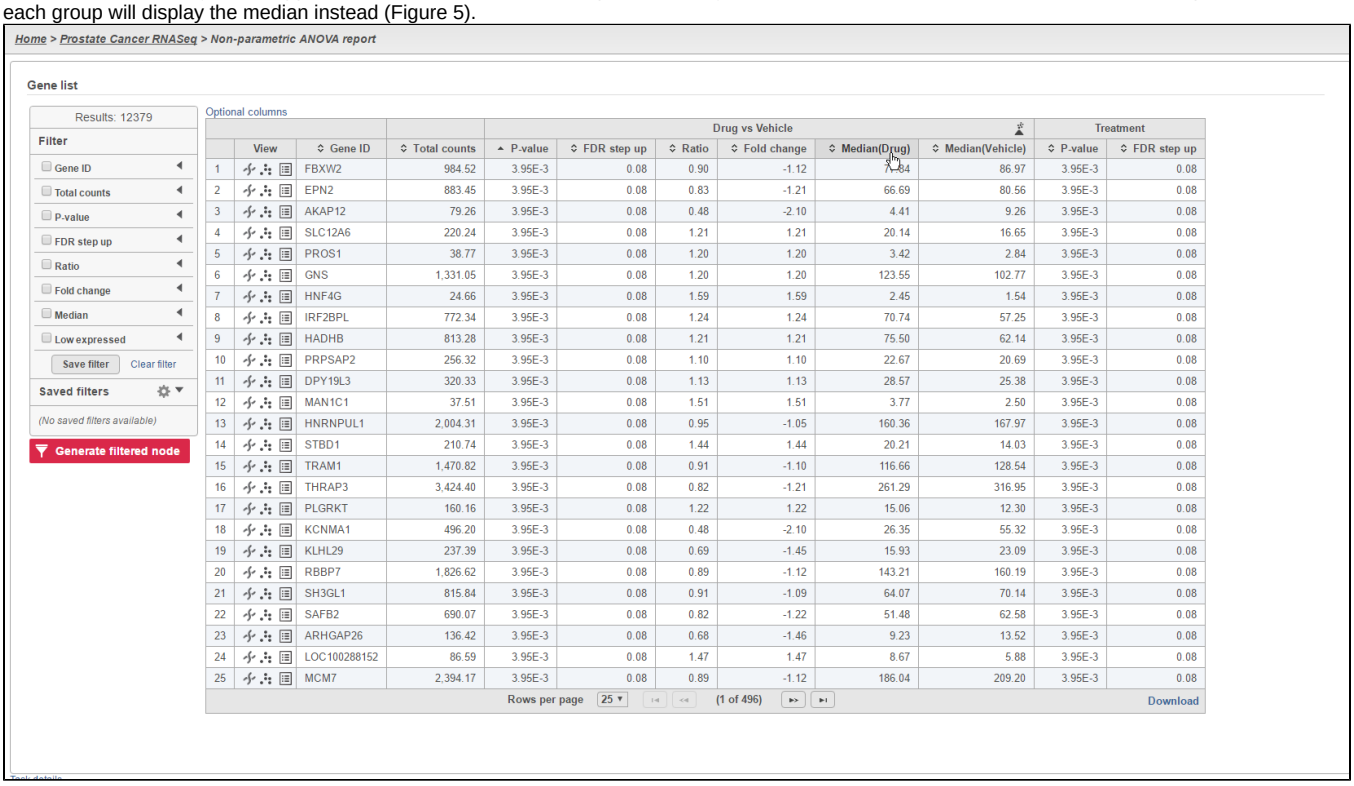


Figure 9. Set-up desired comparisons

Report

The results of the analysis will appear similar to other differential expression analysis results. However, the column to indicate mean expression levels for each group will display the median instead (Figure 5).



Home > Prostate Cancer RNASeq > Non-parametric ANOVA report

Gene list

Results: 12379

Filter

Gene ID
Total counts
P-value
FDR step up
Ratio
Fold change
Median
Low expressed

Save filter | Clear filter

Saved filters

(No saved filters available)

Generate filtered node

Optional columns

				Drug vs Vehicle						Treatment	
	View	Gene ID	Total counts	P-value	FDR step up	Ratio	Fold change	Median(Drug)	Median(Vehicle)	P-value	FDR step up
1		FBXW2	984.52	3.95E-3	0.08	0.90	-1.12	77.84	86.97	3.95E-3	0.08
2		EPN2	883.45	3.95E-3	0.08	0.83	-1.21	66.69	80.56	3.95E-3	0.08
3		AKAP12	79.26	3.95E-3	0.08	0.48	-2.10	4.41	9.26	3.95E-3	0.08
4		SLC12A6	220.24	3.95E-3	0.08	1.21	1.21	20.14	16.65	3.95E-3	0.08
5		PROS1	38.77	3.95E-3	0.08	1.20	1.20	3.42	2.84	3.95E-3	0.08
6		GNS	1,331.05	3.95E-3	0.08	1.20	1.20	123.55	102.77	3.95E-3	0.08
7		HNF4G	24.66	3.95E-3	0.08	1.59	1.59	2.45	1.54	3.95E-3	0.08
8		IRF2BPL	772.34	3.95E-3	0.08	1.24	1.24	70.74	57.25	3.95E-3	0.08
9		HADHB	813.28	3.95E-3	0.08	1.21	1.21	75.50	62.14	3.95E-3	0.08
10		PRPSAP2	256.32	3.95E-3	0.08	1.10	1.10	22.67	20.69	3.95E-3	0.08
11		DPY19L3	320.33	3.95E-3	0.08	1.13	1.13	28.57	25.38	3.95E-3	0.08
12		MAN1C1	37.51	3.95E-3	0.08	1.51	1.51	3.77	2.50	3.95E-3	0.08
13		HNRNPUL1	2,004.31	3.95E-3	0.08	0.95	-1.05	160.36	167.97	3.95E-3	0.08
14		STBD1	210.74	3.95E-3	0.08	1.44	1.44	20.21	14.03	3.95E-3	0.08
15		TRAM1	1,470.82	3.95E-3	0.08	0.91	-1.10	116.66	128.54	3.95E-3	0.08
16		THRAP3	3,424.40	3.95E-3	0.08	0.82	-1.21	261.29	316.95	3.95E-3	0.08
17		PLGRKT	160.16	3.95E-3	0.08	1.22	1.22	15.06	12.30	3.95E-3	0.08
18		KCNMA1	496.20	3.95E-3	0.08	0.48	-2.10	26.35	55.32	3.95E-3	0.08
19		KLHL29	237.39	3.95E-3	0.08	0.69	-1.45	15.93	23.09	3.95E-3	0.08
20		RBBP7	1,826.62	3.95E-3	0.08	0.89	-1.12	143.21	160.19	3.95E-3	0.08
21		SH3GL1	815.84	3.95E-3	0.08	0.91	-1.09	64.07	70.14	3.95E-3	0.08
22		SAFB2	690.07	3.95E-3	0.08	0.82	-1.22	51.48	62.58	3.95E-3	0.08
23		ARHGAP26	136.42	3.95E-3	0.08	0.68	-1.46	9.23	13.52	3.95E-3	0.08
24		LOC100288152	86.59	3.95E-3	0.08	1.47	1.47	8.67	5.88	3.95E-3	0.08
25		MCM7	2,394.17	3.95E-3	0.08	0.89	-1.12	186.04	209.20	3.95E-3	0.08

Rows per page 25 (1 of 496) Download

Figure 10. The task's ANOVA report will display the median instead of the LSmean

Additional Assistance

If you need additional assistance, please visit our support page to submit a help ticket or find phone numbers for regional support.

Your Rating: Results: 41 rates