

Kruskal-Wallis

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The Kruskal-Wallis and Dunn's tests (Non-parametric ANOVA) task is used to identify differentially 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).

Method to use for differential analysis Choose one method then proceed with model setup. See [documentation](#) for more details.

☐ DESeq2 ⁱ ☐ Hurdle model ⁱ ☐ ANOVA ⁱ ☐ Limma-trend ⁱ ☐ Welch's ANOVA ⁱ ☒ Kruskal-Wallis ⁱ

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Kruskal-Wallis and Dunn's tests (non-parametric ANOVA) can identify differentially expressed genes among two or more groups. It is recommended for larger sample sizes ($n \geq 20$) and does not assume equal variance or normal distribution. Estimated feature expression, ratio, and fold change are reported in median terms

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.

[Home](#) > [Prostate Cancer RNASeq](#) > [Non-parametric ANOVA](#) > [Model](#)

Select factor for analysis

☐ Cell Line

☒ Treatment

[Back](#) [Next](#)

Figure 7. Select one factor for analysis

[Home](#) > [XYZ-17-002](#) > [Normalize counts](#)

Read count normalization

Transform on ☐ Samples ☒ Features

Normalization methods

Absolute value

Add

Antilog

Divide by

Log

Logit

Lower bound

Multiply by

Quantile normalization

Rank i +

Subtract

Drag and drop →

Normalization order

1. Rank

Back

Finish

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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).

Home > Prostate Cancer RNASeq > Non-parametric ANOVA > Comparisons

Define comparisons

Factor Treatment

Drug
Vehicle

>

<

Vs

>

<

Add comparison

Reset comparison

Comparisons

Comparison	Delete
Drug vs. Vehicle	✖

Advanced options

Option set -- Default --

Configure

Back

Finish

Figure 9. Set-up desired comparisons

Report

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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).

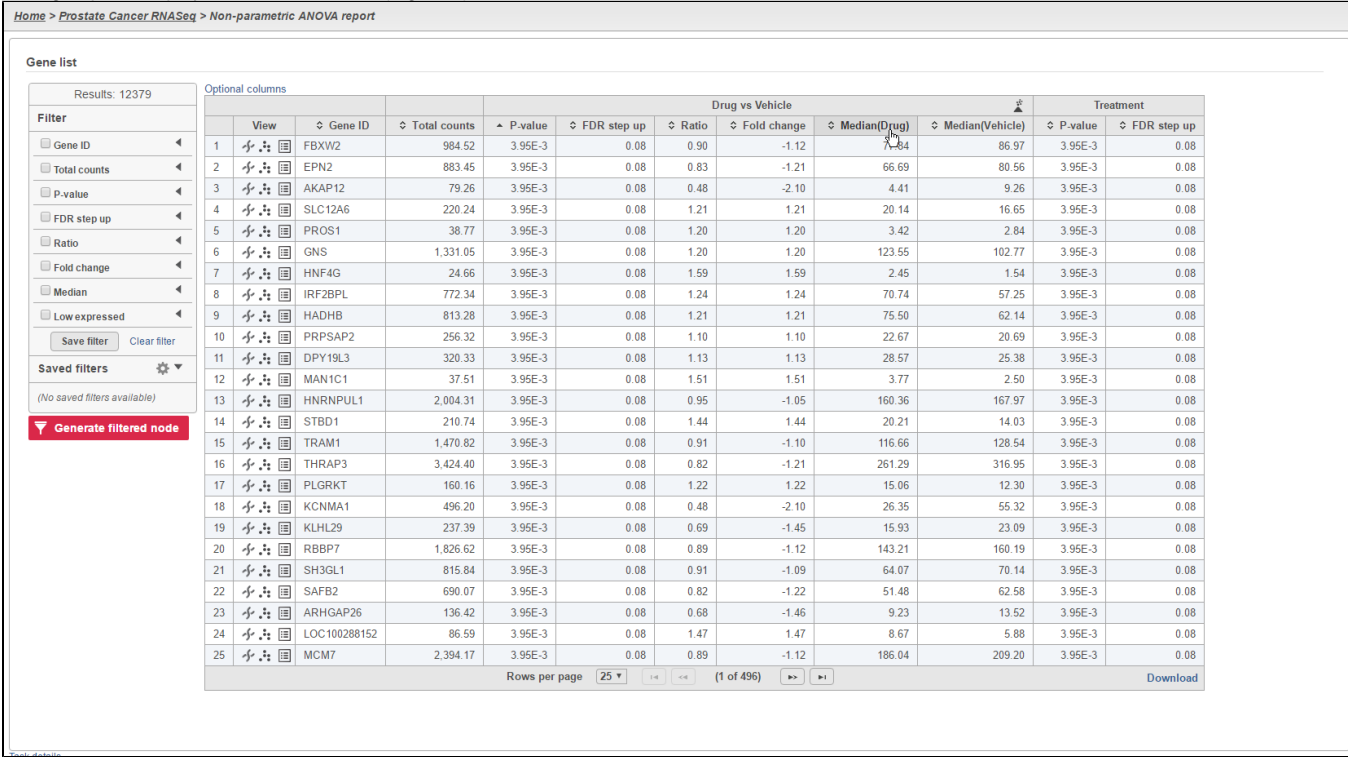


Figure 10. The task's ANOVA report will display the median instead of the LSmean

Additional Assistance

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

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Your Rating: ★★★★★

Results: ★★★★★ 41 rates

