Cochran Armitage Measuring Trends for RFL

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```
# S pneumoniae
# Install the DescTools package
if (!requireNamespace("DescTools", quietly = TRUE)) {
  install.packages("DescTools")
}

library(DescTools)

# Input the data into a matrix, with rows corresponding to time points
# MDR and Not MDR counts
data_matrix <- matrix(c(
  1,    95,
  0,    100,
  1,    79,
  1,    50,
  0,    29,
  0,    70,
  0,    38,
  0,    13,
  0,    26,
  0,    22,
  0,    15
), byrow = TRUE, ncol = 2)

# Perform the Cochran-Armitage test for trend
result <- CochranArmitageTest(data_matrix)

# View the test result
print(result)
```

```
##
##  Cochran-Armitage test for trend
##
## data:  data_matrix
## Z = -0.96816, dim = 11, p-value = 0.333
## alternative hypothesis: two.sided
```

```
# S Typhimurium
# Install the DescTools package
if (!requireNamespace("DescTools", quietly = TRUE)) {
  install.packages("DescTools")
}
```

```r
library(DescTools)

# Input the data into a matrix, with rows corresponding to time points
# and columns to MDR and Not MDR counts
data_matrix <- matrix(c(
9,  4,
13, 2,
18, 1,
5,  0,
3,  0,
4,  0,
1,  0,
1,  2,
1,  1,
0,  0
), byrow = TRUE, ncol = 2)

# Perform the Cochran-Armitage test for trend
result <- CochranArmitageTest(data_matrix)

# View the test result
print(result)
```

```
##
##  Cochran-Armitage test for trend
##
## data:  data_matrix
## Z = -0.66207, dim = 10, p-value = 0.5079
## alternative hypothesis: two.sided
```

```r
# H influenzae

install.packages("rmarkdown")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

```r
install.packages("knitr")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

```r
(!requireNamespace("DescTools", quietly = TRUE))
```

```
## [1] FALSE
```

```r
install.packages("DescTools")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

```r
library(DescTools)

# Input the data into a matrix, with rows corresponding to time points
# MDR and Not MDR counts
data_matrix <- matrix(c(
1,  7,
```

```
5,  7,
5,  3,
7,  4,
4,  1,
6,  2,
3,  0,
1,  1,
1,  0,
0,  1,
1,  0
), byrow = TRUE, ncol = 2)

# Perform the Cochran-Armitage test for trend
result <- CochranArmitageTest(data_matrix)

print(result)
```

```
##
##  Cochran-Armitage test for trend
##
## data:  data_matrix
## Z = 2.5397, dim = 11, p-value = 0.0111
## alternative hypothesis: two.sided
```

```
# K pneumoniae
# Install the DescTools package
if (!requireNamespace("DescTools", quietly = TRUE)) {
  install.packages("DescTools")
}

library(DescTools)

# Input the data into a matrix, with rows corresponding to time points
# and columns to MDR and Not MDR counts
data_matrix <- matrix(c(
0,  0,
1,  4,
1,  0,
2,  0,
3,  1,
2,  2,
1,  0,
3,  7,
1,  0,
3,  0,
3,  6
), byrow = TRUE, ncol = 2)

# Perform the Cochran-Armitage test for trend
result <- CochranArmitageTest(data_matrix)

# View the test result
print(result)
```

```
##
```

```
##  Cochran-Armitage test for trend
##
## data:  data_matrix
## Z = -0.21038, dim = 11, p-value = 0.8334
## alternative hypothesis: two.sided
```