

Cochran Armitage Measuring Trends in the Proportions of Isolates Resistant to Second-Line Antibiotics

2024-04-09

```
install.packages("rmarkdown")

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

install.packages("knitr")

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

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

library(DescTools)

# resistant and not resistant counts

data_matrix <- matrix(c(
46, 49,
37, 63,
41, 39,
19, 32,
16, 13,
45, 25,
13, 25,
6, 7,
15, 11,
13, 9,
8, 7
), 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 = 1.7985, dim = 11, p-value = 0.07211
```

```

## alternative hypothesis: two.sided
# S Typhimurium
# Install the DescTools package
if (!requireNamespace("DescTools", quietly = TRUE)) {
  install.packages("DescTools")
}

library(DescTools)

data_matrix <- matrix(c(
1, 12,
1, 14,
0, 19,
0, 5,
1, 2,
4, 0,
1, 0,
3, 0,
0, 0,
2, 0,
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 = 5.864, dim = 11, p-value = 4.52e-09
## alternative hypothesis: two.sided
# H influenzae

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

## [1] FALSE
install.packages("DescTools")

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

library(DescTools)

data_matrix <- matrix(c(
1, 7,
0, 12,
0, 8,
3, 8,
0, 5,
1, 7,

```

```

3, 0,
0, 2,
0, 1,
0, 1,
0, 1
), 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 = 1.2877, dim = 11, p-value = 0.1978
## alternative hypothesis: two.sided

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

library(DescTools)

data_matrix <- matrix(c(
0, 0,
1, 4,
1, 0,
2, 0,
4, 0,
2, 2,
1, 0,
7, 3,
1, 0,
3, 0,
9, 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 = 2.6765, dim = 11, p-value = 0.00744
## alternative hypothesis: two.sided

```