example_dataset  Example dataset

Description
Example dataset

Usage
example_dataset

Format
A list of three matrices: each contains FRAP data for a control or experimental group. For each matrix, nrow = time_points + 1, ncol = sample size.

exclude  Exclude samples from the dataset

Description
If certain samples are of poor quality, use this function to exclude them from the dataset.

Usage
exclude(ds, group, cols)

Arguments
- ds: Name of the dataset.
- group: Name of the group from which to exclude certain samples.
- cols: A vector of numbers specifying the column(s) to exclude.

Value
Modified dataset in the same format.

Examples
ds <- exclude(example_dataset, group = "mut1", cols = c(1,3))
frapplot  

*Plot FRAP data of two selected groups*

**Description**
Plot FRAP data of any two groups (e.g. control and mutant) in a consistent and publishable format.

**Usage**
frapplot(path, control, mutant, info)

**Arguments**
- **path** Path of the output directory
- **control** Name of the control.
- **mutant** Name of the mutant.
- **info** Returned information from `frapprocess()`.  

**Examples**
```r
cinfo <- frapprocess(example_dataset, seq(0, 145, 5))
frapplot(tempdir(), "control", "mut2", cinfo)
```

---

frapprocess  

*Process FRAP data*

**Description**
Normalize and analyze FRAP data. Perform non-linear regression and calculate ymax, ymin, k, halftime, tau, total_recovery, total_recovery_sd.

**Usage**
frapprocess(ds, time_points)

**Arguments**
- **ds** A dataset that contains FRAP data for multiple experiment groups
- **time_points** A vector of time points (in second) that the experiment uses, e.g. 0, 5, 10, ....
Value

A list of results:

- `$time_points`: a vector of time points
- `$summary`: summary of the regression
- `$sample_means`: a matrix of sample means, nrow = num of time points, ncol = sample size
- `$sample_sd`: a matrix of standard deviations, nrow = num of time points, ncol = sample size
- `$model`: a list of models for each group from the non-linear regression
- `$details`: details of the regression for each group

Examples

```r
info <- frapprocess(example_dataset, seq(0, 145, 5))
```
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