**Package ‘Titre'**

**Package**: Titre

**Type**: Package

**Title**: ELISA titre

**Version**: 0.1.0

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**Description**: This package is required for calculation of cutoff value for ELISA.

In addition, it can be used to calculate the titre value.

**Depends**: R (>= 2.15)

**Imports**: broom, stats

**Suggests**: knitr, rmarkdown

**VignetteBuilder**: knitr

**License**: GPL-3

**Encoding**: UTF-8

**LazyData**: true

**RoxygenNote**: 7.1.1

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**R topics documented:**

**cut\_off()……………………………………………………………….….2**

**titre() ……………………………………………………………………..3**

**Determination of cutoff value of ELISA**

For determination of cutoff value of ELISA, the ODs of the negative controls are required. So, create the vector containing OD values of negative control wells.

**cut\_off(x)**

**Arguments**

x numeric variable containing the OD values of negative controls

Author(s)

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References

Frey, A., Canzio, JD., Zurakowski. 1998. A statistically defined endpoint titer determination method for immunoassays. Journal of Immunological Methods. 221:35-41

*Examples*

>x=c(0.01,0.011,0.0125,0.0145,0.0111,0.01123)

> cut\_off(x)

*$Cutoff\_value*

*[1] 0.01515448*

*$Reference*

*[1] "Frey, A., Canzio, JD., Zurakowski. 1998. A statistically defined endpoint titer determination method for immunoassays. Journal of Immunological Methods. 221:35-41"*

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**Determination of titre value**

titre(cutoff, dilutions, OD, n)

**Arguments**

cutoff: (numeric variable) this indicates the cutoff value of ELISA

dilutions: (numeric variable) different dilutions of serum or antigen

OD: (numeric variable) this indicates the optical densities

n: (numeric variable) this refers to the number of times the dilutions are made. Generally, for ELISA it is 2 fold dilution (so n=2)

**Value**:

Generates a dataframe containing the predicted values of ELISA without transformation, with log transformation and with reciprocal transformation; R-square values of each of the transformations and the p-values of each of the transformations.

**Examples**:

> dil=c(100,200,400,800,1600) # Dilutions of ELISA (2 fold dilution, hence n=2)

> OD=c(0.4,0.25,0.11,0.056,0.021)

> titre(cutoff = 0.015, dilutions = dil, OD = OD, n=2)

|  |  |  |  |
| --- | --- | --- | --- |
| Statistic | Untransformed | Log | Reciprocal |
| R\_Square | 0.643969523 | 0.924203983 | 0.981073266 |
| p.value | 0.102200884 | 0.009066411 | 0.001111441 |
| Predicted\_titre | 1096.393754 | 1115.410626 | 5001.438262 |

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