# Package 'rbscCI'

January 29, 2024

**Type** Package

**Title** Blyth-Still-Casella Confidence Interval

**Version** 0.1.1

**Date** 2024-01-29

**Description** Provides a fast calculation of the Blyth-Still-Casella confidence interval. The implementation follows the 'StatXact' 9 manual (Cytel 2010) and ``Refining Binomial Confidence Intervals'' by George Casella (1986) <doi:10.2307/3314658>.

**License** GPL (>= 3)

**Imports** Rcpp

**LinkingTo** Rcpp, BH

**RoxygenNote** 6.0.1

**Suggests** testthat

**NeedsCompilation** yes

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**Repository** CRAN

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## R topics documented:

## bscCI *Blyth-Still-Casella confidence interval*

### Description

Blyth-Still-Casella confidence interval

### Usage

```
bscCI(n_tot, n_suc, conf, digits = 2)
```

### Arguments

| | |
|---|---|
| n_tot | Total number of experiments |
| n_suc | Number of successes |
| conf | Confidence level (1-alpha) |
| digits | Number of decimal places to be used |

### Details

Computes the exact Blyth-Still-Casella binomial confidence interval. The initial CI is the Clopper-Pearson confidence interval.

### Value

A vector containing the confidence interval. If `digits` is given, both upper and lower limits are rounded to the given number of digits.

### Examples

```
bscCI(100,25,0.95,digits = 3)
```

## cpCI *Clopper-Pearson confidence interval*

### Description

Clopper-Pearson confidence interval

### Usage

```
cpCI(n_tot, n_suc, conf, digits = 2)
```

### Arguments

| | |
|---|---|
| `n_tot` | Total number of experiments |
| `n_suc` | Number of successes |
| `conf` | Confidence level (1-alpha) |
| `digits` | Number of decimal places to be used |

### Details

Computes the Clopper-Pearson confidence interval.

### Examples

```
cpCI(100,25,0.95)
```

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## `rbscCI` *Blyth-Still-Casella Confidence Interval*

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### Description

Blyth-Still-Casella Confidence Interval

### Details

Provides a fast calculation of the Blyth-Still-Casella confidence interval.

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