

# Package ‘CausCor’

May 24, 2022

**Title** Calculate Correlations and Estimate Causality

**Version** 0.1.2

**Description** This tool performs pairwise correlation analysis and estimate causality.  
Particularly, it is useful for detecting the metabolites that would be altered by the gut bacteria.

**URL** <https://github.com/sugym/CausCor>

**License** MIT + file LICENSE

**Language** en-US

**Encoding** UTF-8

**RoxygenNote** 7.1.2

**Imports** cowplot, dplyr, ggplot2, grDevices, magrittr, stats, WriteXLS

**Suggests** testthat (>= 3.0.0)

**Config/testthat/edition** 3

**NeedsCompilation** no

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**Repository** CRAN

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 filter\_40

*Make list of A-B pair causal correlations - 40% Filtering version*


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**Description**

Make list of A-B pair causal correlations - 40% Filtering version

**Usage**

```
filter_40(
  a_mat,
  b_mat,
  a_category,
  b_category,
  min_cor,
  min_r2,
  min_sample = ceiling((ncol(a_mat) - 1) * 0.4),
  max_sample = ncol(a_mat) - 1 - min_sample
)
```

**Arguments**

a_mat	Matrix of measurements of A for each sample.
b_mat	Matrix of measurements of B for each sample.
a_category	Category name of A.
b_category	Category name of B.
min_cor	Minimum spearman correlation coefficient.
min_r2	Minimum R2.
min_sample	Minimum number of samples. The default is 40% of the total samples.
max_sample	Maximum number of samples. The default is 60% of the total samples.

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 filter\_n

*Make list of A-B pair causal correlations - Normal Filtering version*


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**Description**

Make list of A-B pair causal correlations - Normal Filtering version

**Usage**

```
filter_n(a_mat, b_mat, a_category, b_category, min_cor, min_sample, min_r2)
```

**Arguments**

a_mat	Matrix of measurements of A for each sample.
b_mat	Matrix of measurements of B for each sample.
a_category	Category name of A.
b_category	Category name of B.
min_cor	Minimum spearman correlation coefficient.
min_sample	Minimum number of samples.
min_r2	Minimum R2.

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plot_16	<i>Save scatter plots</i>
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**Description**

Save scatter plots

**Usage**

```
plot_16(a_mat, b_mat, list, out_info)
```

**Arguments**

a_mat	Matrix of measurements of A for each sample.
b_mat	Matrix of measurements of B for each sample.
list	List of results.
out_info	Output directory.

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save_text	<i>Save list as text file</i>
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**Description**

Save list as text file

**Usage**

```
save_text(list, out_info, file_type)
```

**Arguments**

list	List of results.
out_info	Output directory.
file_type	Choose from "excel", "csv", "tsv".

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